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S. Bhatt

H. W. Poulton

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# INTERNATIONAL REVIEW

## CURRENT DEVELOPMENTS IN OUTER SPACE: PERSPECTIVES ON LAW, FREEDOM AND RESPONSIBILITY AFTER THE LUNAR LANDINGS\*

BY S. BHATT†

### I. INTRODUCTION

Every age has its philosophy of law and, generally speaking, of social and power processes. The contemporary period in history is particularly marked with rapid changes brought about by science and technology. In particular, the space sciences seem to grow at fantastic pace necessitating constant review of policies pursued by states.

The lunar landings by the United States through the flights of Apollo spacecraft mark a great historical epoch. The true historical consequences of these landings, like the discovery of America by Columbus, cannot be measured as yet.<sup>1</sup> Nevertheless, in keeping with the needs of the times, the policies set forth in the first decade of space exploration toward the conquest of space and beyond, appear to be maturing; and as the second decade of exploration commences in the post-Apollo period, the space powers have set in motion a new pragmatic approach which seeks to emphasize co-operative enterprises, instead of blind competition.

The objective of this study is to briefly trace the new policy lines; to review what has been the role of space law in the international system<sup>2</sup> during the first decade, viewed from the effectiveness of certain international agreements like the Space Treaty of 1967; to deliberate on the nature and extent of the freedom-spirit which has been dominating the first decade of space exploration; and to seek a compromise between the freedoms and responsibilities of States relating to the avoidance of the use of

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\* The views expressed do not reflect the author's official position as an Aerodrome Officer, New Delhi Airport, India. The author is thankful to Professor Howard J. Taubenfeld, Director of the Institute of Aerospace Law, for his comments on some aspects of this paper; however, the author alone is responsible for the views expressed.

† M.Sc. (Hons.); M.A.; Ph.D. (Aerospace Law) from Indian School of International Studies; Graduate, Indian Air Force Academy; Lecturer, Aerospace Law in the Indian Academy of International Law and Diplomacy; formerly Research Scholar, Dept. of International Law, Indian School of International Studies. The author is currently a Fulbright Resident Scholar, Institute of Aerospace Law, School of Law, Dallas, Texas.

<sup>1</sup> The need for historical evaluation is brought out by Manfred Lachs. He says, "A greater and deeper insight is required into the processes of contemporary life. . . . Without an adequate knowledge of the past one cannot understand the happening of today. Without an adequate appreciation of the contemporary, as the last link of history accessible to men, previous links can hardly be evaluated in their proper light." See *The International Law of Outer Space*, 8-9 (1964). RE-CUEIL DES COURS 8-9 (1964).

<sup>2</sup> And "Outer Space is not a national experience, but an international, a global one." Cf. RICHARD N. GARDNER, "Outer Space: New Frontier for Co-operation", in *In Pursuit of World Order: U.S. Foreign Policy and International Organizations*, 210 (New York 1965).

sophisticated and dangerous missile weapons in outer space, including the sub-orbital space.

The basic purpose of evaluation of policies by scholars and jurists, it would seem, is "to outline a framework of inquiry for the study of the law and public order of space in their larger context and to suggest . . . clarifications, . . . of the common interests of all people in the prescription and application of general community policies with respect to some of the more important new problems."<sup>3</sup> By application of various intellectual tasks it is possible for the scholars "to change the institutions of mankind by changing the subjectivities and behaviors of men."<sup>4</sup> Professor Richard Falk further suggests that an impartial observation does elevate the scope of the usefulness of international law.<sup>5</sup> Sometimes a bold and consummate approach in law does help to foster an orderly growth of events. In special reference to the law of outer space activities, the wisdom contained in the forecast made by Dr. Jenks is worth of consideration especially since science and technology are making continuing spurts in all directions. Dr. Jenks said:

In these circumstances, it is not premature for international lawyers to give some preliminary consideration to the problems which will confront them as a matter of urgency if the current efforts of scientists and engineers specializing in astronautics and electronautics should suddenly achieve a dramatic success comparable in the range and speed of its repercussions to the explosion of the first atomic bomb.<sup>6</sup>

By clarifying policies, a scholar helps in the development of legal order. This scholarly work will gain further impetus as science and technology assume greater importance.<sup>7</sup>

Finally, the task of analyzing policy helps in closing the gap between the present and desired future goals.<sup>8</sup> And if it is further assumed that all law is policy, then legal scholars can help improve motivations of a space policy.<sup>9</sup> Indeed one of the greatest of thinkers of all times, Dr. Albert Einstein, while expressing his firm faith in law, said: "Our defense is not

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<sup>3</sup> See MYRES S. MCDUGAL, HAROLD D. LASSWELL & IVAN A. VLASIC, *Law and Public Order in Space* v (1963).

<sup>4</sup> *Id.* at 1102.

<sup>5</sup> Professor Falk remarks: "If the academic international lawyer succeeds in establishing for his legal analysis a reputation of impartiality, then the perception of the relationship between challenged national conduct and rules of international law can be elevated to a higher level of discourse." See Falk, *New Approaches to the Study of International Law*, 61 AM. J. INT'L L. 477, 478 (1967).

<sup>6</sup> C. WILFRED JENKS, *International Law and Activities in Space*, 5 INT'L & COMP. L. Q. 99, 101.

<sup>7</sup> The obligations of jurists and scholars in international law may be seen within a larger ambit of obligation towards mankind. Cf. "Modern science has become an active factor in the economic and political life of nations, creating new legal problems, both national and international. The answer to the question: 'What are the tasks and duties of jurists in respect to these developments?' should be sought primarily within the framework of their general obligations towards mankind. It seems to me that the most important of these duties is nowadays the preservation of universal peace and security. . . ." JACEK MACHOWSKI, *Selected Problems of National Sovereignty with Reference to the Law of Outer Space*, in *Current Developments in Air Space and Outer Space: Law, Science and Policy*, 1961 Proceedings, Am. Soc. Int'l L. 169.

<sup>8</sup> MCDUGAL, LASSWELL, & VLASIC, *supra* note 3, at 190.

<sup>9</sup> "If law is to become an effective adjunct of Space Policy, our overall space policy must be properly oriented," see Robert D. Crane, *Planning for Space Legal Policy*, AM. ROCKET SOC. SPACE FLIGHT REPORT TO THE NATION, New York Coliseum, Oct. 9-15 (1961).

in armament nor in science nor in going underground. Our defense is in law and order."<sup>10</sup>

## II. TRENDS IN NEW SPACE POLICY: THE POST-APOLLO PERIOD

The lunar landings mark the end of the era of prestigious competition and begin a new period more relaxed than the period of the first decade. This historic event calls for re-assessment of space policies. There have been numerous speculations on U.S. space policy after the lunar landings. These speculations ended with the announcement by President Nixon of the United States on September 20, 1969, of new space goals for the United States in the decades ahead. A scholarly discussion is necessitated, therefore, of the new trends in the space policy by making a comparative estimate of the past policies.

The highlights of the new space objectives set by the United States are the following: Unlike a crash program for the moon-landings, a phased timetable has been drawn for man's landing on Mars. There is no firm date for the Mars landing which avoids another space-race. The landing may be accomplished in the 1980s, or 1990, or even after the year 2000. Thus there is a commitment for a Mars landing, but not to the date of landing. Other significant goals relate to the establishment of an orbital station for six to twelve persons which can orbit in space for a period of one year or more; a space base made of space-station modules that may house 50 to 100 men; a re-usable space-ferry transportation system for carriage of passengers, fuel, etc. for earth or lunar orbits which would cut economic costs of lifting one pound of load from \$500 to \$50; a space tug for pulling space stations; development of high-reliability life support system for use for one to two years; development of lunar transportation systems, autolike rovers, or one-man flight-packs; un-manned "grand tours" of outer planets; a nuclear-powered spacecraft which may be developed by the 1970s; sending a mission to the asteroid belt of mini-planets that orbit the sun between the outer and inner planets with the means to capture one of these planets and haul it to the moon, the earth, or a comet for scientific study; the use of space capabilities for communications, weather forecasting, navigation, surveillance, mapping; and finally, the development of space capabilities useful for air and ocean traffic control, environmental monitoring and prediction, and earth resources surveys.<sup>11</sup>

Before embarking on an analysis of the new space policy, it may be beneficial to reflect on past policies. There is also the problem of testing whether all that is set forth in these policies is legal in the sense of promotion of a law and public order suited to a contemporary world arena. There is no denying the merits of the intellectual tasks of a policy con-

<sup>10</sup> Letter to President Franklin D. Roosevelt, Aug. 2, 1939, in WILLIAM A. HYMAN, *MAGNA CARTA OF SPACE* 55, (1966).

