

**SPACE DEBRIS AND THE UNITED NATIONS:
A POSSIBLE MODUS PROCEDENDI**

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Space debris has been perhaps one of the most, if not the most, popular subjects among outer space lawyers in the last few years. Suffice to say that at the five last Colloquia of the International Institute of Space Law (IISL) alone, from 1989 to 1993, over 40 papers concerning various legal aspects of the space debris problem were presented. Those papers were subsequently published in the IISL Proceedings.^{1/} Needless to say, numerous other works on space debris were published elsewhere during this period.^{2/} Practically all authors were of the view that this issue requires immediate legal attention of the international community and not only suggested various ways and means to commence consideration of the legal aspects of the space debris subject, but as well offered more or less specific proposals to that effect. Thus, it may be said that a broad consensus exists among IISL authors, and maybe even in the doctrine as a whole, that States should elaborate a legal document - a treaty or at least a UN General Assembly resolution - that would effectively address the question of "space junk".

It should not be overlooked, however, that the IISL is an international non-governmental organization: its members participate in the work of the Institute in their personal capacities and, therefore, neither represent their respective

Governments, nor are they bound by those Governments' official positions.

At the intergovernmental level, the situation with regard to the need to commence the elaboration of a space debris treaty or UN resolution is different. The focal point of international cooperation among States in the exploration and peaceful uses of outer space is the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS). Established in 1959, COPUOS has, as one of its objectives, the study of "the nature of legal problems which may arise from the exploration of outer space".^{3/} For this purpose COPUOS established its Legal Subcommittee which for over thirty years has been considering various "legal problems" arising from outer space activities. It must be noted that COPUOS has an outstanding record in the area of developing outer space law. It has successfully elaborated five international agreements and four declarations of legal principles which currently constitute a universally recognized foundation of the law of outer space.^{4/}

Although occasional references to the problem of space debris may be found in COPUOS records of earlier years, in the eighties this subject started to be mentioned practically at every session of COPUOS and its two subsidiary bodies - Scientific and

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Technical, and Legal Subcommittees. However, despite insistent calls by many States that the space debris item should be placed on the agenda of COPUOS and its Subcommittees, the Committee, which works on the basis of consensus, for a long time failed to arrive at such a decision.

Certain aspects of the space debris problem were discussed in the context of COPUOS consideration of the use of nuclear power sources (NPS) in outer space. During that debate, some delegations pointed to the danger of the possible collision of space debris with an object carrying an NPS onboard. However, no specific guidelines were formulated, and the term "space debris" was not even mentioned in the Principles relevant to the use of nuclear power sources in outer space (the NPS Principles) elaborated in COPUOS and adopted by the General Assembly in 1992.^{5/}

"The ice was broken" at the thirty-sixth session of COPUOS in 1993 when the Committee succeeded in making a recommendation that the item entitled "Space debris" should be placed on the agenda of the thirty-first session of the Scientific and Technical Subcommittee in 1994.^{6/}

The thirty-first session of the Scientific and Technical Subcommittee was held at the United Nations Office in Vienna from 21 February to 3 March 1994. It had twelve substantive items on its agenda, including, for the first time, an item entitled "Space debris".^{7/} The Subcommittee had before it a Note by the Secretariat ^{8/} containing the replies by China, Cuba, Ukraine, the United Kingdom and Germany to the request contained in General Assembly resolution 48/39 of 10 December 1993 to provide the Scientific and Technical Subcommittee with information on the problem of collision of space objects, including nuclear power sources, with space debris, and other aspects of space

debris. In addition, working papers on various scientific and technical aspects of space debris (in the context of the NPS issue and in general) were submitted by the United Kingdom ^{9/} and the Russian Federation.^{10/} The Subcommittee also had before it a report entitled "Space debris" submitted by the International Astronautical Federation ^{11/} and heard a number of scientific and technical presentations on the subject of space debris.^{12/}

As a result of the consideration of this agenda item the Subcommittee agreed, inter alia, that "it was important to have a firm scientific and technical basis for future action on the complex attributes of space debris", that at the next session in 1995 the Subcommittee should focus its attention "on the subject of acquisition and understanding of data on the characteristics of the space debris environment, with a view to establishing a common understanding that could serve as the basis for its further deliberations", and that at its next meeting the Subcommittee "should develop a continuing, deliberate, specific multi-year plan for its work on that agenda item".^{13/}

