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REFLECTIONS ON SPACE LAW AFTER THIRTY-TWO YEARS OF SPACE EXPLORATION AND EMERGING TRENDS FOR THE 21ST CENTURY

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I Introduction

THIS PAPER briefly reflects upon the status of space law in today's world. It describes some of the major contemporary legal issues. It also attempts to focus the trends in the development of space law and policy in the world order of the 21st century.

To the historian of international law, space law presents a vast new frontier which has made impact almost on all aspects of law and world order. From the sovereignty-dominated world, we have moved into the earth-space arena of interdependence and international co-operation. Space exploration indeed has brought about a total revolution in problems of war and peace. Never before has the world looked so much integrated and so small. Indeed, the 21st century seems likely to be an age when space exploration will further unite mankind into a common destiny harvesting many scientific and technological benefits for individuals and nations.

To the jurists falls the responsibility of creating a legal order which is creative and which responds to the demands of progress of world society. Indeed in the modern international law of space, high seas, air and environments, the creative scientists and jurists have attempted to provide a map of goals for space exploration, and through reason and analysis succeeded in laying a foundation of world law for the space frontier.[1]

Space law is a product of leading minds and jurists of various countries. The building up of practices and expectations in space activities, their tolerance by states and their final acceptance through the United Nations resolutions made the beginnings of space law. Ever since the space exploration, it has been the trend to set the guidelines of law in new fields of technology and human endeavours. Customary law of space has developed in

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1. See for e.g., *Scientists Testimony of Space Goals, US*. Senate Hearings, 88 Congress, 1st session, Committee on Astronautics & Science Space, 10 June & 11 June, 1963. The scientists included some Noble-Laureates.

response to major debates in legal and academic institutions in the world.[2] In a peaceful world order, says, Quincy Wright, customary law with proper interpretation can be developed with the observance, recognition or acquiescence in such norms by all states. International communication through conferences and declarations helps the process of customary law.[3]

Myres McDougal also opines that "[c]ustomary law--the most inarticulate, the least deliberate of prescriptive expressions--does build on the expectations created by people's co-operative behavior and the words they use, over a period of time, about some particular problem".[4] In the 1956 proceedings of American Society of International Law, McDougal did successfully convince jurists that major goals of space law were the pursuit of common interests of world community in space exploration.

The author has stressed the imaginative role of jurists in shaping the present law of space. It is a happy phase in the history of international law that timely law-making takes place to keep pace with the progress of modern science and technology. Law would otherwise be left behind. During past thirty-two years, elements of space law have been debated, formalised and kept up dated to meet demands of world society.

II Space law, its distinctive features and the legal principles contained in the space treaty of 1967

One may ask as to what is the status and function of space law in today's world? What are the distinctive features and legal principles of space law that guide the contemporary world order? And what are the major legal principles enshrined in the space treaty of 1967?

The world today has a well-set body of space law to guide space exploration. In the period 1957 to 1967, space law was evolved through resolutions of the United Nations after jurists and legal and scientific institutions had analysed various issues facing mankind. The international community took the first major step to formalise space law in a treaty in 1967. This space treaty is today a world charger on space law. It is comparable to the Chicago Convention of 1944 on civil aviation, and the UN Charter of 1945 for world order.

Let us briefly see what legal principles the treaty contains. A perusal of this document reveals that some of its legal principles are new and have had a profound effect on the developments of international law. The norms it contains are applied in many other areas of international and even national life.[5] Indeed as Justice R.S. Pathak of International Court of Justice has said

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2. See for *e.g.*, Quincy Wright, "Custom as a Basis for International Law in the post-War World", 7 *Ind. J. Int'l. L.* 1-14 (1967).

3. *Id.* at 8.

4. See Myres S. McDougal, "Proceedings of the American Society of International Law, New York, in 64 *Am. J. Int'l.* L.57 (1970).