<sup>11</sup> See *The Christian Science Monitor*, Sept. 20, 1969, at A5. It was reported that the following experts acted as advisors to the President in formulating the new space policy: Thomas O. Paine, Chief Administrator of NASA; Dr. Robert C. Seamans, Jr., Air Force Secretary; Vice President Spiro T. Agnew; and Dr. Lee A. DuBridge, President's Science Adviser in the White House.

ceived in a model of goal values, though some suggest that in view of conflicting interests involved between various disciplines which seeking to benefit by space probes, there is no wisdom involved in identifying and pursuing specific policy objectives.<sup>12</sup> Nevertheless, it must be admitted that the policy-sciences (including policy-oriented jurisprudence) along with functionalism have largely made the system of legal regime that we witness today.<sup>13</sup>

In formulating explicit public order goals some authorities point out:

Just as there can be no neutral or autonomous theories of law, in the sense of rules devoid of policy content, so also there can be no indifferent theories about law, in the sense of knowledge or ignorance without policy consequences. In such a context, it is the opportunity and obligation of specialized intellectuals, maintained by community resources, not merely to relate law to some kind of policy, but rather, and further, to clarify and promote the policies best designed to serve a particular kind of public order they cherish.<sup>14</sup>

The factors affecting international legal order, although changed in some content in the second decade, have not completely moved away from considerations of power, security, and overall national interests.<sup>15</sup> The most reasonable estimates that one can make, as in the past, is in terms of inclusive and occasional exclusive interests.<sup>16</sup> There are other reasons for this obvious change.

In spite of many commendable achievements, the first era of space exploration was marked with competition, prestige, and sometimes, contest and propaganda. The first Soviet Sputnik flight of October 4, 1957 had caused an element of global surprise. It was no doubt a pleasant surprise, but it was a surprise, nevertheless. As was stated in the U.S. Senate, the Soviet Union reaped a great amount of prestige by these flights.<sup>17</sup> In response to this challenge President Kennedy declared the U.S. national policy thus:

First, I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him

<sup>12</sup> Freeman Dyson, *Human Consequences of the Exploration of Space*, 25 BULL. AT. SCI. 8, (1) No. 7, September 1969). The author, a scientist, believes that space efforts unite all men and priorities on goal values do not always create a homogeneous enthusiasm.

<sup>13</sup> See generally *supra* note 5, 488; cf. "History to date is examined in the problem-solving context . . . a policy-oriented approach that requires the tackling of all intellectual tasks pertinent to the clarification and implementation of the overriding goal." See McDougal, Lasswell, & Vlasic, *supra* note 3, 190.

<sup>14</sup> See Myres S. McDougal, Harold D. Lasswell, & W. Michael Reisman, *Theories About International Law, Prologue to a Configurative Jurisprudence*, 8 VA. J. INT'L L. 188, 206, (1968).

<sup>15</sup> Compare Joseph E. Johnson, President, Carnegie Endowment for International Peace, who comments on past policies: "Thus far, the limited experience we have leads to two hypotheses: that the powers with space capabilities view space primarily as another medium in which to pursue national interests and policies and in which to confront essentially familiar problems, and they are unlikely to deny themselves such national advantage as competition may appear to offer. None of the authors in this volume disagrees with these general hypotheses. . . ." SPACE AND SOCIETY, at xii, (Howard J. Taubenfeld, ed. 1964).

<sup>16</sup> As McDougal, Lasswell and Vlasic develop this theme in their entire treatise, they state that the claims should be viewed "by optimum accommodation of inclusive and exclusive interests within the common interests of the whole, and to deny indulgence to special interests." McDougal, Lasswell, and Vlasic, *supra* note 3, 190.

<sup>17</sup> See Statement of Under-Secretary Merchant made before the House Committee on Science and Astronautics, IMPORTANCE OF THE SPACE PROGRAM IN INTERNATIONAL RELATIONS, 42 DEP'T STATE BULL. 213 (1960).

safely to earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish . . . But in a very real sense it will not be one man going to the moon if we make this judgment affirmatively, it will be an entire nation. For all of us must work to put him there.<sup>18</sup>

The competition that followed, however, healthy, scientific, and worthy of the great achievements of mankind in outer space in which both the United States and the Soviet Union, along with the rest of mankind, rejoiced in full chorus.<sup>19</sup> The following remarks by President John Kennedy while presenting medals to Colonel Borman, Captain Lovell, and Lt. Colonel Anders—the crew of Apollo 8—are reminiscent of this spirit of adventurous competition:

We are quite naturally proud that they [the astronauts] are all Americans. But we rejoice that mere national pride is insufficient, that these men represented in the vastness of space all mankind—all of its races, all of its nationalities, all of its religions, all of its ideologies. For seven days the earth and all who inhabit it knew a measure of unity through these brave men.<sup>20</sup>

However, until major exploits were achieved by both Space Powers, the first decade marked a see-saw race in space achievements. Some of the experts testified to this space race. George V. Allen, Director of the United States Information Agency, stated in January, 1960, before the U.S. Congress:

. . . regardless of how Americans may feel about it, this country is in a space race as far as world opinion is concerned. It is a race we can't avoid, and that we might as well accept . . .<sup>21</sup>

Similarly, James R. Killian, Jr., Special Assistant for Science and Technology to President Eisenhower and President Kennedy, made his expert opinion to the effect that space exploration was dominated by prestige considerations.<sup>22</sup> Leading world scientists gave their consensus in favor of some sort of space race in which both scientific and political achievements were involved.<sup>23</sup> Leading jurists on the subject endorsed the opinion that ". . . even science itself is today a political (and military) weapon, and success in scientific endeavour enhances a nation's prestige position. . . .

<sup>18</sup> "Special Message to the Congress on Urgent National Needs," May 25, 1961. See *Public Papers of the Presidents of the United States*, John F. Kennedy, Jan. 20 to Dec. 31, 1961, 404.

<sup>19</sup> Cf. for example, the congratulatory telegram sent by President John F. Kennedy on April 12, 1961 to the Chairman of the Council of Ministers, USSR, Mr. N.S. Khrushchev on the first Soviet Sputnik flight carrying an astronaut on board: "The people of the United States share with the people of the Soviet Union their satisfaction for the safe flight of the astronaut in man's first venture into space. We congratulate you and the Soviet scientists and engineers who made this feat possible. It is my sincere desire that in the conquest for knowledge of outer space our nations can work together to obtain the greatest benefit to mankind." 44 DEPT. STATE BULL., 640 (1961).

<sup>20</sup> THE FLIGHT OF APOLLO 8: INTERNATIONAL COOPERATION IN SPACE, 59 DEPT. STATE BULL., 76 (1969).

<sup>21</sup> Cited by Lloyd V. Berkner, *SPACE RESEARCH—A PERMANENT PEACETIME ACTIVITY*, in *PEACETIME USES OF OUTER SPACE*, at 7 (Simon Ramo, ed. 1961).

<sup>22</sup> *SHAPING A PUBLIC POLICY FOR THE SPACE AGE, OUTER SPACE: PROSPECTS FOR MAN AND SOCIETY*, ed. Lincoln P. Bloomfield (1962), at 183. It may be recalled that James Killian is the author of the first authoritative report on the U.S. goals submitted to the U.S. President.

<sup>23</sup> See SCIENTISTS TESTIMONY OF SPACE GOALS, *Hearings, U.S. Senate*, Congress 88, 1st Sess., *Senate Committee on Astronautics and Space Sciences*, 10, 11, 1963.

Political results are the inevitable by-product of research—else governments would not be paying the bills.<sup>24</sup>

The Soviet space policy in the first decade was a mixture of scientific exploits and pursuit of prestige and power. The U.S. Senate Committee on Aeronautical and Space Sciences, in its report on Soviet space goals, brought out this analytical account of the importance of prestige in the space program:

Prestige, defined as a reputation for power, is an increment of political power, and perhaps nowhere is the close interrelationship between prestige and power more significant than in space exploration, particularly as conceived and carried out by the Soviet Union.<sup>25</sup>

Although for some time it was commonly recognized that in certain areas of space research the Soviet Union had enjoyed some lead, this lead began to wane with the U.S. Apollo flights. The climax of this prestigious space race came with the successful moon landing by Apollo 11 astronauts. This really ended the great chapter of the history of the first decade in space exploration.

Some other reasons also contributed to the unbridled competition in space. The space race began without a legal regime in space. There was no measure of understanding, explicit or implicit, on some vital issues at stake. These issues related to the ownership of space, including the moon and celestial bodies, ownership of space resources and other uses of space for military purposes, and storage of nuclear weapons around the orbit. The end of the space race of the first decade therefore almost coincides with a well-established regime of law and order by the Space Treaty of 1967, including other customary developments.

As in the case of the new U.S. Space goals, some semblance of change is available in the Soviet space policy as well. The Soviet Union is reported to be concentrating on orbiting the first manned space stations and on flying the first re-usable space vehicles.<sup>26</sup>

In summary, the post-Apollo space plans by the United States and the Soviet Union appears more pragmatic, utilitarian, and generally speaking, devoid of the prestige and power context. Due to the enormous costs of the space program, some of the military oriented space activities like the

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<sup>24</sup> PHILLIP C. JESSUP & HOWARD J. TAUBENFELD, *CONTROLS FOR OUTER SPACE & ANTARCTICA ANALOGY*, (1959).

