LEGAL AND POLICY ISSUES RAISED BY THE PROPOSED NOTION OF "AEROSPACE OBJECT"+

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ABSTRACT

This presentation first takes note of the use of the term "aerospace" in the general context of air and space law and traces briefly the background that gave rise not long ago to the introduction of a novel expression "aerospace object," a phrase distinct from the notion of "space object," commonly used since the dawn of the space age.

The paper analyzes what has been suggested as a possible definition of "aerospace object" and points to the need for further clarification in light of envisaged commercial developments in very fast, long-distance, earth transportation so that appropriate policy evaluations and choices can be made with respect to the applicability or inapplicability of norms of air and space law.

If an aerospace object's basic purpose and function is earth-bound transportation and is seen in the light of an aircraft that briefly uses what may be termed cosmic speed, a multitude of legal issues surface. Basic in importance are the policy choices governing the flight of one state's space object through the airspace of another state. Such choices should take into account a whole gamut of variables, including the existing legal framework of air and space law, past state practices and precedents, national security considerations, and even effects of possible violations of cardinal norms of space law if such can be envisaged. At the same time, such aerospace objects even in free airspace should conform to international air law regulations and requirements such as safety, much as aerospace objects in earth-bound transportation should comply with space debris mitigation, rules of the road, and other requirements while operating briefly around the fringes of outer space. Careful solutions must be pondered by air traffic and space lawyers with respect to legal norms applicable to space objects ascending or descending through the airspace of a foreign state.

While the definition of aerospace object is currently based on just two criteria, *i.e.*, the capability of an object to travel through outer space and its capability to remain in the airspace for a certain period of time, as aerospace objects become more sophisticated in design, it is clear that their definition and the effect of such on legal and policy issues for air and space law may have to be reevaluated in light of additional criteria.

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Introduction and Retrospect

The use of the phrase "aerospace object" has surfaced in U.N. discussions thrusting on international legal technicians and policy makers a set of challenging issues and alternative choices in the fields of air and space law. Prior to its sudden emergence, the phrase has rarely been encountered in the legal literature although the word "aerospace" has been used in joint combination with "law" to make up the phrase "aerospace law."

If an attempt were made to shed light on the background of the term "aerospace law" and trace the possible reasons for its emergence, one would undoubtedly come across the writings of such a well-known authority as John C. Cooper who suggested analogies from the law of the sea and referred to territorial airspace, contiguous zone and the space beyond.[1]

Similarly, Nicolas Mateesco Matte compared the territorial sea to the territorial air and used the expression of "Aerospace Law" as the title of his 1969 book in which he restated his earlier held views, opposing arbitrary legal boundaries between airspace and outer space and

championing the establishment of an aerospace law based on a new functional theory.[2]

There can be little doubt that analogies drawn from the law of the sea have contributed to the tendency to place air and space law under the unifying umbrella of "aerospace law." Of course, this was a hard thing to sell because with entry into force of the fundamental charter of space law, the 1967 Outer Space Treaty,[3] the contours of a legal system distinct from air law seemed to have emerged. With the passage of time and in light of four additional international treaties and a number of resolutions dealing with the distinct law of outer space, the contention that there could be a fusion of air and space law under the heading of "aerospace law" became even more remote. A quick glance at the vast literature reveals an overwhelming number of writers who have preferred to use the now generally accepted phrase "space law."

Aerospace Object and the U.N. Questionnaire

The coupling of the terms "aerospace" and "object" in the joint expressions of "aerospace object" surfaced first in the Legal Subcommittee of the U.N. Committee on the Peaceful Uses of Outer Space (COPUOS) in connection with the definition and delimitation of outer space.[4] This issue has been on the agenda of the Subcommittee since 1967 due to the fact that advocates of the spatial and functional theories could not agree whether a boundary should be established internationally, at a height of approximately 100-110 km above sea level, as proposed by the Soviet Union, or whether such delineation was unnecessary, serving no useful purpose, as asserted by several western spacefaring nations, including the United States. Notwith-standing this deadlock, practical developments over the last 30 years seem to have confirmed that the area where artificial satellites and other man-made objects are in orbit around the earth and beyond is outer space. However, the actual boundary line between airspace and outer space remains internationally undeter-mined to date.

