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BOOK REVIEW

International Legal Problems in the Peaceful Use and Exploration of Outer Space

REVIEWED BY W. PAUL GORMLEY*

ANDEM, M., INTERNATIONAL LEGAL PROBLEMS IN THE PEACEFUL USE AND EXPLORATION OF OUTER SPACE, University of Lapland, Publications in Law, Series B20, Rovaniemi, Finland (1992); 511 pp.

Advances in space science and technology have led to the evolution of a new rubric of international law that impacts upon public, private, and comparative law. In order to deal with the growing demands imposed by humankind on this embryo branch of jurisprudence, Professor Maurice Andem has selected the vital topics of international and regional cooperation in the use and exploration of outer space for peaceful purposes.¹

Within the time frame in which the study was composed, the ever present threat of conflict in space continued to dominate legal and political efforts to assure global security. From this vantage point, the author examines the uses of space in various fields, including space communications, meteorology, and remote sensing.² Andem also raises subsidiary issues, such as the significance of resolutions by the United Nations General Assembly. Indeed, the significance of resolutions from the Assembly

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1. MAURICE N. ANDEM, INTERNATIONAL LEGAL PROBLEMS IN THE PEACEFUL EXPLORATION OF OUTER SPACE 7-8 (1992) (hereinafter cited as OUTER SPACE.)

2. *Id.* at 8. As Judge Manfred Lachs observes in the Preface, "This study is one of the most detailed analysis of progress made in developing rules of conduct for States and individuals to, in and from outer space. Reading it one becomes aware how instruments circling round the globe had first been a romantic experience and have finally become an important chapter of man's activities." *Id.* at v.

is one of the recurrent themes of the book. In this regard, Dr. Andem has unyielding faith in the potential of the United Nations and its efforts to promote world peace, the new international economic order, human rights, environmental protection (by means of space satellites and space stations), along with this newer rubric - the law of outer space.³

The legal nature of this contemporary branch of law, and its evolution is examined in Chapter Two. Beginning with a series of resolutions from the United Nations General Assembly,⁴ eventually leading to the 1967 Space Treaty,⁵ the world community embarked on a period of cooperation (even though the two superpowers dealt with each other at "arms length") that had the potential of strengthening experiments directed toward world peace. For instance, the Committee on the Peaceful Uses of Outer Space (COPUOS) and its sub-committees adopted the effective consensus procedure for voting.⁶

The author acknowledges states are the primary subjects of space law,⁷ but argues that international organizations should be recognized as subsidiary subjects, because of the missions they must fulfill. In the field of space law, the sovereign state remains supreme, and the changes perfected in public international law⁸ have yet to be transferred or incorporated into the law of outer space. Though rejecting the view of individuals and groups as subjects of international law, the author softens his view in the concluding chapter when he speaks of mankind and humanity.⁹ Indeed, Dr. Andem notes the role to be assumed by individuals, private enterprises and the human race when they utilize space for peaceful purposes.

3. Maurice N. Andem, *International Law as an Evolutionary and Dynamic Legal System - With Special Reference to the New International Economic Order*, 2 FINNISH Y. B. INT'L L. 395 (1992); and Maurice N. Andem, *The 1985 NIGA Convention and the Promotion and Protection of Foreign Investment*, 3-4/1987 KANSAINOIKEUS IUS GENTIUM 237 (1987).

4. From 1958 through 1966 the United Nations General Assembly adopted a series of resolutions that are still binding on U.N. members. See G.A. Res. 1721 (XVI), G.A. Res. 1802 (XVII), and G.A. Res. 1962 (XVIII), discussed at pp. 16-20.

5. Treaty on Legal 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.

6. OUTER SPACE, *supra* note 1, at 27-29.

7. I. H. Ph. Diederiks-Verschoor and W. Paul Gormley, *The Future Legal Status of Nongovernmental Entities In Outer Space: Private Individuals and Companies as Subjects of International Law*, 5 J. SPACE L. 125 (1977). MYRES S. McDUGAL, HAROLD D. LASSWELL, AND IVAN A. VLASIC, *LAW AND PUBLIC ORDER IN SPACE* (1963).

8. W. PAUL GORMLEY, *THE PROCEDURAL STATUS OF THE INDIVIDUAL BEFORE INTERNATIONAL AND SUPRANATIONAL TRIBUNALS* 7-126, 127-184 (1966).

9. The imperative of his position must not be minimized, for as he concludes, "It is necessary to emphasize that their present and future participation in outer space activities either individually or jointly with states and international organizations, will not in any way grant them the status of subjects of international law of outer space. They, as a matter of fact, shall continue to be subjects of the applicable domestic law of states," OUTER SPACE, *supra* note 1, at 39.

In support of this position, Chapter Three examines the future impact of emerging international law, state practice, the legal force exerted by resolutions from international institutions, and judicial decisions. Special attention is devoted to the potential role of the International Court of Justice¹⁰ to resolve outer space and environmental disputes.