5 For an analysis of legal principles of space treaty, see S Bhatt, *Legal Controls of Outer Space Law, Freedom and Responsibility* 372 (1973).

recently, for sheer legal acumen a new comprehensive system of law may be emerging with a new relationship developing between international law and municipal law.[6] With reference to environmental law (and we may add here space law), he says:

> The concept of planetary life has taken a fresh meaning and illustration and this is the pressing need for more intimate correlation between national and international systems in several areas, one of them being environmental law.[7]

III Major provisions of space treaty

The space treaty of 1967, also called the principles treaty, represents a world charter for exploration of outer space. It contains the basic leading ideas and legal principles to guide mankind in space activities. In general, it promotes and establishes freedom, peace, law, co-operation and scientific advancement. A look at the two decades of its operation reminds us that the treaty has worked well and served mankind in a period of anxiety when space law and order was being shaped in the world society for the first time.

Space freedoms are given under article 1 of the treaty. It provides for freedoms of exploration, scientific investigation, and the like. Indeed, the freedom spirit guides space law much more that what Grotius hoped for in relation to high seas. This vast frontier, says the first article of the space treaty, is the province of all mankind, thereby removing any misgiving that space belongs to any one state. Similarly, the second article of the treaty provides that outer space cannot be appropriated by any means. Thus, it is *res communis* and belongs to all, Article 3 provides that international law and the Charter of the UN applies to outer space. Of course there are some jurists who feel that life may be discovered in other parts of cosmos when new norms may be needed for the law of outer space because the Charter of the UN applies to earthly nation-states. In a recent seminar held in the Division of International Legal Studies of School of International Studies, Jawaharlal Nehru University, such a view was discussed. R.P. Anand and R Khan expressed the view that space law should be responsive to extra-terrestrial nature of law in future should other like forms be discovered in outer space. A pioneer space lawyer and a rocket scientist, A.G. Haley of United States had put forth the thesis of *meta law* in such cases which means we on earth should do to other life in other parts of cosmos as they would like us to be done to them -- a concept which we may apply in modern international law of nations, more so in the field of environmental law where other species are involved in the biosphere. Therefore space law has given a new direction to international law, traditionally bound with the sovereign and

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6. See Justice R S Pathak of ICJ, "New Concepts of Law Emerging", Address to the Seminar by International Law Association, *The Times of India*, 21 March 1988 (New Delhi)

7 *Ibid*

exclusive interests of states.

Article 4 of the space treaty stipulates that no nuclear weapons are permitted to be orbitted around the earth or put in outer space. This is a major arms control measure in the treaty. In the absence of it, we were exposed to utter confusion of nuclear weapons circling in outer space wherefrom they could even fly out of control by accident like the Skylab incident of July 1979 when no one considered himself safe upon this earth as the object was falling out of control and finally came down of its own in a no man's land in Australia.

There are other essential legal principles in the space treaty denoting state responsibility, jurisdiction over space objects, liability for damages assistance to astronauts in the case of distress, privilege to observe space exploits of other countries, and information to be given to the United Nations. However, a major provision exists in article 9 relating to international consultation in the event when a state considers that its activities are likely to harm another state or a group of states. Article 9 further ensures that states shall prevent harmful effects to space environments and will not introduce extra-terrestrial matter causing contamination of space environments.

On the subject of environment protection the space treaty needs to be strengthened in the light of present world-wide concern for global environment. It may be recalled that space treaty was signed in 1967 and the Stockholm Declaration on Environment was made in 1972. The treaty on outer space does not prohibit increase of carbon dioxide level which results in the warming of the biosphere. It also does not protect the ozone layer situated between 15 to 40 kms. above the earth's surface, from destruction.

Therefore, there have been new developments in international law such as the Vienna Convention of 1985 and the Montreal Protocol of 1987 to ensure that the ozone layer surrounding the earth is safeguarded. Ozone stops the ultra-violet rays of the sun which cause cancer.