At the thirty-seventh session of COPUOS held in Vienna from 6 to 16 June 1994, the Committee reviewed the work of the Scientific and Technical Subcommittee on the space debris subject, approved the Subcommittee's recommendations thereon and decided that the consideration of this subject should be continued.^{14/}

COPUOS report was submitted to the 49th session of the UN General Assembly which endorsed it in resolution 49/34 of 9 December 1994. It is noteworthy that, having endorsed without changes all other recommendations of the Committee concerning the 1995 work programme of the two Subcommittees, the Assembly has "upgraded" the status of the space

debris item in the agenda of the Scientific and Technical Subcommittee. As reflected in paragraph 13 of the above resolution, the space debris item became one of the items which the Subcommittee must consider "on a priority basis" at its thirty-second session in 1995 (in 1994 that subject was considered as one of the non-priority items, and no recommendation to accord it a priority was made by either the Scientific and Technical Subcommittee or COPUOS).

The above decision by the General Assembly will hardly have any dramatic practical effect upon the pace of the consideration of the space debris subject in the Scientific and Technical Subcommittee. It should not be overlooked that currently the two-week session of this Subcommittee has twelve substantive items (five of them priority ones) to consider. Therefore, in reality the prioritization of the space debris item will perhaps merely mean that, instead of three three-hour meetings allocated to space debris debate in 1994, the Subcommittee will be able to allocate four such meetings in 1995.

At the same time, the importance of this action of the General Assembly should not be underestimated. It has not been often in recent years that the Assembly "corrected" consensus recommendations of COPUOS concerning the agendas of its subsidiary bodies. The decision of the Assembly to make the space debris one of the priority items on the agenda of the Scientific and Technical Subcommittee clearly demonstrates the interest of the international community to have this problem tackled as expeditiously as possible.

It may be concluded from the above that, while the Scientific and Technical Subcommittee has finally commenced consideration of the space debris subject, this process will be a "multi-year" exercise, and most probably quite a lot of time will be needed for the delegates to reach

consensus on "a firm scientific and technical basis" for elaborating a legal document concerning space debris.

As far as the Legal Subcommittee is concerned 15/, the differences of opinion concerning the advisability of including a space debris item on its agenda continue to prevail. All States represented in COPUOS seem to agree that space debris is a serious problem which will not disappear by itself, and that certain legal remedies will eventually be necessary. The disagreement is about timing. The basic argument offered by the opponents of placing the space debris item on the Legal Subcommittee's agenda appears to be that such action would be premature since existing scientific data is still insufficient to serve as a sound basis for the elaboration of a legal document. The main concern of those opposing immediate legal effort seems to be that any hasty legal measure in this field may place unjustified restrictions on the space programs of launching States and thus hinder progress in the exploration and use of outer space. Those concerns are not unfounded. Indeed a delicate balance should be found between the interests of continued activities in the "sixth ocean" on the one hand, and the need to preserve the outer space environment from the danger posed by space debris, on the other.

Clear understanding of the scientific and technical realities of the space debris phenomenon is a logical and necessary precondition for the commencement of specific drafting of legal rules in this field. It remains to be seen, however, when the Scientific and Technical Subcommittee of COPUOS, which has just started to discuss the space debris item, will be able to reach consensus on universally acceptable scientific facts thus laying a foundation for lawyers in the Legal Subcommittee to start drafting a legal document. As mentioned above, in 1995 the Subcommittee intends to

develop a "multi-year" plan for consideration of the space debris item. Thus, if one is to wait until an agreed scientific and technical basis exists thereby enabling legal work, it can be expected that the Legal Subcommittee will not commence the consideration of the space debris issue for quite some time.

Yet, it seems that already today, without any input from the Scientific and Technical Subcommittee, the Legal Subcommittee could take the first step along what promises to be a long road towards an international legal instrument on space debris. This step would be to conduct a review of existing international law applicable to space debris.

It is well established in the doctrine that, although the term "space debris" is not utilized in existing international treaties regulating activities in outer space, some of the provisions of those instruments are clearly applicable to the problem.^{16/} Therefore, the initial efforts of lawyers should be aimed at identifying those already existing international legal rules with a view to determining at a later stage what additional legal regulation would be required.