<sup>25</sup> *SOVIET SPACE PROGRAMS, 1962-65; GOALS AND PURPOSES, ACHIEVEMENTS, PLANS, AND INTERNATIONAL IMPLICATIONS*, STAFF OF SENATE COMM. ON AERONAUTICAL AND SPACE SCIENCES, 89TH CONG., 2D SESS., 1 (1966). This Report carries an extensive survey of Soviet space policy goals at 920.

<sup>26</sup> *Supra* note 12, at 2. See also note 25, at 10 where the U.S. Senate Report indicates that in spite of the paucity of data, the Soviet space goals seem directed towards assembly of space stations. Oct. 14, 1969, at 42M while commenting on the recent Soviet Soyuz spacecraft flights, granted that these space stations may serve good scientific uses; it warned, however, that "manned space stations could also have important military uses." Cf. report of the *New York Times* News Service from Moscow after Apollo 12 landing on the moon: "The people of the Soviet Union, which inaugurated the space era 12 years ago, now seem rather disenchanted with the huge costs and diminishing prestige involved in running the Russian space program." *Dallas Morning News*, Nov. 16, 1969, at 18A. This comment, in general, explains the mood of space policy in the second decade with greater stress on pragmatism.

Manned Orbital Laboratory (MOL) program have been cancelled.<sup>27</sup> With adequate financial cuts in military spending, it may be possible to consolidate the achievements gained so far. The new policies announced by the United States indicate greater co-ordination of activities in the orbital and sub-orbital regions. There is greater emphasis for services such as the communication and meteorological satellites and other aspects involving international co-operation and mutual benefit among countries. In conclusion, the second decade of space exploration apparently opens with emphasis on co-operation rather than on competition. With broad contours of law and order set up by the Space Treaty, there is less likelihood of conflict arising between nations.

Bearing in mind the new space policies of the second decade, let us look to the extent of usefulness of the space law in the resolution of conflicts in the recent past, present and future world order. Let us also examine the freedom of space that States have enjoyed so far and correlate them with the responsibilities devolving upon them in the earth-space area in the decades which follow.

### III. ROLE OF SPACE LAW IN THE INTERNATIONAL SYSTEM

The role of space law is primarily related to its ordering capacity of the international system, a system oriented basically towards the terrestrial community. Enough scholarly work has been done on the nature of Space Treaty provisions or on the customary law of outer space.<sup>28</sup> What is planned in this short study is the exploration of the dominant theme or ideas contained in the space legal regime that shape the international system.

It may be stated *ab initio* that the Space Treaty, like the Charter of the United Nations, is a legal and diplomatic instrument. It is the end-product of efforts distilled from many disciplines. It surely contains some facts and basic ideas of legal scholarship.

Some jurists, as, for example, Professor Schachter, who wield authoritative opinions on the working of the UN system, obviously deplore the lack of creative scholarship in international law. They consider that the traditional form of legal scholarship consists of "summaries, restatements

<sup>27</sup> William Leavitt (Senior Ed. Air Force and Space Digest), "Post-Apollo Policy: A Look into the 1970s," *supra* note 12, at 42.

<sup>28</sup> On the Space Treaty, see Paul G. Dembling and Daniel M. Arons, *The Evolution of the Outer Space Treaty*, 33 J. AIR L. & COMM. 419 ff; *Space Law and the United Nations: The work of the Legal Sub-Committee on Outer Space*, 22 *Id.* 329 (1967); Eugen Brooks, *National Control of Natural Planetary Bodies—Preliminary Considerations*, *Id.*, 315; John C. Cooper, *Some Crucial Questions about the Space Treaty*, *Air Force and Space Digest*, 111 (March 1967); Ivan A. Vlasic, *The Space Treaty: A Preliminary Evaluation*, 55 CALIF. L. REV., 507-519 (1967); M. Chandrasekharan, *The Space Treaty*, 7 INDIAN J. OF INT'L L. 61-66 (1967); S. Bhatt, *Legal Controls of the Exploration and Use of the Moon and Celestial Bodies*, 8 *id.*, 33-48 (1968); *The United Nations Space Treaty and the Freedoms of Outer Space*, 2 INDIAN POL. SCI. REV. 132-54; (1968); Vishwanath Moore, *Military Uses of Outer Space: A Political-LLegal Perspective*, 8 INDIAN J. OF INT'L L., 329-47, (1968), esp. references cited on n. 10, 333; D. W. Wadegaonkar, *Legal Problems of Outer Space: Some Perspectives on the Space Treaty*, PROC. OF TENTH COLLOQUIUM ON THE LAW OF SPACE, (M.D. Schwartz, ed. 1967), esp. Part IV, on *Interpretation of the Space Treaty 1967*. A comprehensive and up-to-date account of the customary prescriptions and Space Treaty provisions are contained in the treatise *LAW RELATING TO OUTER SPACE ACTIVITIES*, by HOWARD J. TAUBENFELD & S. HOUSTON LAY, to be released by the American Bar Foundation in early 1970.



or quotations," that purports to be mostly "impressionistic, selective, argumentative." "One conclusion may be," as Professor Schachter points out, "that scholars in international law are largely impervious to the new ideas that have been developed in the neighboring disciplines of the social sciences and contemporary philosophy. Perhaps the reason for this is that international law is still predominantly influenced by the advocate and practitioner," concludes Professor Schachter.<sup>29</sup> Professor Falk, while contemplating on "The New States and International Legal Order," suggests further that in order "to move beyond impressionism a systematic framework of enquiry is needed to assemble and organize on a comparative basis data about the specific interactions between particular new States and the international legal order."<sup>30</sup>

In measuring the role of space law it is possible therefore, to refer to the dominant ideas which have permeated the legal order of the earth-space arena. The question of adjusting these ideas into a "Systematic framework of enquiry" may be treated with caution as ". . . the content and perception of the international legal order constitute a dynamic social process."<sup>31</sup> In a rapidly changing social and technological system, particularly seen in the context of space legal system, ideas must flow freely without necessarily freezing them into a strait jacket system. This, of course, does not mean a denial of scientific objectivity.

Nevertheless, in the context of Space Treaty stipulations and space law in general, many ideas have been infused in the international system due to the facts of the contemporary world order. Before outlining these facts it is advantageous to look to the dictum of Justice Holmes' in 1886 which serves as a beacon of light. He said:

All that life offers any man from which to start his thinking or his striving is a fact . . . For every fact leads to every other by the path of the air. Only men do not yet see how, always. And your business as thinkers is to make plainer the way from *some* thing to the *whole* of things; to show the rational connection between your fact and the frame of the Universe . . . . *To be master of any branch of knowledge, you must master those which lie next to it, and thus to know anything you must know all* [emphasis added].<sup>32</sup>

These profound observations by Justice Holmes are in complete conformity with the observations made earlier in the study by Professor Schachter of an interdisciplinary approach, and observations by Professors McDougal, Lasswell, Vlasic, and Professor Falk, emphasizing a dynamic

<sup>29</sup> O. Schachter, *Review of the Academie de Droit International, Recueil des Cours*, 1965, 63 AM. J. INT'L L. 839 (1969).

<sup>30</sup> Richard A. Falk, *The New States and International Legal Order*, 7, 9 (1966), RECUEIL DES COURS.

<sup>31</sup> Falk, *id.*; *Supra* note 7. See also following observation by McDougal, Lasswell, and Reisman, *The World Constitutive Process of Authoritative Decision*, 19 J. LEGAL ED. 253 (1967): "The frame of reference essential for discussion of the world constitutive process is the world social process. . . ." It is once again submitted, as history records, that the world social process is a process of continual change.

<sup>32</sup> Cited by Eilene Galloway, LEGAL PROBLEMS OF SPACE EXPLORATION, A SYMPOSIUM, Staff of Senate Comm. on Astronautical and Space Sciences—CONG.—SESS., 450 (1961). Italics supplied by the present author.

social process of the contemporary earth-space arena.<sup>33</sup> Justice Holmes also strikes at the root of the problem. His ideas are similar to those of Bart Landheer who says that "The stress on action expresses the crudeness of our times but the idea has been much more the motive of history and its cohesive force over long periods."<sup>34</sup>

The space legal policy has inscribed in the international system through custom and treaty, the general principles of *freedom, peace, law and co-operation*.