In 1991, the Soviet Union made an attempt to overcome the long-standing impasse and during the general discussion of the Legal Subcommittee of the COPUOS agenda item on the definition and delimitation of outer space, with the support of some other delegations, suggested that the Subcommittee should commence an "exchange of views on the international legal aspects of future exploitation of aerospace systems."[5] As a follow-up in 1992, the Russian Federation, continuing the membership of the Soviet Union in the United Nations, submitted a working paper entitled "Questions concerning the legal regime for aerospace objects."[6] It was after this initiative that, in 1993, the Chairman of the respective Working Group circulated an informal working paper entitled "Draft questionnaire concerning aerospace objects."[7] Two years later, at the thirty-fourth session of the Subcommittee, the Working Group finalized the text of the Questionnaire on possible legal issues with regard to aerospace objects" (hereinafter "Questionnaire") in an effort to clarify issues concerning the definition and delimitation of outer space and recommended that it should be circulated to the States Members of COPUOS.[8]

Definition and Meaning of "Aerospace Object"

It was the circulated Questionnaire that raised the issue whether an "aerospace object" could be defined as "an object which is capable both of traveling through outer space and of using its aerodynamic properties to remain in airspace for a certain period of time."[9]

While the purpose of the Questionnaire was to help the Committee in finding a common ground regarding the definition and delimitation of outer space, it became apparent from several of the responses received that while the definition was acceptable for working purposes, it needed further refinement and clarification. As an example, reference was made to the phrase "for certain period of time." Some delegations expressed the view that the definition should provide only for functional, man-made objects as opposed to space debris or natural objects. It was also pointed out that while the use of the term "aerospace systems" or "space transportation systems" may have appeared more appropriate than the uncommonly used phrase "aerospace object," the term "space transportation systems" as used in the report of COPUOS and its Scientific and Technical Subcommittee had a wider meaning, covering both the transportation systems of the space-shuttle-type vehicles and

the usual rocket carriers. Therefore, that term would not be appropriate for describing the hybrid systems that might be used for both air flight and missions in outer space.[10]

One other legitimate query requiring clarification was the question whether the definition was meant to apply exclusively to a type of vehicle like the space shuttle whose main function has been transportation of people and cargo into space but which has also been using its aerodynamic properties when returning to land on earth, in a way reminiscent of the landing of an aircraft. The use of the term "aerospace object" in lieu of "space object" left this interpretation somewhat doubtful. In view of this, it was more likely that, apart from objects launched into outer space, the definition had also intended to cover the proposed aerospace-plane-type vehicle the primary purpose of which was point-to-point transportation on earth (the carriage of a payload and/or passengers from one point on the earth to another) though for a brief period of time such vehicle was expected to travel through the fringes of outer space.

Several of the responses received were in line with the foregoing interpretation. For instance, the Czech Republic in its answer indicated that "aerospace object" may cover different types of aerospace vehicles, some of which are still in the design and planning stage, while others have been suspended or even abandoned.[11] Italy also observed that the definition which considers the twofold capacity of the aerospace object is closely linked with the developing technology.[12] Most importantly, the Russian Federation, which brought up the issue of "aerospace object," stated unequivocally that there are two basic programs (purposes) for using aerospace objects, namely:

1. undertaking a flight from one point on the earth to another (for this purpose the object may undertake part of its flight in outer space, not attaining cosmic speed); and

2. delivering a crew and/or payload in outer space and back to the earth (its aerodynamic properties at the time of take-off and landing enable the object to remain in airspace for a certain period of time).[13]

If, as these responses suggest, the Questionnaire's proposed definition is not limited to the space-shuttle-type vehicle but also covers the aerospace plane which in light of expected commercial developments aims at a very fast, long-distance earth transportation, a whole range of issues must be examined so that appropriate policy evaluations and choices can be made with respect to the applicability or inapplicability of norms of air and space law in factual scenarios which relate to both the aerospace plane and the space-shuttle-type vehicle.

In line with the preceding assumption that the Questionnaire's purported definition covers both the space-shuttle-type vehicle and the briefly circumscribed aerospace plane, our attention will now turn to the determination of the legal regime that should govern the two distinctly different aerospace objects.