This review would not be directly connected with or dependent upon the work of the Scientific and Technical Subcommittee on the space debris item. It would rather prepare a "legal component" of the basis for the Legal Subcommittee to move forward at a time when the Scientific and Technical Subcommittee succeeds in producing "a scientific and technical component" of such a basis. At the same time, the proposed review conducted by the Legal Subcommittee could benefit the Scientific and Technical Subcommittee's work on space debris because lawyers may turn out to be helpful in identifying and communicating to natural scientists

certain technical issues for which finding a technological solution is required in order to be able to subsequently formulate a correct legal provision.

It may be recalled in this context that a similar approach - a parallel examination of the same subject in both Subcommittees - was successfully employed by COPUOS in the consideration of the use of NPS in outer space.

The NPS item was first placed on the agenda of the Scientific and Technical Subcommittee in 1979; at the same session of the Subcommittee a group of experts was established to consider the NPS item.^{17/} While the Scientific and Technical Subcommittee continued its work on the NPS item (which is still on that Subcommittee's agenda even after the adoption of the NPS Principles in 1992 ^{18/}), it was decided that, at its nineteenth session in 1980, the Legal Subcommittee should include in its agenda and consider an item entitled "Review of existing international law relevant to outer space activities with a view to determining the appropriateness of supplementing such law with provisions relating to the use of nuclear power sources in outer space".^{19/} The next year, the formulation of the item in the Legal Subcommittee was modified to read: "Consideration of the possibility of supplementing the norms of international law relevant to the use of nuclear power sources in outer space" and a working group was established.^{20/} Finally, in 1986, the wording of the item was changed again and the Legal Subcommittee began "The elaboration of draft principles relevant to the use of nuclear power sources in outer space".^{21/}

It appears that a similar approach could be used in dealing with the space debris issue in the Legal Subcommittee of COPUOS. Review of

existing international law relevant to space debris would be a necessary initial step in the consideration of the legal aspects of this important problem. The acceptance of such modus procedendi would not commit those States, which currently oppose placing the issue of space debris on the agenda of the Legal Subcommittee, to agree to the immediate elaboration of legal rules or guidelines relating to space debris. Although the review of existing international law would perhaps lead to the conclusion that additional legal rules are indeed necessary, giving an actual mandate to the Legal Subcommittee to commence the elaboration of such rules would require a new specific decision to that effect.

Conclusion

The inclusion of the space debris item in the agenda of the Scientific and Technical Subcommittee of COPUOS is an important milestone in the United Nations work in the outer space field. The elaboration of universally acceptable technical recommendations concerning tackling the space debris problem will, most probably, take that Subcommittee quite some time. While a sound scientific and technical basis is a necessary precondition for the Legal Subcommittee of COPUOS to commence drafting specific legal provisions for space debris, it is not necessary for lawyers to idly wait until natural scientists produce such a basis. The Legal Subcommittee could use the time available to conduct a review of the existing norms of international law relating to space debris.

NOTES

1/ It would not be feasible to cite here all the space debris papers presented at the last five IISL Colloquia and IAA/IISL Scientific Legal Roundtables. The interest in this subject may be illustrated by the following, but not at all exhaustive, listing: C.Q. Christol, "Scientific