International law has assumed a vital role in the stability of the global ecological balance.[8] Modern international law calls for modelling on biological premises to ensure the ecological equilibrium. A leading scientist from India, N. Seshagiri, has said that the "biological evolution steers in such a direction as to find its equilibrium with the environment in its entirety.' He further recommends the need to detect the underlying unity in the physical science, chemical science and the biological science, for which systems approach is needed.[10]

In the structuring of space law, environmental law, and all forms of human laws, likewise therefore a systems approach is suggested to be able t

8 See generally S Bhatt, *Environment Protection and International Law* 122 (1985), B D Na Chaudhuri and S Bhatt, *The Global Environment Movement* A New Hope For Mankind (1987

9 See N Seshagiri, *Fountain Heads of Science A Systems View*, Publication Division, Minist of Information and Broadcasting, New Delhi, 1983

10 *Id* at 295

grasp the unity of laws of nature. Indeed looking from a historical perspective, the classical jurists of 15th and 16th centuries were motivated by considerations of laws of nature. It is therefore time to return to the laws of nature which promote harmony with the environment and help maintain the ecological balance. Arnold Toynbee, among others, has warned not to ignore the laws of nature to prevent the decline of civilization. In the modern international law of outer space, maintaining ecological balance has therefore assumed the status of a grand-norm.

The space treaty of 1967 falls short of providing a framework for protecting the global environments. It has not moreover provided for global cosmic agency like the ICAO in the case of aviation, to safeguard the interests of world community. It is hoped that in the time to come, a space agency will take shape soon.

IV Current global issues in space law and the Bangalore International Symposium on Space Law 1988

The space treaty of 1967 has laid down the public order of space. In addition, there are a few more conventions and treaties on space. The agreement on the rescue of astronauts was signed on 22 April, 1968. The convention on international liability for damage caused by space objects was signed on 29 March, 1972. K. Krishna Rao, the then legal advisor in the Ministry of External Affairs, made a notable contribution in the making of the space liability convention. A session of the committee members of the UN was held in the Indian Society of International Law in New Delhi. The convention on registration of objects launched into outer space was signed on 14 January, 1975. Finally, the moon treaty came into being on 5 December, 1979.[11]

V New areas of regulations in space law

In recent years, however, more areas of general interest have emerged in the field of space law. Some of these include the direct television broadcasting (DTB), the remote sensing of earth's resources, an international agency for space, and the regulation of space transport systems.

Some progress has been made in DTB. It involves interests of states on the nature of programmes broadcast. In the areas of remote sensing also, the issues at stake are the sharing of information made available by remote sensing agencies. Not much thought has however been given to the space transport operations of the future. This subject will involve to a great extent an integration of the regimes of air and outer space.

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11 For a reference to all above space conventions and treaties, see Carl Q Christol, *The Modern International Law of Outer Space* 851-80 (1982)

VI The Bangalore Colloquium on Space Law of ISRO and International Astronautical Federation (IAF)

The International Institute of Space Law of the International Astronautical Federation along with the Indian Space Research Organization (ISRO) held an important colloquium on the law of outer space in Bangalore during 8-15 October, 1988. This colloquium stands as a milestone in the annals of space law in India. Similar colloquia have been held in many other parts of the world reflecting from time to time on major issues of space law.[12]

The Bangalore colloquium had four sessions. Session 1 deals with the legal aspects of maintaining outer space for peaceful purposes. Session 2 relates to space law and problems faced by the developing countries. The third session was devoted to the bilateral and regional space agreements. The fourth session discussed general issues of space law of contemporary importance.

Many noted and eminent jurists[12a] participated in the colloquium making the Bangalore deliberation a remarkable contribution to space legal thought.

Some of the important papers in the first session were concerning the following subjects: the protection of life and nature on earth, international control as a measure of trust for averting space militarisation, environmental law aspects of maintaining outer space for peaceful purposes. The second session discussed space law problems of the developing countries with special reference to the geo-stationary orbit. It may be recalled that nearly seven equatorial states in the Bagota Declaration of 1976 have laid preferential claim to the geo-stationary orbit above the equatorial region. The third session provided a resume of bilateral and regional space agreements and developments in these fields. The fourth session analysed the general issues of space law such as the problems concerning space transportation, changes desired in the registration convention for space objects, remote sensing and the role of United Nations, the aerospace plane and new policy issues for space law.