The path of law in outer space was prepared first through customary prescriptions formed through voluntary behavior of states and through the practice of the UN Resolutions on Outer Space. The merit of these resolutions can be assessed more objectively now in the sense that they were a means to a legal order in space. They proved successful to the entire satisfaction of the international community. The reason is clear. Judge Jessup cites Dr. Jenks' most cogent opinion to the effect that "One of the crucial tests of the wisdom of an international constitutional practice is whether it is calculated to promote and facilitate agreement or to provide occasions for unnecessary disagreements."<sup>35</sup> Aside from their contribution to conflict resolution, some writers of course disputed the legality of these resolutions in the sense that "participants were too few and the evidence of *opinio juris* too meagre, for the emergence of any clear rules of customary law."<sup>36</sup>

Nevertheless, from the attitude of states in general, such fears can be safely disregarded. From the point of science of law, it is necessary to stress that in space matters, particularly the legal order was based on "configurative jurisprudence" wherein the legal process seeks to resolve conflicts in international relations.<sup>37</sup> In crucial periods of the history of developments in the United Nations, Professor Schachter, with wide experience, states that "'law' did not merely impose restrictions, it also contributed in a positive manner to the development of international authority and responsibility in a tense and critical political context."<sup>38</sup> In conclusion, Professor Falk endorses the following comment of Professor R. P. Anand, an Indian scholar as "a very balanced assessment" of this issue. Dr. Anand says: "Although these resolutions are not formally binding and no more than 'recommendations', their effects on the course of the development of international law must not be underestimated."<sup>39</sup> Sometimes *opinio juris*, or true or intention even in a formal agreement or a

<sup>33</sup> Cf. Bart Landheer, *On the Sociology of International Law and International Society* (The Hague 1966), at 39, wherein the author points out that Max Huber also "advocated strongly that international law must also be seen in relation to its social foundations."

<sup>34</sup> *Id.* at vii.

<sup>35</sup> Address by Judge Philip C. Jessu, Hague Academy Lectures, *Parliamentary Diplomacy*, 89 RECUEIL DES COURS 181, 316 (1956).

<sup>36</sup> J. F. McMahan, *Legal Aspects of Outer Space: Recent Developments*, 41 BRIT. Y.B. INT'L L. 417 (1965-66).

<sup>37</sup> See generally McDougal, Lasswell and Reisman, *supra* note 14.

<sup>38</sup> Address by Oscar Schachter, Hague Academy Lectures, *The Relation of Law, Politics and Action in the United Nations*, 109 RECUEIL DES COURS 169, 214 (1963).

<sup>39</sup> Falk, *supra* note 30 at 42. Also R. P. Anand, *Attitudes of The Asian African States Toward Certain Problems of International Law*, 73 INT'L & COMP. L. Q. 55, 73 (1966).

treaty, is considered a fallacy.<sup>40</sup> The basic task in this respect is, as Professor McDougal recommends, that "advancing within the highest traditions of international law as we have known it in modern times, our opportunity is measured by the urgency of the posture of world affairs in the present epoch in history."<sup>41</sup>

The Space Treaty<sup>42</sup> of 1967 represents a more traditional form of international constitutional document to which states are used to contemporarily. The Treaty does not draw any lines of sovereignty; it establishes the principle of freedom of outer space. The principle of "freedom" is spelled out under Article I of the Treaty which stands for the freedoms of access, use, scientific investigation, and exploration.<sup>43</sup> How far this principle of freedom has served the individual interests of states and that of the community in general will be discussed later. Suffice it to say here that the Treaty helped, in the words of Taubenfeld and Houston Lay, in "structuring, resolving, and preventing conflicts within the nation and internationally with respect to outer space activities."<sup>44</sup> Ambassador Goldberg, while testifying before the U.S. Senate, outlined that the Treaty provides for freedom of movement in space, freedom of access to celestial bodies, declares outer space a province of mankind—thus forbidding claims of national sovereignty and, finally contributes to arms control measures.<sup>45</sup> Secretary Rush compared the Space Treaty with the Antarctica Treaty and the Limited-test Ban Treaty, which he held the U.S. Senate "are examples of a congruence of common interests among the United States, the Soviet Union, and many other countries."<sup>46</sup> The Antarctica analogy to outer space was indeed explored with great vision and depth in the early period of space exploration by Judge Philip Jessup and Professor Howard Taubenfeld.<sup>47</sup>

A decade of experience in Antarctica may help us to project our image of the shape of things in outer space a decade from now. It appears most

<sup>40</sup> Address by Myres S. McDougal, Hague Academy Lectures, *International Law, Power and Policy: A Contemporary Conception*, 82 RECUEIL DES COURS 137, 152 (1953). McDougal cites *Harvard Research In International Law of Treaties* (1935), stating that the interpretation is a task of "giving a meaning a context."

<sup>41</sup> *Id.* at 258. Reference may be made to Lasswell's BOOK REVIEW, 63 AM. J. INT'L L. 646-47 (1969). Professor Lasswell approves of the concept of law referred by Professor Barkum which "enables a scientific observer or an active policy maker to identify the components of jural order in the present world arena, or in the primitive societies that preceded the appearance of civilization, and which persists in varying degrees of disorganization in several parts of the contemporary world. Both aims are highly relevant to the growth of a more perfect world order and a more adequate jurisprudence. The one-sided identification of 'law' with the sovereign state has made it difficult for scholars or laymen to acknowledge that a world jural order is conceivable short of an all-inclusive world state."

<sup>42</sup> *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and the Celestial Bodies*, 61 AM. J. INT'L L. 644-48 (1967). The Treaty entered into force on Oct. 10, 1967; see 6 INT'L L. MATERIALS 386 (1967).

<sup>43</sup> The present writer has attempted to explore the meaning and content of the notion of freedom of outer space contained under Article I of the Space Treaty. See *The United Nations Space Treaty and the Freedoms of Outer Space*, 2 INDIAN POL. SC. REV. 132-54 (1968).

<sup>44</sup> S. HOUSTON LAY & HOWARD J. TAUBENFELD, *LAW RELATING TO OUTER SPACE ACTIVITIES*, ch. II at 37, to be released shortly by the *American Bar Foundation*.

<sup>45</sup> *Secretary Rusk and Ambassador Goldberg Urge Senate Approval of Outer Space Treaty*, 56 DEPT. STATE BULL. 602 (1967).

<sup>46</sup> *Id.* at 600.

<sup>47</sup> *Supra* note 24.

appropriate to cite here the perceptive analysis made in a recent editorial of *The New York Times* on the tenth anniversary of the Antarctica Treaty. The comment is representative of the all-inclusive problems of our times and needs detailed reference:

In effect, this pioneering compact, declared the Antarctica to be a continent of peace, where men would cooperate for mutual advantage and for the advancement of science, where military activities would be prohibited and where territorial claims would be outlawed for at least thirty years. And so it has worked out—thus far. . . . In this coldest of the continents and the iciest of landscapes, the cold war was abolished. There can be little doubt that this precedent helped to create the foundations of mutual confidence on which the great diplomatic landmarks of the past decade have been based, notably the Test-Ban-Treaty of 1963, the Space Compact of 1967 and the Nuclear Non-Proliferation pact of 1968. In effect the Antarctica has become a political science laboratory, and the Antarctica Treaty a historic, successful experiment pointing the way for future progress toward international cooperation.

Now the task is to apply the lessons learned from that experiment to all of the great contemporary problems where needless suspicion and rivalry waste huge resources and endanger earth itself.<sup>48</sup>

#### IV. THE FREEDOM OF OUTER SPACE: PAST, PRESENT AND FUTURE PERSPECTIVES FOR THE INTERNATIONAL COMMUNITY

It is necessary to examine the principle of freedom of outer space through an observational angle which is true for the whole international system.<sup>49</sup> Looking through the historical period of past centuries, even the freedom of the seas has, from the time of Grotius, been discussed in this international perspective. In the assessment of trends in this freedom principle of space, there are two major factors affecting the system: one, the irresistible scientific temper of our times which indeed made possible the space breakthrough;<sup>50</sup> second, the *nature* of the international system which admits of the freedom of outer space. On the nature of the international system Professor Falk remarks:

The absence of centralized effective authority is a critical fact of international life. If the organized community cannot impose restraints, then restraint, if it is to exist at all, must be self-generated. An obvious inference is that the parties to be restrained must come to an agreement, i.e., that in this case the space powers must enter into a compact of mutual restraint that satisfies their joint and separate interests.<sup>51</sup>

<sup>48</sup> *The Example of Antarctica*, N.Y. Times, Dec. 9, 1969, at 50 M, col. 2.

<sup>49</sup> "An international system is a pattern of relation between the basic units of world politics, which is characterized by the scope of the objectives pursued by those units and of the tasks performed among them, as well as by the means used in order to achieve those goals and perform those tasks." See Stanley Hoffman, *INTERNATIONAL SYSTEMS AND INTERNATIONAL LAW, INTERNATIONAL LAW AND ORGANIZATION: AN INTRODUCTORY READER* 91 (R. A. Falk & W. F. Hanrieder eds. 1968).

<sup>50</sup> As C.P. Snow says, "They (the scientists) are inclined to be impatient to see if something can be done, until it's proved otherwise. That is their real optimism, and it's an optimism that the rest of us badly need." Cited by Leonard S. Silk, *VALUES & GOALS OF SPACE EXPLORATION*, Taubenfeld, *supra* note 15 at 71.

<sup>51</sup> Richard A. Falk, *TOWARD A RESPONSIBLE PROCEDURE FOR THE NATIONAL ASSERTION OF PROTECTED CLAIMS TO USE SPACE*, *id.* at 95.