and Legal Aspects of Space Debris", Proceedings of the 36th Colloquium on the Law of Outer Space [hereafter - Proc.], pp. 368-385; E.R. Finch, Jr., "UN, US and CIS Space Debris Positions: 'Heavenly Junk'", 36th Proc., pp. 263-271; V. Kopal, "Summary of Replies to the Questionnaire Which Included Issues Concerning Space Debris", 36th Proc., pp. 394-404; P.M. Martin, "Liability Issues on Space Debris: The Opinion of a Teacher in International Law", 36th Proc., pp. 405-414; R. Obermann and R.A. Williamson, "Controlling Orbital Debris: The Role of the US Congress", 36th Proc., pp. 423-431; E. Fasan, "Space Debris: A Functional Approach", 35th Proc., pp. 281-290; O. Fernandes-Brital, "Space Debris, A Form of Appropriation of Outer Space", 34th Proc., pp. 167-167; S. Hobe, "Space Debris: A Proposal for Its International Legal Regulation", 34th Proc., pp. 194-200; R.S. Jakhu, "Space Debris in the Geostationary Orbit - A Matter of Concern for the ITU", 34th Proc., pp. 205-214; H.H. Almond, "Protection of the Environment of Outer Space. A Proposed Framework of Principles and Guidelines", 33rd Proc., pp. 133-142; N. Jasentuliyana, "Space Activities and International Environmental Protection: Perspectives on the United Nations Role", 33rd Proc., pp. 152-157; C.C. Okolie, "Legal Requirements for the Protection of Outer Space and the Global Environment", 33rd Proc., pp. 158-164; H.L. van Traa-Engelman, "Protection of the Global Environment Against Hazards Connected with Space Activities", 33rd Proc., pp. 173-176; E.G. Zhukova, "Environmental Protection of Outer Space: The Principle of International Cooperation", 33rd Proc., pp. 186-189; R.L. Bridge and M.L. Smith, "Space Debris: A Role for Lawyers?", 33rd Proc., pp. 266-269; L. Perek, "Technical Aspects of the Control of Space Debris", 33rd Proc., 400-407; J.P. Loftus, Jr. and A.E. Potter, "United States Studies in Orbital Debris Prevention and Mitigation", 33rd Proc., pp. 408-416; D. Felske, "The Space Debris Issue Problems and

Recommendations", 33rd Proc., pp. 417-420; **S.E. Doyle**, "Regulating Space Debris: What Can Be Done About It?", 33rd Proc., pp.421-423; **K.-H. Böckstiegel**, "Procedures to Clarify the Law Regarding Environmental Aspects of Activities in Outer Space", 32nd Proc., pp.65-70; **I.H.Ph. Diederiks-Vershoor**, "Increasing Problems of Space Debris and Their Legal Solutions", 32nd Proc., pp.77-80; **S. Gorove**, "Space Debris in International Legal Perspective", 32nd Proc., pp. 97-99; **E. Konstantinov**, "Outer Space Environment and Its Legal Protection", 32nd Proc., pp. 100-106; **B.C.M. Reijnen**, "Pollution of Outer Space and International Law", 32nd Proc., pp. 130-137; **G.C. Sgroso**, "Protection of Outer Space Environment: The Present International Rules and Suggestions for New Legal Measures and Instruments", 32nd Proc., pp. 146-151; **R.F. Stamps**, "Orbital Debris: An International Agreement is Needed", 32nd Proc., pp. 152-162; **K. Tatsuzawa**, "Protection of Space Environment: The Problem of Space Wreckage", 32nd Proc., pp. 173-178; **S.M. Williams**, "Environmental Risks Arising from Outer Space Activities: Some Legal Issues", 32nd Proc., pp. 179-183.

2/ One book deserves to be specifically mentioned in this context: **H.A. Baker**, "Space Debris: Legal and Policy Implications", Utrecht Studies in Air and Space Law, Martinus Nijhoff Publishers, 1989.

3/ UN General Assembly resolution 1472 (XIV)A, paragraph 1(b), of 12 December 1959.

4/ 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, 18 U.S.T. 2410, T.I.A.S. 6347, 610 U.N.T.S. 205 (entered into force: 10 October 1967); Agreement on the Rescue of Astronauts, the Return of Astronauts and the

Return of Objects Launched into Outer Space, of 22 April 1968, 19 U.S.T. 2389, T.I.A.S. 6599, 672 U.N.T.S. 119 (entered into force: 3 December 1968); Convention on International Liability for Damage Caused by Space Objects, of 29 March 1972, 24 U.S.T. 2389, T.I.A.S. 7762, 961 U.N.T.S. 187 (entered into force on 1 September 1972); Convention on Registration of Objects Launched into Outer Space, of 14 January 1975, 28 U.S.T. 695, T.I.A.S. 8480, 1023 U.N.T.S. 15 (entered into force on 15 September 1976); Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, of 18 December 1979, UN General Assembly resolution 34/68 of 5 December 1979, annex, 18 I.L.M. 1434 (entered into force on 11 July 1984); UN General Assembly resolutions: 1962(XVII) "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space" of 13 December 1963, 37/92 "Principles Governing the Use by States of Artificial Earth Satellites for Direct Television Broadcasting" of 10 December 1982, 41/65 "Principles Relating to Remote Sensing of the Earth from Outer Space" of 3 December 1986, 47/68 "Principles Relevant to the Use of Nuclear Power Sources in Outer Space" of 14 December 1992.