VII Major trends in space law for the 21st century

Looking towards the law of space in the 21st century, one gets reminded of the law of air almost a hundred years ago in its infancy. Aircraft and gliders began to fly symbolically in the early part of the 20th century. Wright Brothers in the United States made their first historic flight in 1904. Today

12. The Bangalore Colloquium being the thirty-first of its kind is published in 1989 by the American Institute of Aeronautics and Astronautics, 370 L'Enfant Promenade, SW Washington D.C.

12a. The international jurists included H. Bittlinger, A.A. Cocca, C.Q. Christol, I.H. Ph Diederiks-Verschoor, S.E. Doyle, J.F. Galloway, S. Gorove, P.P.C. Haanappel, V. Kopal, G. Gal *etc*. The Indian scholars included U.R. Rao, Chairman ISRO, S.R. Chowdhury, M.V. Naidu, S. Bhatt and R.C. Hingorani and other distinguished scientists of ISRO. Justice M. Hidayatullah, the retired Chief Justice of India, inaugurated the colloquium.

we see how international law of air and aviation provides a profound and world-wide network of international relations uniting peoples and countries in a common bond.

Legal futurology of space frontier therefore has already trends of co-operation and promise for new hopes for the next century. Jurists can possibly estimate the future trends of law. In the space frontier, scholars and jurists have in the past made projections for the course that space law should take. Justice V.R. Krishna Iyer makes an important observation in favour of a futuristic view of law. He says:

> Law is life's lagging fellow traveller and so when man moves into space, carrying in his cardiac kit all his terrestrial hopes and hates. Law has to help as a humanist regulator, and 'police' his operations at home and 'abroad' so that happiness on earth, our habitat, may be augmented, not imperilled. Therefore jurisprudence, with sociological insight, must organise the norms, controls and correctives relating to human behaviour in Outer Space.[13]

Striking an important note on establishing a balance between law and science, Justice Iyer comments: "Space law springs from the compulsions of space science and *far-seeing jurists* are striving to keep pace and spin [of] the law of Outer Space."[14]

Therefore jurists need not wait for science writers and futurologists like Aldox Huxley, Arthur Koestler, or H.G. Wells to reflect on the shape of things to come. Many jurists in the United States such as Myres McDougal from Yale and Richrd Falk from Princeton have attempted and recommended a futuristic view of law, especially space law. It is a common practice among nations to plan for future. This future planning should now include the kind of laws that are likely to emerge or be developed. The University Grants Commission in India has recently decided to teach the subject of futurology in ten Indian universities.[15] This new discipline, it is reported, has to be interdisciplinary. This is a welcome measure in the field of education.

Taken into view the present framework of space law and the trends developing in this field, the 21st century space law appears full of promise and potential for all mankind. Space law of future shall have major emphasis on the following areas: international co-operation, environment protection, scientific investigation, sharing of world-wide information from space activities, and international communications. Besides, all planning processes of earth, including management of land-use, water and mineral resources, forest resources, population resources and educational programmes, will be

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13 Justice V R Krishna Iyer in the book review of *The Law of Outer Space*, by Manfred Lachs, formerly President, ICJ, Leiden, 1972 in 13 *Indian Journal of International Law* 653 (1973)

14 *Ibid* (Emphasis added)

15 See *The Times of India*, 17 August, 1989

conducted from outer space. The next century can be a century of enlightenment for all. The recent major changes in the East-West international relations towards peace-oriented goals provide further strength to the above observation.

VIII Conclusions

We have provided a few reflections on the developments of the law of outer space. We have discussed how a body of space law has been established in the earth space arena, and how it has propelled modern international relations towards peace and stability. Space law has proved creative and equal to the response of scientific exploration of space. Some more issues are being debated such as the direct television broadcast (DTB), or the remote sensing of earth's resources. Space law will develop further in these areas as well. The important conclusion is to look ahead for the great potential that space law has for the 21st century, providing for peace, progress and international co-operation. Space law has thus produced many changes in traditional international law and given a new look to the world society.