Aerospace Object as an Aerospace Plane

The development and eventual utilization of the aerospace plane is expected to herald the introduction of an advanced space transportation system consisting of a vehicle which would be capable of taking off horizontally and proceeding directly single-stage into outer space.[14] It would have the potential of spawning a new generation of commercial aircraft with the ability to span intercontinental ranges in a matter of minutes. A flight from New York to Tokyo may take only a couple of hours compared to the currently required time of 16 hours or more.[15]

The program relating to the development of the aerospace plane reflects a combination of aeronautical and space technologies; its utility could be gauged from the vehicle's capability of global unrefueled operation and of reaching any point on the earth in two hours or less. While at this stage of scientific research and experimentation, it is not possible to determine with certainty the configuration and eventual capabilities of future aerospace planes, for purposes of our inquiry, it will be assumed that early versions of the plane under discussion will be used as terrestrial transportation devices with the capability of taking off from a point on earth, flying at will in the airspace and traversing through the fringes of outer space without completing an orbit, for the sole purpose of reaching another point on earth.

While there are many legal and policy issues which arise in the wake of the development of the aerospace plane, the central policy issue will be to determine what laws, domestic and international, should be applied to

this versatile vehicle in different factual scenarios. The main issues relate to the definition and delimitation of airspace and outer space, the status of astronauts, and the issues of liability, registration and jurisdiction.[16] Will the policy choice be to apply air law to the aerospace plane while traveling through the fringes of outer space or will the choice be to apply space law necessitating the application of space law rules embodied in the relevant international conventions? Will the personnel of the craft be regarded as astronauts, *i.e.*, "envoys of mankind" to whom the special privileges extended by the Agreement on the Rescue and Return of Astronauts and Space Objects would be applicable?[17] Will the law of the underlying state be applicable to an aerospace plane in the airspace in areas currently not utilized by conventional aircraft in view of the fact that the upward extent of national sovereignty has internationally not been determined as yet? Will space law govern an object orbiting the earth at a height of 30 km if new technology enables it to remain in orbit at that height?[18]

In formulating responses to these questions, as a general guideline, it may be suggested that if the aerospace object is used as an aerospace plane for the primary purpose of operating as an aircraft engaged in earth-bound transportation and only incidentally reaches the fringes of outer space, air law should be applicable to it. However, it stands to reason that such objects may be expected to comply with space debris mitigation, rules of the road, and other requirements while operating briefly around the fringes of outer space.

More problematic would be to determine the law applicable to the aerospace plane in areas which are below outer space but which are above areas currently used by aircraft and recognized as national airspace. While the general guideline might still be useful, international agreement or another form accommodation may be necessary to resolve any dispute that might arise.

It is also doubtful, although not necessarily impossible, that new technology could lead to the acceptance of lowering the current height of the area which is regarded as outer space from approximately 100 km to 30 km.

Aerospace Object as a Space-Shuttle-Type Vehicle, i.e., a "Space Object"

The issue of whether the policy choice should be to apply rules of air law or space law in connection with a technological innovation is not entirely new. At the time when the space shuttle was born, policy makers and lawyers were already faced with a similarly vexing issue which arose because the shuttle ascends into outer space with the assistance of rockets just as does a conventional spacecraft and descends from outer space by gliding through the atmosphere and touching down on a runway in a manner reminiscent of the landing of an aircraft. If the policy choice was arrived at because the vehicle's primary function and purpose was to operate as a device in outer space, this would in fact mean that the choice was to regard the vehicle as a "space object" with all the attendant legal consequences that follow therefrom.

The notion of "space object" has been central to the international law of outer space. Since the dawn of the space age, it has been the most frequent concept encountered in international agreements, U.N. resolutions, domestic laws, executive pronouncements, and court cases. Notwithstanding its crucial position, only a partial definition of this phrase may be found in the Liability and Registration conventions, both of which state that the term "space object" includes "component" parts of a space object as well as its "launch vehicle" and "parts" thereof.[19]

After a consideration of such vital issues as the relevance and purpose of launching, the pre-launch and landing phases, the relevance of outer space, the issue whether to regard extraterrestrial materials as space objects and the meaning of an object, this writer has suggested that a space object be defined as

> an object launched or attempted to be launched in orbit around the earth or beyond. Such object (or a part of it) is a space object (or a part of it) from the time of its launch or attempted launch, through its ascent from earth to outer space or while in outer space, as well as during its orbit, deorbit, reentry and landing on earth.[20]

If so defined, the space-shuttle-type vehicle would clearly qualify as a space object.