The "stakes of conflict" in the first decade of space exploration has been confined, as Professor Falk very rightly states, between two super powers. As the one period ends and a likelihood of a multiplicity of space powers begins, it may be deduced that a new international system is emerging wherein freedom of space may be evaluated in terms of the common interests of the entire international system, not confined to space powers only.<sup>52</sup>

The concept of freedom of outer space, right from the beginning of the space age, has been considered an attribute of the common interests of mankind. A pioneer space lawyer refers to the freedoms of the sea in the context of Article 2 of the Geneva Convention of 1958 on the High Seas: "Freedom can only be exercised with reasonable regard to the interests of other States."<sup>53</sup> He further elaborates: "In classic concept, the freedom of the airspace over the high seas is limited, as in the freedom to use the seas, to peaceful, or at least to non-threatening, uses."<sup>54</sup>

Nevertheless, unlike the Antarctica regime, the regimes of air space, as that of the seas, are not without blemish in their use or misuse. Professor Taubenfeld warns:

Indeed, a review of the sorry spectacle of incidents, conflicts, and slaughter under the self-regulating regimes for both the seas and airspace would doubtless lead not only to a desire to avoid the same or even worse for the infinities of outer space, but also to a reinforced desire to reverse the process here on earth.<sup>55</sup>

The universal regime of air contains the two freedoms of "transit" and "technical halt" incorporated into it through the Chicago Convention. In effect, the conflicts of commerce extended through the segments of national verticle space have made even these two freedoms a show piece of that convention. The five-freedoms agreement called the International Air Transport Agreement, which was to have shaped post-World War II aviation relations, never got to any shape from the start. What followed was the Bermuda Agreement, a compact which, as an international agreement for aviation commerce, compares even to this day to a Pandora's box.<sup>56</sup> For the same reasons of commerce, more brightly considered in the supersonic era, the sovereign regimes of the air are giving way to global cooperation through pooling of airlines or thorough proposals sought by states to the International Civil Aviation Organization (ICAO) for forming International Operating Agencies.<sup>57</sup>

<sup>52</sup> Cf. following: "One of the main tasks of a historical sociology of international politics [as of international law] is the delimitation of such [international] systems: where does one system begin or end, in space and in time? It is with the limits in time that I am concerned here. As Raymond Aron has observed, periodization is always both necessary and dangerous: the historian should refrain from attributing to those he choses consequences which only empirical evidence could prove. The criteria I would propose are what I would call the *Stakes of Conflict*." See Hoffman, in Falk and Hanrieder, eds., *supra* note 49, at 91.

<sup>53</sup> Howard J. Taubenfeld, "Nuclear Testing and International Law," *Mimeo*, at 34.

<sup>54</sup> *Id.* at 36.

<sup>55</sup> Howard J. Taubenfeld, *A Regime for Outer Space*, 56 Nw. U. L. Rev. 129, 136 (1961-62).

<sup>56</sup> See generally John C. Cooper, "The Bermuda Plan: World Pattern for Air Transport", in *Explorations in Aerospace Law*, Selected Essays by John Cobb Cooper, 1946-1966, ed. by Ivan A. Vlasic (Montreal, 1968), 382-94.

<sup>57</sup> Cf. following remarks from Dr. D. Goedhuis, *Sovereignty and Freedom in the Air Space*, 41

The regime of the seas based on freedoms of navigation, cable-laying, shipping, and of freedom over the airspace over the high seas, seems to work better in comparison to the regime of the air. Nevertheless, as technology has advanced, there are growing claims over territorial seas, bays, continental shelf and sea-bed and the ocean floor<sup>1</sup> called inner space.

The basic premise on which Grotius sought to keep the seas free was the social policy of freedom of international commerce. Taken in the territorial sense [and we may add the interplanetary regime] Grotius wrote:

No one, in fact, has the right to hinder any nation from carrying on commerce with any other nation at a distance. That such permission be accorded is in the interest of human society and does not involve loss to any one.<sup>58</sup>

Even in the case of freedom of transit across land Hyde remarks:

. . . The position . . . of the State whose territory, notwithstanding its vital importance as a channel of commerce to special groups of other States or to international trade generally, offers in time of peace an obstacle rather than an aid to transit, is likely, as time goes on, to be increasingly regarded as inequitable.<sup>59</sup>

Pufendorf also opines with Grotius "that a right of passage exists, provided that no harm is done to the transit state or that the transit, in the case of merchandise, is such as to meet the necessities of life."<sup>60</sup>

A consensus among the aforementioned jurists lead to the findings that on examination of the concept of the freedom of outer space—a concept which in modern times is better understood in terms of the type of activity, it is noticed first, that, undeniably, there is a right to the freedoms of exploration, exploitation, scientific investigation; and second, these rights should cause no detriment from one state to the other. Furthermore, from the perspective of the present global era, interdependent and more homogeneous than the times of Grotius, a corollary springs forth that the freedoms of space should conform to the social policy of the international community which is indeed, the policy that Grotius himself campaigned for, as did also the contemporary jurists and statesmen.

How far has the principle of freedom in outer space served the international system? How far has freedom in space been conducive to the social policy? And how much has space technology been useful or detrimental to global progress? The answer to these questions follows from the pattern of responsibility set up so far by states in the discharge of their national and international interests. Policies of the first decade, in spite of being competitive, showed major thrust in securing benefits from space for the common interests of mankind and space technology also produced

TRANS. OF GROTIUS SOCIETY FOR 1955, 137, 139: "Whilst agreement on the principle that the State should have sovereignty over its territorial air space, . . . was quickly achieved, . . . the views of both statesmen and writers in respect of the *nature* and *contents* of this sovereignty have been deeply divided and continuously changing." See also Bin Cheng, *Nationality of Aircraft Operated by Joint or International Agencies*, YEARBOOK OF AIR AND SPACE LAW (1966), 5-31.

<sup>58</sup> H. GROTIUS, *DE JURE BELLI AC PACIS*, LIBRI TRES, 199 (vol. 2 F. Kelsey, transl. 1964).

<sup>59</sup> Hyde 1 INTERNATIONAL LAW 618 (1945), cited in E. Lauterpacht, *Freedom of Transit in International Law*, 44 TRANS. OF GROTIUS SOCIETY FOR 1958 & 1959, 313, 319.

<sup>60</sup> *Id.* at 320.

applications for military technology, and it is in this context that states have to seek alternatives for their national responsibilities during future decades.

## V. CHANGING TRENDS IN THE RESPONSIBILITY OF STATES IN THE OUTER SPACE ARENA

### A. *The Perspectives of "Security Through Limitations"*

When Grotius elaborated the theory of freedom of the seas during the seventeenth century there were, of course, national rivalries and conflicts of interests. Nevertheless, technology being primitive, the problem of security was of much less significance, or varied considerably with the military strategies of the present day era. Even the Charter of the United Nations, essentially a pre-atomic document, grants states rights of self-defence (under Article 51) only "if an armed attack occurs." Now it is to be kept in mind that the Space Age follows after the Atomic or Nuclear Age. The law in space had to be responsive to the needs of military strategy until the reverse process took place or is taking place now. There were intense debates on the peaceful and the military uses of outer space. The problem at stake was that outer space having been preempted by military technology, it was necessary to see the legitimacy of a particular activity being purely military or aggressive. Some jurists thought that activities being interdependent, both "peaceful" and military activities could be carried on simultaneously. As Professor Gardner said:

It should be obvious that the attempt to build peaceful space cooperation and a regime of law for outer space does not eliminate the need for military space programs to maintain the security of the United States and the entire free world. There is no inconsistency in moving simultaneously on both fronts. For the foreseeable future, we need military space programs to help keep the peace and civilian space programs to help us live better in peace.<sup>61</sup>

Meanwhile the majority of states were keen to keep outer space for peaceful purposes. The two reasons for this were: To keep space from becoming an arena for weapons of mass destruction, and secondly, to prevent military rivalry between the two Space Powers—the U.S.S.R. and the U.S.A.<sup>62</sup> These two points explained in logical terms the meaning of peaceful vs. military uses and like the definition of "aggression," the controversy surrounding military—peaceful uses of space was otherwise defying solution.<sup>63</sup>

The global military strategy continued to change rapidly through the deployment of space weapons. States sought security through deterrence of a preemptive strike, then a second retaliatory strike, and finally the use

<sup>61</sup> Richard N. Gardner, *Outer Space: Problems of Law and Power*, 49 DEP'T STATE BULL. 367, 371 (1963).

<sup>62</sup> Dr. Rita F. Taubenfeld and Professor Howard J. Taubenfeld, "Man and Space: Potentials, Politics, Legal Controls," in Taubenfeld ed., *supra* note 15, at 7.