The substantive portion of the book begins with Chapter Four, where Dr. Andem discusses significant areas of agreement between sovereign states on the differences between air and outer space. While outer space is governed by the 1967 Space Treaty,¹¹ air space above a state's territory is regulated by the Chicago Convention on Civil Aviation of 1944.¹² Here then, is an area in which states have cooperated for the purpose of facilitating communication and transportation. However, a major impasse remains unresolved, i.e. the delimitation between air and outer space. Despite cooperation between the members of COPUOS, the boundary remains unsettled. The author proposes 80 kilometers as the upper limit of air space in his final chapter. This limit needs to be set, since some supersonic aircraft can fly into outer space, whereas space vehicles and satellites must necessarily pass through air space. Moreover, multi-purpose vehicles are being developed by the United States and Russia.

In order to deal with this unresolved subject, the opening portions of the chapter present a historical review of the main theories governing air law. Next, Andem analyzes the evolution of the United Nations' concept of freedom of outer space. Necessarily, the major issues to arise center on the exploration of outer space. Proposals for joint undertakings between the United States and Russia, along with other industrialized states, are currently being considered. Dr. Andem argues that comprehensive solutions are sought in order to create a zone of peace in outer space.

From this premise, Chapter Five delves into the above mentioned issues, particularly by discussing the Bogota Declaration¹³ in relation to the geostationary orbit. A valuable survey of the viewpoints offered by states, international organizations and scholars are reexamined in order to determine the limits of outer space and its future potential. Once again Dr. Andem returns to one of his categorical imperatives when he argues that the "exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of mankind. . . ."¹⁴ Underlying this theme is the norm of non-appropriation, as embodied in the Space Treaty.

10. *Id.* at 62-64.

11. See Treaty, *supra* note 5.

12. Convention on International Civil Aviation, Dec. 7, 1944, 61 Stat. 1180, T.I.A.S. No. 1591, 15 U.N.T.S. 295. See I.H. PH. DIEDERIKS-VERSCHOOR, *AIR LAW* (3ed. 1988).

13. ITU, Broadcasting Satellite Conference, Doc. No. 81-E, Annex 4 (Jan. 17, 1977). See also, CARL Q. CHRISTOL, *THE MODERN INTERNATIONAL LAW OF SPACE* 466-69, 514-31 (1982); *OUTER SPACE*, *supra* note 1, at 159 ff.

14. *OUTER SPACE*, *supra* note 1, at 177.

Chapter Six deals with the demilitarization of outer space, the moon and other celestial bodies. In support of his premise that the common interests of mankind will hopefully guide the conquest of the universe, Dr. Andem presents a detailed analysis of germane United Nations treaty articles and views of jurisconsults. The immediate goal is broader participation of states in applications of space sciences such as remote sensing of earth resources, protection of the environment, meteorology, space medicine, and joint projects (i.e. the construction of solar transportation systems and space stations).

With Chapter Seven, the focus shifts toward the primary application of space technology. Specifically, the final three substantive chapters (seven through nine) deal with earth based satellites, the use of communication satellites and technology in space, and the resulting corpus of law. Beyond question, the employment of communication satellites continues to be one of the most important aspects of this newer division of communications law, which has evolved from the regulation of air waves. Space communication is a field within a larger entity (i.e. space law), however, that acts concurrently with other categories of international law. For example, the employment of artificial earth satellites has necessitated a network of agreements, the creation of major international satellite systems (INTELSAT, INTERSPUTNIK and IMARSAT), and proposals seeking an umbrella international agency within the structure of the United Nations. Incorporated within the scope of these umbrella institutions, national and regional satellite systems have been perfected for the benefit of maritime and aeronautical sensing. In excess of one hundred and twenty countries have cooperated in these regional and world-wide ventures. The success of the Indian satellite instructional television experiment, based on an agreement between the United States and India is one example. Additional examples from Africa and the Andean sub-region illustrate the extensive scope of national and regional satellite undertakings.

Numerous legal questions arise from direct television and radio broadcasting, owing to ITU regulations imposing some limitations on states and private parties. Steps have been taken to regulate broadcasts by the United Nations General Assembly under the provisions of Resolution 37/92 of 10 December 1982, which carries the text of the *Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting*.¹⁵ These principles are in fact guidelines that may in the future be implemented by the ITU. Professor Andem concludes that these IDTBS principles will contribute to the promotion and strengthening of mutual understanding by facilitating the free flow of information through the exchange of scientific and educational ventures.

The underlying theme of international cooperation is carried forward into Chapter Eight, Satellite Meteorology, an area of particular impor-

15. *Id.* at 280 n.93, citing U.N. Doc. A/RES/37/92 (4 Feb. 1983).

tance especially to the developing world. States have cooperated and refrained from imposing defenses of sovereignty in the field of weather forecasting, as evidenced from the high level of cooperation between the United States and the USSR in the early days of satellite monitoring. With the perfection of satellite technology, it became possible to predict impending atmospheric changes. Hence, advanced warning made it possible for regions, states and individuals to take preventive measures. As a result, damage from severe storms and hurricanes could be reduced. Advanced warning are especially helpful to developing countries, which possess limited resources to deal with the aftermaths of natural catastrophes.