The foregoing conclusion was reinforced by the overall purpose and functions of the shuttle and was also fully borne out by an earlier review of the Federal Aviation Act of 1958, the National Aeronautics and Space Act of 1958, the underlying Congressional intent, the relevant legislative history, as well as NASA practice. To this was added an authoritative statement of the Chief Counsel of the Federal Aeronautics Administration, to the effect that space law had to be applied to the space shuttle. This determination was in line both with international air law incorporated in the Paris Convention of 1919 and the Chicago Convention of 1944, as well as with international space law embodied in the Outer Space Treaty of 1967 and the subsequent major international space law conventions.[21]

Since the policy choice has been to regard the space-shuttle-type craft as a space object, all the rules applicable to such objects under international space law apply to such objects. Most crucial among factual scenarios in which such rules apply is the flight by a space-shuttle-type vehicle through the sovereign airspace of another state.

In its response to Question 7 of the UN Questionnaire which raised the issue of whether there are "precedents with respect to the passage of aerospace objects after re-entry into the Earth's atmosphere" and whether international customary law exists with respect to such passage, the Russian Federation stated that there have been relatively few instances of space objects flying over territories of foreign states. As one of such instances, it referred to the flight of the Space Shuttle Atlantis in March 1990 about which the United States communicated information to the USSR a few hours before the overflight as a matter of courtesy.[22] Germany referred to the flight, on November 15, 1988, of the Soviet "Buran" which, after reentry into the Earth's atmosphere, overflew foreign countries for the purpose of touchdown in Baikonur. Germany did not believe that international customary law existed with respect to the passage of space transportation systems over foreign territory, since no international practice on this respect existed and it did not regard this occasion as relevant for the formation of international customary law, especially since the former Soviet Union which was the launching state did not exist anymore.[23]

In view of the relatively few relevant flights that have been noted in the literature, exclusive of accidental situations, it is perhaps not surprising to find that the initial responses of other states, which did not, as of then, include a response from the United States, failed to reveal sufficient support for the conclusion that the right of passage for an ascending or descending space object has been generally recognized as a customary rule of international law. At the same time, there has been an indication that an explicit admission of the right of innocent passage which was not prejudicial to the peace, good order or security of the subjacent states and a more detailed regulation of the exercise of this right should be considered as a way for the legalization of the actual practice.[24] This point was also intimated by the response of the Russian Federation in its statement that provisions of international customary law with respect to the passage of aerospace objects after re-entry into the Earth's atmosphere are currently being "elaborated."[25]

If one turns from the preceding initial sample of governmental responses to the views of distinguished authorities, a recent survey appears to reveal to this writer widely divergent views.[26] At one end of the spectrum, are the positions of Cheng, Dembling and Terekhov denying the existence of international customary law with respect to the passage of aerospace objects through foreign airspace. Less explicit in their denial are the views of Kopal, Haanappel and Masson-Zwaan, with some equivocation by Vereshchetin and Danilenko and a limited recognition of the right by Lachs. At the other end of the spectrum of competent opinions are the assertions by Finch and Christol that there are such rights.[27]

One explanation for the lack of uniformity, apart from strongly entrenched beliefs, may also have been the time element. During a ten year period, or sometimes even less, as suggested by learned allusions to the notion of "instant custom," perceptions, approaches, and attitudes can change. This writer's own position has also been influenced by actions or inactions in the world arena over a period of time and will no doubt be affected again in the future. Seen in such a light, he stated in 1988:

> The principle of the freedom of exploration and use of outer space, a cardinal principle of the 1967 Outer Space Treaty, in a sense implies the freedom to go into outer space and also the freedom to return to earth from outer space. Because of the very limited number of space flights that might have traversed through the airspace of foreign states the exact nature and scope of this freedom has so far not been determined by internation-al customary law.[28]

In 1993, this author made the following observation:

> States have not objected to the
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> > flight of artificial earth satellites above their territories in outer space nor to the ascent or descent of foreign space objects though undoubtedly some of these may have passed through their territorial air spaces. It is not certain how many times such a passage may have occurred since the upper boundary of national territorial air space so far has not been determined by international agreement or international customary law. If there is an international customary law, it is based on common perceptions and shared expectations of international authoritative decision-makers regarding such passage and supported by the cardinal principle of freedom of exploration and use of outer space embedded in the Outer Space Treaty of 1967 and generally recognized to the extent and in line with existing state practice."[29]

On the same occasion, he added:

> to the extent that States have not objected to the flight of artificial satellites above their territories in outer space nor to the ascent or descent of space objects through their national air spaces in the situations where such have occurred, a limited international custom with legal implications seems to have emerged.[30]

As late as 1996 this writer's position which, in his view, other learned colleagues appeared to have shared, may be briefly restated in the following terms. If the space-shuttle-type of aerospace object was used for the primary purpose to operate as a device in outer space, space law should apply to it. Once the primary purpose of the object is determined, the corresponding legal regime applicable to it should continue to be applied for the duration of the object's flight, whether in the airspace or outer space, at a particular time. Attempting to proceed otherwise would lead to conflicting interpretations with respect to the applicable law and would greatly confuse the problem.

If the primary function of the aerospace object was to operate as a spacecraft, then air law would not be applicable to it except in situations in which the craft returns in a non-accidental situation to a non-launching state. Aerospace objects launched into outer space are subject to the rules governing the registration of objects so long as the primary purpose of the object has been to operate as a spacecraft. Such an object should be governed by the national laws of the launching state, or if it was launched from a platform in outer space, it should be governed by outer space rules. As long as the object's primary function was to operate as a spacecraft - its safe passage to and from outer space has now attained the status of international customary law.[31]

Within the confines of this presentation, it is not possible to list even in a schematic manner all the relevant factors which prompted this writer to alter his earlier positions but attention may be drawn to the flight of the Soviet "Buran,"[32] about which no advance notice appears to have been given and no permission was requested or granted. Another notable occasion was the flight of the Space Shuttle Atlantis[33] about which a few hours notice was given by the U.S. to the U.S.S.R. only as a "matter of courtesy." This was accepted as such without any charge of a violation of territorial sovereignty that was frequently made in the past in connection with overflights of another kind. Nor was there any warning about avoidance of such an overflight in the future. Additionally, an agreement was also reached establishing that the fact that this

information was furnished should not be deemed to set a precedent.[34]

As to the argument of traditionalists that the emergence of international customary law is normally a relatively slow process, it may be pointed out that many publicists do not reject the notion of "instant" international customary law in relation to space activities. As observed by the International Court of Justice in the North Sea Continental Shelf case: "The passage of only a short period of time is not necessarily, or, of itself, a bar to the formation of a new rule of customary law."[35]

Conclusion and a Glance at the Future

The preceding overview of some of the legal and policy choices associated with the notion of "aerospace object" suggests that the choice whether to recognize, in whatever form or extent, the existence of international customary law or to pursue an adoption of guidelines in the form of a UN resolution or perhaps to go the route of international treaty making, should take into account a whole gamut of variables, including the existing legal framework of air and space law, past state practices and precedents, national security, and other considerations,[36] and even effects of possible violations of cardinal norms of space law, if such can be envisaged.

Could a state lawfully deny another state's spacecraft the right of innocent passage at a height of 40-90 km in the space above its territory? Would this violate the fundamental freedom of the exploration and use of outer space? Should the answer be influenced by an analogy to the law of the sea where, in the absence of mutual agreement or international convention, a land-locked state has no independent right for access to the sea and claim innocent passage through the territory of a coastal state notwithstanding the principle of the freedom of the seas?[37] Should this be our policy choice for interpreting the freedom of exploration and use of outer space enshrined as a fundamental principle in the 1967 Outer Space Treaty? A courageous negative answer to this will be a challenge for air and space lawyers in the 21st century. However, in pondering their answer, decision makers should be reminded of the words of the late Judge Manfred H. Lachs who cautioned that

> [T]he interdependence of the traffic in the air and outer space should not subject the activities of states to unnecessary limitations. To survive in the world today states need to open the frontiers of the air to other states unless they prefer to live in complete isolation, where very few, if any, could survive and develop.[38]

If the right of innocent passage to and from outer space, as a matter of international customary law is contested or challenged, a U.N. resolution, as a preferable minimum, could help in allaying any doubt.