<sup>63</sup> Cf. "... if we are to escape from the dead ends of thought to which we have reached on these issues [of definition of aggression], we must somehow learn to see and translate them in larger terms than those of any immediate crisis," Julius Stone, *AGGRESSION & WORLD ORDER* vii (1958).

of Intercontinental Ballistic Missiles (ICBM). There was always the fear of a breakthrough in military technology. By the end of the first decade it became clear that the offensive weapons exceeded the usefulness of defensive weapons,<sup>64</sup> and even the ICBM is now generally regarded as obsolete.<sup>65</sup>

It may be concluded therefore that, given the state of military technology in the present international system, there are less chances of security through armament. It is necessary to be cautious of the continued state of armament build-up. As Kenneth Boulding warns, "I believe that the present international system to be one which has a significant probability built into it of irretrievable disaster for the human race. The longer the number of years we contemplate such a system operating, the larger this probability becomes."<sup>66</sup>

The emphasis in the responsibility of states for individual and collective security, therefore, seems to be shifting towards the concept of "security through limitations." As Harold Brown remarks "A carefully designed agreement to limit strategic weapons could help to preserve deterrence on both sides. It could also provide both sides with some ability to limit damage in case of irrational or accidental war."<sup>67</sup> The Helsinki talks for Strategic Arms Limitation Talks (SALT) are pointers to this shift in national policies and augurs well for the peace of the world. One of the authorities writing in early 1960 said "The only thing that would put an end to all military innovation would be a reversal of the general social trend to innovation [in the sense of the use of technology]: but this is something against which the most powerful ideological social, political and industrial forces in modern society are arrayed."<sup>68</sup> The second decade opens with optimism. There is greater emphasis on scientific exploration of space. Apart from SALT talks, there is prohibition announced against bacteriological and chemical warfare. Above all, from contemporary trends there is evidence of change in research spending in defence matters, toward peace-oriented goals. These developments indeed raise hopes for other responsible measures which may redeem a warless world and control the menace of nuclear weapons through the revival of the laws of war which have been completely ignored for a long time. Until this period of his-

<sup>64</sup> "Perhaps the most important single factor concerning the contemporary technology of violence is the fact that offensive weapons have far outstripped defensive counter-weapons." McDougal, Lasswell, and Vlasic, *supra* note 3, at 383.

<sup>65</sup> Compare the following from Frank E. Bothwell, *Is ICBM obsolete?* Oct. 1968 BULL. ATOMIC SCIENTISTS, 21-22: "Just a few years ago the nuclear armed inter-continental ballistic missile was heralded as the new and the ultimate of the super weapons, instantly ready, unequalled in its devastating power, impossible to counter. Now just a decade later when this intercontinental weapon is serving as the backbone of our strategic defence force, there have arisen reverse doubts that it can survive its own headlong technological growth. It is ironic that the very developments that are making the ICBM so much more devastating seem to be rushing the missile into obsolescence." This shift in strategy is further confirmed by the U.S. announcement, 60 DEPT. STATE BULL. 273 (1969), wherein priority is accorded to the protection of land-based retaliatory forces against a direct attack from outside.

<sup>66</sup> Kenneth E. Boulding, *The Prevention of World War III*, in THE STRATEGY OF WORLD ORDER, I TOWARD A THEORY OF WAR PREVENTION 5 (Richard A. Falk and Saul H. Mendlovitz eds. 1966).

<sup>67</sup> *Strategic Weapons: Security Through Limitations* FOREIGN AFFAIRS, 422, 423.

<sup>68</sup> Bull, THE CONTROL OF ARMS RACE 197-98, cited in McDougal, Lasswell and Vlasic, *supra* note 3, at 381.



tory, legal scholars specializing in space policies stressed that law should be closely allied with military strategy. As Robert Crane wrote:

The thesis that political and military strategists should include the potentials of law as a factor in their consideration had the necessary corollary that space legal scholars should begin to think of their legal analyses as merely one factor in geopolitical and military strategy. Those who apply their special talents to the legal problems of space activities must realize that their chosen speciality is merely one sector of a broad front, in which military strategy and international politics and economics are at least equally important.<sup>69</sup>

Having witnessed a coalescence of all relevant factors—of military and political strategy on the one hand, and the legal strategy on the other, there is a convergence of interests which can be given proper shape through laws of war. As Dr. Nagendra Singh, a noted authority on the subject, points out, "In a Nuclear Age, witnessing the invention of weapons and devices each more destructive than the other, the importance of the laws of war cannot be over-emphasized."<sup>70</sup> Dr. Nagendra Singh brings timely reference to the indefatigable efforts of Kunz who states that, "it was Grotius who, under the impression of the 'total war' of thirty years urged upon men the necessity of the *temperamenta belli*. It is amazing to see that the men of this generation, living under a more terrible total war, turn their backs upon the laws of war."<sup>71</sup> Dr. Schwarzenberger, in his perceptive analysis of this problem, appeals for prohibiting the use of nuclear weapons on the grounds of laws of humanity and civilization.<sup>72</sup> Even the concept of neutrality in warfare needs to be revived in reversing the global trends of total wars.<sup>73</sup>

#### B. Responsibility Towards Reconciliation of the Regimes of Air and Outer Space

Looking into the past decade of space exploration, one notices some measure of interaction taking place between the regimes of air and outer space. The problem faced now and in the decades ahead is whether these two regimes will merge or whether some steps will be taken to avoid the conflicts which are bound to arise due to the divergence of the two regimes. In other words, a "reconciliation" process must be sought which will enable the two systems of legal order—in air space and in outer space—to exist side by side, in harmony. The "reconciliation process" does not merely relate to the demarcation of the air space zone and outer space, once such attempts in the past have been discussed without yielding concrete solutions. Nor will functionalism, defined in terms of the type of activity, although very useful so far, help in the long run in the reconciliation

<sup>69</sup> Crane, *supra* note 9, at 1.

<sup>70</sup> NAGENDRA SINGH, NUCLEAR WEAPONS & INTERNATIONAL LAW 13 (1959). Dr. Singh, a member of the International Law Commission, notes with regret that that body of the UN did not decide in 1949 "to include the laws of war in the list of topics selected for codifying and development of international law."

<sup>71</sup> Kunz, *The Chaotic Status of the Laws of War and the Urgent Necessity for their Revision*, 45 AM. J. INT'L L. 37 (1951), cited in Dr. Singh *id.* at 13.

<sup>72</sup> See generally GEORGE SCHWARZENBERGER, THE LEGALITY OF NUCLEAR WEAPONS (1958).

<sup>73</sup> The only attempt in this direction seems to be made by Julian G. Verplaatse; see INTERNATIONAL LAW IN VERTICAL SPACE (1960), esp. Pt. Six on the *Law of War and Neutrality*.

process between the two regimes. The reasons are obvious since a spacecraft may descend to the airspace limits where a hypersonic aircraft may be operating and vice versa.

So, the basic problems which are confronted in the reconciliation process are: divergence of sovereign regimes of airspace and free outer space; convergence of technologies being developed for aircraft and spacecraft; and, finally, the conflicts which may occur as the result of threats to the security and privacy of superjacent states. In trying to arrive at a reconciliation of the two regimes it is necessary to seek ways and means in order to bring about a rationalization of the global transportation system supported through the medium of air space and outer space. In fact, the crux of the problem in the second decade onwards of space exploration is to create a rationalized and economic system of transport, communication, meteorological uses, and other social benefits for the international system.

Before seeking a common ground in the regimes of air and outer space, the point of departure begins with Article 1 of the Chicago Convention which sets forth that "The Contracting States recognize that every State has complete and exclusive sovereignty over the airspace above its territory." The Convention, obviously, does not define airspace. It is common knowledge, however, that the intention of the States Parties signatory to the Chicago Convention, was to claim sovereignty over the airspace above their territories when territory also included according to Article 2 of the Convention "... land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of such State." It appears that since the framers of the Convention at Chicago in 1944 had very little presumptions about flights into outer space the limits of airspace would have been laid down or airspace would have been defined. Thus as Goedhuis writes:

The legal regime of the superjacent airspace of a State is also based on a general consensus which, in this case, finds its cause in the recognition that sovereignty over this area is a necessary complement to the sovereignty of the State over its land and territorial waters.<sup>74</sup>

Moreover, like the Paris Convention, the Chicago Convention was drawn up almost at the end of a devastating world war in which air power had played havoc over cities and populations. It was therefore a universal desire that all states possess exclusive control and competence over their airspace. Even to this day, the element of security through sovereign and exclusive control of national airspace, plays an important part in the international arena.<sup>75</sup> As Professor Taubenfeld remarks, "It is clear, of course,

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<sup>74</sup> D. Goedhuis, *An Evaluation of the Leading Principles of the Treaty on Outer Space of 27th January 1967*, 15 NETHERLANDS INT'L L. R. 19 (1968).