5/ UN General Assembly resolution 47/68 of 14 December 1992.

6/ See Report of the Committee on the Peaceful Uses of Outer Space on the work of its thirty-sixth session (UN doc. A/48/20 of 16 August 1993), paragraph 87. The Committee agreed that, under this item, the Scientific and Technical Subcommittee should consider "scientific research relating to space debris, including relevant studies, mathematical modelling and other analytical work on the characterization of the space debris environment".

7/ See Report of the Scientific and Technical Subcommittee on the work of its thirty-first session (UN doc. A/AC.105/571 of 10 March 1994), paragraph 6; see also M.W. Sanidas, "The 1994 Session of the Scientific and Technical Subcommittee of UNCOPUOS Takes Place in a Constructive Atmosphere - Space Debris Issue for the First Time on its Agenda", Journal of Space Law, Volume 22, Nos. 1 & 2, 1994, pp. 115-120.

8/ UN doc. A/AC.105/565 of 16 December 1993 and Corr.1, and Add.1 of 21 February 1994 and Add.2 of 23 February 1994.

9/ UN doc. A/AC.105/C.1/L.192 of 21 February 1994.

10/ UN docs. A/AC.105/C.1/L.193 and L.194 both of 21 February 1994.

11/ UN doc. A/AC.105/570 of 25 February 1994.

12/ As indicated in paragraph 15 of the Report of the Scientific and Technical Subcommittee on the work of its thirty-first session (UN doc. A/AC.105/571 of 10 March 1994), "special presentations on the complex issue of space debris and the solutions currently being adopted at the national level" were made by Mr. Walter Flury, ESA, Mr. K. Sridharamurthi, India, Mr. R. Crowther, DRA, United Kingdom, Dr. D. Rex, Germany, Mr. J. Loftus, Jr., Assistant Director, Johnson Space Center, NASA, and Mr. H. Laporte-Weywada, France.

13/ See UN doc. A/AC.105/571 of 10 March 1994, paragraphs 63-74.

14/ See Report of the Committee on the Peaceful Uses of Outer Space on the work of its thirty-seventh session (UN doc. A/49/20 of 12 August 1994), paragraphs 70-82 and 165; see also M.W. Sanidas and J.S. Thaker, "United Nations Committee on the Peaceful Uses of Outer Space Holds Annual Meeting in Vienna, Austria", Journal of Space

Law, Volume 22, Nos. 1 & 2, 1994, pp. 35-141.

15/ See Report of the Legal Subcommittee on the work of its thirty-third session (UN doc. A/AC.105/573 of 14 April 1994); see also J.S. Thaker, "1994 Session of U.N. Legal Subcommittee on Space Reasonably Successful", Journal of Space Law, Volume 22, Nos. 1 & 2, 1994, pp. 120-126.

16/ For a review of existing international space law relating to the environmental protection see S. Gorove, "International Space Law and the Protection of the Human Environment", in his "Developments in Space Law. Issues and Policies", Utrecht Studies in Air and Space Law, Martinus Nijhoff Publishers, 1991, pages 127-146; N. Jasentuliyana, "Regulation of Space Salvage Operations: Possibilities for the Future", Journal of Space Law, Volume 22, Nos. 1 & 2, 1994, pp. 5-21.

17/ See Report of the Scientific and Technical Subcommittee on the work of its sixteenth session (UN doc. A/AC.105/238 of 26 February 1979), paragraphs 5, 62-64 and Annex II.

18/ For explanation of this situation see A.D. Terekhov, "Review and Revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space", 36th Proc., pp. 336-348.

19/ See Report of the Legal Subcommittee on the work of its nineteenth session (UN doc. A/AC.105/271 of 10 April 1980 and Corr.1 of 15 May 1980), paragraphs 5 and 43-52.

20/ See Report of the Legal Subcommittee on the work of its twentieth session (UN doc. A/AC.105/288 of 20 April 1981 and Add. 1 of 2 February 1982), paragraphs 7, 42-47 and Annex III.

21/ See Report of the Legal Subcommittee on the work of its

twenty-fifth session (UN doc.
A/AC.105/370 of 5 May 1986 and Corr. 1
of 30 May 1986), paragraphs 6, 30-36
and Annex II.