Before closing this presentation, a final *caveat* ought to be stressed. While the definition of aerospace object is currently based on just two criteria, *i.e.*, the capability of an object to travel through outer space and its capability to remain in the airspace for a certain period of time, as aerospace objects become more sophisticated in design, their definition and the effect of such on legal and policy issues for air and space law may have to be reevaluated in light of additional criteria. Additionally, if future technological developments were to create a hybrid vehicle capable of moving freely in the air like an aircraft and also moving at will in outer space, a consideration of new laws, both domestic and international, may become necessary in order to adjust legal regulations to the latest scientific and technological innovations.

NOTES

1. *See* John C. Cooper, *Legal Problems of Upper Space*, 50 PROC. AM. SOC'Y INT'L L. 85-93 (1956); *idem*, *Flight-Space and the Satellites*, 7 INT'L & COMP. L. Q. 82, at 89 (1958). By his proposal, Professor Cooper, in essence, revived the old zone idea which was advocated half a century earlier and was based on maritime analogy.

2. Matte retained the same title in his subsequent book. *See* NICOLAS MATEESCO MATTE, AEROSPACE LAW - FROM SCIENTIFIC EXPLORATION TO COMMERCIAL UTILIZATION (1977).

3. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 205 (entered into

force for the United States Oct. 10, 1967) [hereinafter "Outer Space Treaty"].

4. U.N. Doc. A/AC.105/484, at annex II, para. 9 (1991).

5. *Id.*

6. *See* U.N. Docs. A/AC.105/C.2/L.189 (1992)

7. U.N. Doc. A/AC.105/C.2/1993/CRP.1.

8. U.N. Doc. A/AC.105/C.2/1995/CRP.3/ Rev. 3 of 31 Mar. 1995, reproduced in U.N. Doc. A/AC.105/607, para. 38 and annex I, app. (1995). The text of the Questionnaire also appears in 23 J. SPACE L. 223 (1995).

9. *Id.*

10. U.N. Doc. A/AC.105/639, at 14-15 (1996).

11. U.N. Doc. A/AC. 105/635, at 10 (1996). Similarly, in addition to the U.S. space-shuttle-type vehicle, Germany noted references to future space transportation systems such as, for example, HERMES (ESA), HOTOL (U.K..), HOPE (Japan), S/NGER (Germany) and NASP, the United States Space Plane, which are still in the planning phase and for some of which the financing is disputed or has already been canceled. *Id.* at 10-11.

12. *Id.* at 11.

13. U.N. Doc. A/AC. 105/635/Add.1, at 4-5 (1996).

14. For a comprehensive analysis, see *Stephen Gorove, Legal and Policy Issues of the Aerospace Plane,* 16 J. SPACE L. 147 (1988).

15. *See* The National Aerospace Plane Program, Joint Hearing Before the Subcommittee on Transportation, Aviation and Materials of the Committee on Science, Space and Technology, and the Subcommittee on Research and Development of the Committee on Armed services, U.S. House of Representatives, 100th Cong., 1st Sess. (March 11, 1987), p. 22.

16. For details, see STEPHEN GOROVE, DEVELOPMENTS IN SPACE LAW - ISSUES AND POLICIES 355-56 (1991).

17. Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, April 22, 1968, 19 U.S.T. 7570, T.I.A.S. No. 6599, 672 U.N.T.S. 119 (entered into force for the United States Dec. 3, 1968).

18. That scientific and technological innovations can affect orbiting capabilities appears to be borne out by a recent application of Sky Station International to the Federal Communication Commission (FCC) to create a new Global Stratospheric Telecommunications Service (GSTS) by using a revolutionary technology that holds each of the proposed 250 Sky Station platforms stationary at a 30 km altitude. *See* Request to Establish New GSTS Service, Additional Comments and Petition for Rulemaking, FCC, ET Docket No. 94-124, Mar. 20, 1996. This development suggests the necessity of exercising continued caution to avoid premature determination of demarcation lines.