<sup>75</sup> As Professor D. Goedhuis remarks: "Though it is undoubtedly true that the defence of a country against attacks from the air, through . . . technological developments, has become considerably more difficult, this certainly does not mean that the principle of sovereignty over air space, from a security point of view, is no longer of any value. And it is not only for this reason that no State has so far shown any inclination *even to restrict* its sovereign rights let alone to relinquish them." 109 RECUEIL DES COURS 263, 338-39 (1963-II).

that any regime for space is related both historically and in fact to the regime for airspace."<sup>76</sup>

With the advent of air power and more significantly and prospects of warfare through armed spacecraft, the emphasis in security undoubtedly changed from the distance to the time factor. In the beginning of space exploration Professors McDougal and Lipson very rightly opined that

A . . . feature of the factual setting relates to the changing relative importance of distance and time. It is possible that achievements in space will tend to diminish the importance of space in the positional sense and increase the importance of time for the planning of human affairs. In military planning, to take one example, the threat of attack from outer space may reduce the intervals available for self-protection by shelter or by reprisal and thus increase the urgency of inspection and patrol.<sup>77</sup>

From the above statement it is clear that the time factor has gained importance in regard to "planning of human affairs" in general. In relation to the element of security an important change that deserves careful attention is that reprisal measures are not completely dependent upon the time factor. The military strategy during the first decade of exploration was considerably based on a preemptive first strike. However, during the contemporary period there is a shift to the maintenance of "balance of terror," or deterrence policy, through strengthening of the second-strike retaliatory forces. This shift is primarily due to the increase of offensive forces to the defensive measures.

It is necessary, therefore, to stress the other most important ingredient of the regime of airspace which is privacy and possessiveness on which it has been structured ever since the beginning of the air age. Indeed the exclusive control is cherished by States for reasons of commerce, by exploitation of the aerial highway within the territorial air space and also on reciprocal basis internationally. The criticism of aerial sovereignty is not as much on account of the State jurisdiction over national airspace as upon the "lack of international rules by which this sovereignty is limited—the lack of insight into the role which an unhampered aviation can play in a balanced growth of world economy."<sup>78</sup> It is in this context of world economy sought through equitable uses of airspace that traditional notions of air sovereignty have to undergo some change. This change is in the interests of all states as technology assumes bigger promotions and individual States find it increasingly difficult to maintain a costly fleet of modern supersonic airlines.<sup>79</sup> This international cooperation in international relations through commercial and social aspects of aviation or space may

<sup>76</sup> *Supra* note 55, at 131.

<sup>77</sup> M. S. McDougal & L. Lipson, *Perspectives for a Law of Outer Space*, 52 AM. J. INT'L LAW 407, 410-11 (1958).

<sup>78</sup> Goedhuis, *supra* note 75, at 339.

<sup>79</sup> Compare the remarks made in 1956 by Dr. Jenks *supra* note 6, at 102: "The principle of the sovereignty of each state over the airspace above its territory . . . may become increasingly unreal as greater use is made of the upper airspace; we cannot disregard the possibility that the present law relating to sovereignty over airspace, while well established at the present time, may be regarded by future generations much as we regard the claims to maritime sovereignty which were more or less successfully asserted for several hundreds of years before Grotius and Bynkershoek established the principle of the freedom of the seas."

be viewed more from the point of view of "reconciliation process" than the global power process in which, according to Professor Karl W. Deutsch, we may have in 1984 a world of between four to ten nuclear and space powers.<sup>80</sup> Technology does bring both international cooperation and big power status. In matters affecting the aerospace system of future decades, the States, big and small, have common stakes at hand. It seems that the path lies ahead for greater cooperation and unhindered aerospace travel keeping due regard to the economic and security interests of all countries. The change in the present trend of aviation relations can be secured through traditional process of multilateral and bilateral agreements. These agreements are representative of the interdependence among states and as Judge Jessup states, "Limited interdependence, through cosignature of multipartite treaties, is a familiar aspect of traditional international law."<sup>81</sup>

The first attempts in seeking a resolution of conflict between the regimes of airspace and outer space was initiated by Professor John Cooper. He had a wide experience of the role of aviation extending between the period of the two world wars. Professor Cooper's major thesis was to create a boundary demarcation between the region of air and outer space. In the study of this problem in the second decade of space exploration, the objective is to see the usefulness of Professor Cooper's proposals of creating two zones of sovereign and free airspace. With the benefit of hindsight, it is possible to see why these proposals could not succeed then and when he was ahead of his times in formulating his proposals.<sup>82</sup>

In retrospect, it appears that the historical forces were against Professor Cooper's proposals. Nineteen fifty-seven was the dawn of a period of a fantastic scientific leap into outer space acclaimed by all mankind. Secondly, his proposals were based upon physical and scientific considerations which had less relevance to the issues at stake, such as security and commerce. Not only Cooper, but others including Haley, who tried to evolve a perfect scientific basis for boundary walls between air space and outer space could not win consensus in scholarly debates on the subject.<sup>83</sup>

Those jurists who opposed demarcation of airspace and outer space thought that it was too early to ponder over the issues. Judge Jessup said it was too early, and experience was needed before any concrete proposals could be acceptable to all States.<sup>84</sup> Dr. Jenks writing at the brink of space exploration considered that the problem of demarcation was not important.<sup>85</sup> Even the *Ad Hoc* Committee on Peaceful Uses of Outer Space of

<sup>80</sup> McDougal, Lasswell and Vlasic, *supra* note 3, at 360. The nature of global power system is sometimes unpredictable. When space exploration began in 1957 it was rather unexpected to foresee some of the contemporary global changes, for example: The Sino-Soviet rift; a reconciliation process between the U.S. and the U.S.S.R.; somewhat diminished role of the UN in peacekeeping etc. See generally Lincoln P. Bloomfield, *Arms Control and International Order*, 23 INT'L ORG. 637-55, esp. at 649 (1969).

<sup>81</sup> PHILIP C. JESSUP, *A MODERN LAW OF NATIONS* 38 (1948).

<sup>82</sup> For Professor John C. Cooper's proposals for demarcation of airspace and outer space see generally, *Legal Problems of Upper Space*, 1956 PROCEEDINGS OF AM. SOC. INT'L L., 85-115. His other writings on the subject are contained in *Explorations in Aerospace Law*, *supra* note 56.

<sup>83</sup> For Andrew G. Haley's views see his *Space Law and Government* (New York, 1963), esp. ch. on "The Limits of National Sovereignty," *ibid.*, 75-107.

<sup>84</sup> Crane, *supra* note 9, at 6.

<sup>85</sup> Dr. Jenks said: "There would, however, be serious difficulty in defining the boundaries of

the United Nations had twice rejected discussions on the issue of boundary demarcation.<sup>86</sup> The UN Committee had stated that:

Under the terms of existing international convention and customary international law, States have complete and exclusive sovereignty in the air space above their territories and territorial waters. The concurrent existence of a region in space which is not subject to the same regime raises such questions as where air space ends and where outer space begins. It was noted that these limits do not necessarily coincide. While they have been much discussed in scholarly writing, there is no consensus among publicists concerning the location of these limits.<sup>87</sup>

The scholarly consensus in the early period of space exploration was nevertheless summed up, as the 1956 Proceedings of the American Society of International Law. Most of the jurists participating, including Professors Lissitzyn, Alex Meyer, Schachter and McDougal sought to postpone the issue, to treat outer space on the analogy of the high seas, and to wait for customary developments through state practice which would help adequately in fixing the boundary at a suitable date.<sup>88</sup> Some jurists even feared that creating boundary walls at that stage might even legalize many military activities potentially dangerous to the superjacent State.<sup>89</sup>

Thus the first decade of space experience witnessed a functional control of space activities. There were no points of conflict between the two regimes of airspace and outer space. Functionalism was based on the type of activity conducted by a spacecraft and related mainly to scientific exploration, navigation and meteorological uses, and surveillance and reconnaissance. In this period "the lowest point crossed by a satellite orbit or far [had] been 140 hm. (Mercury, Friendship-7)."<sup>90</sup> There had been no protests by any state up to that time. The only controversy arose in regard to Soviet protests over U.S. reconnaissance spacecraft; but even these protests were subsequently dropped as the U.S.S.R. itself was reported en-

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the successive zones. Even if this difficulty were overcome and such an approach to the problem were to be adopted the projection of the territorial sovereignty of a State beyond the atmosphere above its territory would be so wholly out of relation to the scale of the Universe as to be ridiculous . . ." *Supra* note 6, at 103.

<sup>86</sup> DR. C. W. JENKS, *SPACE LAW* 176 (1965); Dr. Jenks himself opines at this stage, in contrast to his earlier opinion expressed in 1956 (*see supra* note 84), that "An acceptable demarcation which could be readily agreed would of course have substantial advantages, but any attempt at the present time to agree upon such a demarcation involves a combination of dangers which are partly alternative and partly cumulative."

<sup>87</sup> *Report of the Ad Hoc Committee on the Peaceful Uses of Outer Space*, UN Doc. A/4141, 1959.