Numerous programs of WHO are examined (World Weather Watch (WWWP) and the Tropical Cyclone Programme (TCP), along with related efforts by other U.N. and multinational organs (e.g. UNESCO, ICAO, ITU and ESA). These numerous organizations have perfected an effective system for the utilization of space technology. The primary examples cited in the book involve NOAA of the United States, METEOR of the Russian Republic, INSTAT of India and GMS of Japan. Other national satellites, along with METEOSAT (of EUMETSAT) form portions of this global meteorological structure. Dr. Andem proposes the existing meteorological satellite system be improved, rather than attempting to create additional regional organs.

The message emerging from this chapter (and similarly from the three chapters dealing with space satellites) is that this area has achieved the highest level of multinational cooperation and coordination. Valuable political and legal precedent has been created that can be employed in the future when bolder attempts are made to establish a functional order for both inner and outer space. Here then is guidance not only for states, but likewise for COPUOS.

Although sensing by meteorological satellites is one of the oldest and most successful applications of space science, one of the newer fields - and presently the most controversial - is the sensing of earth resources. Interestingly, considerable overlapping and concurrent jurisdiction exists between meteorological and resource sensing. The author observes these systems are complementary. In fact, he concludes that at some point other systems will overlap with remote sensing.

Ever present throughout Dr. Andem's discussion is the partially resolved, though potentially dangerous, clash between state sovereignty and the unrestricted use of space. Non space powers, especially developing countries, strongly oppose the remote sensing of their territories (i.e. land masses and territorial seas) because the acquisition of such data places the sensed state at a distinct disadvantage. A defense of sovereignty is imposed without success since the norm of freedom of outer space predominates. Against this background, Dr. Andem supports the free dissemination of sensed data and refined information. However, he seeks solutions that will protect the poorer and less industrialized states by means of cooperation within a United Nations framework that incorporates the participation of specialized agencies. That is, the concept of the

free dissemination of data must be applied in such a fashion as to protect the privacy and confidentiality of sensed states and regions.

Following a review of earlier conventions,¹⁶ Dr. Andem bases his position to a considerable degree on the *Principles Relating to Remote Sensing of the Earth From Space*,¹⁷ which are the result of fifteen years of sustained study and negotiation by COPUOS. Dr. Andem implies these fifteen principles can serve as the basis for future action, as for example in the area of peaceful settlement of disputes.¹⁸

The author's detailed analysis serves as the groundwork for his final conclusions. As was typical of the preceding chapters, he has the ability to select those international and regional instruments that are contributing to the evolution of a complete corpus of international space law. Consistently, current (and historical) accomplishments are employed as stepping-stones to ultimate objectives, the main one being the perfection of a new "specialized international agency similar to the International Atomic Energy Agency (IAEA) of the World Meteorological Organization (WMO) to coordinate and monitor all remote sensing activities."¹⁹ This new specialized agency would be responsible for dealing with, and possibly disseminating, data and information received from remote sensing, and also strive toward the eventual unification of existing remote sensing programs and projects.

Recommendations are offered in an effort to firmly base this new corpus of international space law in reality. One major step will be a more aggressive and far-reaching approach by COPUOS and its two sub-committees (the "Scientific and Technical" and "Legal") in the search for new solutions. Their prior record, as demonstrated in the book, is outstanding. Not only has COPUOS achieved considerable success during the prior decade in developing space science and law, it has also served as a model for organizations dealing with other rubrics of law.

Concerning the future status of the geostationary orbit, including radio frequencies, Dr. Andem proposes that satellite operators comply with the provisions of the ITU Convention and the Final Acts of the World Administrative Conferences. Within this context he recommends that new systems be established within the orbit on a regional and global basis, with the participation of all states.

Recommendations such as the verification of disarmament measures are set forth, and as could have been anticipated from the underlying theme of the implementation of environmental protection throughout the

16. Convention on the Transfer and Use of Data of Remote Sensing of the Earth From Outer Space, U.N. Doc. A/33/162 (June 21, 1978); discussed in MORRIS D. FORKOSCH, *OUTER SPACE AND LEGAL LIABILITY* 184-85 (1982); W. Paul Gormley, *Outer Space and Legal Liability*, 10 *BROOKLYN J. INT'L L.* 581 (1984) (book review).

17. For a discussion of the draft articles, see *OUTER SPACE*, *supra* note 1, at 387-401 (and the sources cited).

18. See, e.g., *id.* at 400-01.

19. *Id.* at 402-03.

book, recommendations are advanced that are designed to protect the earth's fragile ecology.

Dr. Andem's final thoughts are directed toward future regimes, as mankind seeks to utilize the resources of the universe. Central to his proposals is the increasing position of the United Nations, "as the center of international cooperation and for codification and progressive development of contemporary international law."²⁰ As a counterpart, COPUOS will periodically review the effectiveness of existing outer space conventions in attempting to achieve the final regime for peaceful purposes that have been advanced throughout this excellent study.²¹

20. *Id.* at 426.

21. Manfred Lachs, Preface, *id.* at x (footnote omitted). Lachs concludes, "This impact of scientific and technological progress has also led to some radical changes in the classical concepts and theories in contemporary international law and international relations."