19. *See* Art. I(d) of the Convention on International Liability for Damage Caused by Space Objects, March 29, 1972, 24 U.S.T. 2389, T.I.A.S. No. 7762, 961 U.N.T.S. 187 (entered into force for the United States Oct. 9, 1973); Art. I(c). of the Convention on the Registration of Objects Launched into Outer Space, opened for signature Jan. 14, 1975, 28 U.S.T. 695, T.I.A.S. No. 8480, 1023 U.N.T.S. 15 (entered into force for the United States Sept. 15, 1976).

20. Stephen Gorove, *Toward a Clarification of the Term 'Space Object' -- An International Legal and Policy Imperative?,* 21 J. SPACE L. 25-26 (1993). The fact that the partial definition of "space object" refers back to itself when speaking of "component parts" of a "space object" and "its" launch vehicle leaves unanswered the fundamental issue of what is or is not a space object or under what circumstances an object becomes or ceases to be a "space object" and the question of the applicability of the relevant space treaty provisions. *Id.* at 12.

21. *See* the SPACE SHUTTLE AND THE LAW 2-3 (Stephen Gorove ed. 1980).

22. U.N. Doc. A/AC.105/635/Add.1, at 4-5 (1996).

23. U.N. Doc. A/AC.105/635/Add.1, at 10-11 (1996).

24. U.N. Doc. A/AC.105/635/Add.1, at 4-5 (1996).

25. According to Terekhov, the phrase "is being elaborated," which appears in U.N. Doc. A/AC.105/635/Add.1, at 5 (1996), is an imprecise translation from Russian; the better translation is "evolving." *See* Andrei D. Terekhov, *Passage of Space Objects Though Foreign Airspace: An International Custom?,* 25 J. SPACE L. 1, at 9 (1997).

26. *Id.* at 4-8.

27. *Id.*

28. *Stephen Gorove, Legal and Policy Issues of the Aerospace Plane*, 16 J. SPACE L. 147, at 148 (1988).

29. PROC. AMERICAN BRANCH OF THE INTERNATIONAL LAW ASSOCIATION, REPORT OF THE SPACE LAW COMMITTEE 105, at 110-111 (1993-1994).

30. *Id.* at 114.

31. *See* Stephen Gorove, *Legal and Policy Issues Raised by the U.N. Questionnaire on Aerospace Objects*, 24 J. SPACE L. 52-53 (1996).

32. *See* note 23 and text preceding it.

33. *See* note 22 and text preceding it.

34. U.N. Doc. A/AC. 105/635/Add.1, at 5 (1996).

35. 1969 I.C.J. 43. *Cf.* discussion of "instant custom" by He Qizhi, *The Outer Space Treaty in Perspective*, 25 J. SPACE L. 93, at 97 (1997), *supra*.

36. The factors that underlie, in general, decision making in the world community are well-known. They operate within the context of the overall conditions and trends prevailing therein. For an overview of the processes of interaction, claim and decision, see MYRES S. MCDOUGAL, HAROLD D. LASSWELL AND IVAN A. VLASIC, LAW AND PUBLIC ORDER IN SPACE 3-137 (1963).

37. While the Geneva Convention appears in favor of ensuring free transit for States having no sea-coast through the territory of a coastal state, this right is predicated on mutual agreement. Under Art. 3 of the Convention:

(1) In order to enjoy the freedom of the seas on equal terms with coastal States, States having no sea-coast should have free access to the sea. To this end States situated between the sea and a State having no sea-coast shall by common agreement with the latter and in conformity with existing international convention accord:

(a) To the State having no sea-coast, on a basis of reciprocity, free transit through their territory; and

(b) To ships flying the flag of that State treatment equal to that accorded to their own ships, or to the ships of any other States, as regards access to seaports and the use of such ports.

(2) States situated between the sea and a State having no sea-coast shall settle, by mutual agreement with the latter, and taking into account the rights of the coastal State or State of transit and the special conditions of the State having no sea-coast, all matters relating to freedom of transit and equal treatment in ports, in case such States are not already parties to existing international conventions.

Convention on the High Seas, Geneva, Apr. 29, 1958, *Entered into force*, Sept. 30, 1962; 13 U.S.T. 2312, 450 U.N.T.S. 82.

38. Manfred Lachs, *Freedom of the Air - the Way to Outer Space, in* AIR AND SPACE LAW: *DE LEGE FERENDA*. 244 (T. L. Masson-Zwaan and P.M.J. Mendes de Leon, eds. 1992).