<sup>88</sup> *See generally Legal Problems of Upper Space*, 1956 PROCEEDINGS, AM. SOC. INT'L L., 85-115. Professors McDougal, Lasswell and Vlasic made further analysis of the problem stating: "The assumption which underlies the preference for a customary development of accommodation is that this mode of decision is likely to impose a greater limit upon assertions of comprehensive, exclusive competence than could be achieved in the contemporary world arena by a negotiated settlement." *Supra* note 3, at 358.

<sup>89</sup> Robert Crane said that by creating boundary walls "we may [even] prevent the effective operation of necessary national, international or supranational defence measures. Such artificial regulation would lead not to agreement among the powers, but to disagreement and perhaps eventually war." *Supra* note 9, at 9. Reflecting a decade after the above observations, one may agree that it is the sovereign prerogative of states to take suitable defence measures in outer space. Yet, there can be other grounds like forcible interference in the airspaces traditionally used for national purposes which may be now more likely a basis for conflict as the technology and designs of spacecraft and aircraft are coming closer.

<sup>90</sup> GYULA GAL, *SPACE LAW* 85 (1969).

gaged in reconnaissance of U.S. territory. Indeed what was a source of conflict subsequently became regarded as a necessary peacetime activity. As Professor Taubenfeld elucidates, "Indeed one of the most productive peaceful uses of space may well be information-gathering for peace preservation, whether the systems are nationally or internationally directed."<sup>91</sup>

It is my submission, however, that the principle of functionalism has been most skillfully used so far. Its continuation is in serious doubt for reasons already explained. The second decade sees problems in different perspective. The technologies and the type of activities are likely to become identical whether conducted by spacecraft or aircraft.<sup>92</sup> A look at the U.S. space objectives<sup>93</sup> would indicate greater activity by space vehicles in the orbital and sub-orbital regions thus coming in close proximity to the regions of supersonic and hypersonic air transport. Moreover States are wary of the growing militarization in outer space, which small nations in particular construe as misuse of the freedoms of outer space. The UN *Ad Hoc* Committee on Peaceful Uses of Outer Space which at one time had rejected the boundary problem<sup>94</sup> now strongly advocates finding a solution to the problem. The Preamble to the Space Treaty of 1967 calls on the Committee on Peaceful Use of Outer Space to find a solution to the question of definition of outer space.<sup>95</sup> Professor Alex Mayer, participating in the United Nations Conference in Vienna in 1968, while drawing attention to the fact that there is no uncertainty as to where the limits should be drawn, has nevertheless brought out significantly the need for the boundary demarcation which would reconcile the two regimes of air and outer space. Mayer says:

The division of space into air space and outer space above the earth's surface must be acknowledged as an unchangeable fact. In the Space Treaty Art. VII), too, the air space and the earth's surface have been confronted with outer space. In particular, it seems to be beyond any doubt that the States will and cannot renounce the sovereignty over the air space above their land and water territories constituting a part of their sovereign territory.<sup>96</sup>

The conclusion that may be drawn here is that there is need now or in the immediate future for demarcation of regimes of air space and outer space. As to the nature of limits, there is universal consensus by now that

<sup>91</sup> *The Status of Competing Claims to Use Outer Space: An American Point of View*, *supra* note 15, at 151.

<sup>92</sup> *Cf.*, for example, *Designers Working on Aerospace Craft*, The Dallas Morning News, Oct. 25, 1969, at 32D. "First, there was aeronautics and the winged descendants of the Wright Brothers' creation. Then came astronautics and the blunt, wingless shapes of the Mercury, Gemini and Apollo spacecraft.

Now the two technologies of flight are being drawn together to create what is hoped will be the next generation of manned space machines in the aerospace craft capable of landing at ordinary jet airports. . . . the aerospace craft would be built to make as many as 100 trips from Cape Kennedy, Fla., into orbit and back to the Earth, primarily to shuttle men and supplies to and from giant space stations planned by the United States for the late 1970s. Development of such a vehicle—which is part rocket, part orbiting spacecraft and part airplane—was given a high priority by President Nixon's Space Task Group in its report in September."

<sup>93</sup> *Supra* note 11.

<sup>94</sup> *Supra* note 87.

<sup>95</sup> *Report of the Committee on the Peaceful Uses of Outer Space*, UN Doc. A/6621 (1966).

<sup>96</sup> Alex Mayer, *Legal Problems of Outer Space: A Contribution to the UN Conference in Vienna, 14-27 Aug. 1968*, 1 *Zeitschrift für Luftrecht und Weltraum-Rechtsfragen* 12 (1969).

the limits can be set up through international negotiations. In order to avoid strong bargains, the boundary may be fixed for a temporary period, by drawing from the analogy of the Antarctica Treaty of 1959 which is initially valid for thirty years. Future changes in technology or international interests can be accommodated after the stipulated period for which the demarcation exists. The merits of a temporary boundary are stated by Professors McDougal, Lasswell, and Vlasic as follows:

The possible temporary boundary we suggest, and any other solution which would artificially limit man's freedom of exploration, navigation, and communication, should be considered as no more than a transitional arrangement, reflecting not so much long-term general community interests as short-term, transient, particularistic interests which do not express the true needs of the space age but are rather a relic of the past.<sup>97</sup>

The doubts expressed, rightfully, in the above learned opinion need to be alleviated in the process of reconciliation of the regimes of air and outer space and in the continued exercise by States of rational freedom enjoyed in outer space. One factor of optimism is, however, that ever since the above-mentioned worthy opinion was expressed the community of States have accepted unequivocally the freedoms of outer space. These freedoms are not only a part of customary law of space but are also inscribed in the very first article of the Space Treaty.<sup>98</sup> Furthermore, fresh intellectual tasks are required which would probably necessitate an establishment of some form of an international agency which could promote a harmonious relationship between the two regimes of air space and outer space.

### *C. International Specialized Agency for Outer Space*

The need for an international organization responsible for outer space activities has been discussed by leading jurists and statesmen from the earliest times of space exploration.<sup>99</sup> Widespread concern in this direction in the early stages was, however, due to a lack of a legal regime of outer space which by now seems to be well-recognized.

In the contemporary search for an international specialized agency for outer space, the major concern is to see its usefulness in reconciling the two regimes of outer space and airspace. Besides, such an agency in outer space will function as a co-ordinating agency for all the mushroom growth of activities that are taking place in outer space and are bound to increase

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<sup>97</sup> McDougal, Lasswell and Vlasic, *supra* note 3, at 359.

<sup>98</sup> Article 1 of the Space Treaty stipulates (*see supra* note 42): "The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries irrespective of the degree of economic or scientific development, and shall be the province of all mankind.

Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.

There shall be freedom of scientific investigation in outer space including the moon and other celestial bodies, and States shall facilitate and encourage international cooperation in such investigations."

<sup>99</sup> Particular mention is made by Jessup and Taubenfeld, *CONTROLS FOR OUTER SPACE AND THE ANTARCTICA ANALOGY*, *supra* note 24, where the distinguished authors traced the most appropriate arrangements which could be applied towards international controls over space activities, even suggesting formation of a Cosmic Development Agency. *Cf. also supra* note 55.

in point of time. On the usefulness of international organizations working in the international system, Hanrieder's remarks may be most aptly recalled here:

An international organization may be defined as an institutionalized arrangement among members of the international system to solve tasks which have evolved from systemic conditions. The organization therefore reflects the attributes, aspirations, and preoccupations of its members. Inasmuch as the organization represents a pattern of relations formed by the regular interaction of its members, it may be regarded as a sub-system, or *structure*, of the international system.<sup>100</sup>

It would appear therefore that the role of an international specialized agency in outer space in the present international system will be limited to its specialized functions. It would not mean any internationalization in the sense of international controls by an international agency. Drawing from the analogy of the law of the seas, an agency for outer space could conform to the International Maritime Consultative Organization (IMCO). The analogy of air law of the International Civil Aviation Organization (ICAO) could provide an example of an agency which helps in the achievement of uniformity and safety of world air transportation and development of techniques of navigation and aircraft designs.<sup>101</sup> It is submitted that neither the IMCO design of nor the ICAO objectives could be applied *mutatis mutandis* to the region of outer space. These analogies provide a framework of enquiry and help in the assessment of the problems likely to arise in outer space.

The basic division of responsibility between ICAO and an outer space agency would appear to rest on the premise that the former would continue to function as a co-ordinating international specialized agency for aircraft or spacecraft which are bound between stations located on earth. The outer space agency would, of course, be responsible for spacecraft in outer space. There could be adequate co-ordination between the two agencies so that some of the rules could be made complementary. This analogy is not uncommon since some of the "rules of the air" formulated by ICAO are applicable to the airspace over the high seas without conflict with the superjacent regime of the high seas.

<sup>100</sup> Wolfram F. Hanrieder, *INTERNATIONAL ORGANIZATIONS AND INTERNATIONAL SYSTEM*, *supra* note 49, at 272.

<sup>101</sup> It may be useful to recall here the objectives of the ICAO in detail since they seem to be most relevant to our problem: "The aims and objectives of the Organization are to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport so as to:

- (a) Insure the safe and orderly growth of international civil aviation throughout the world;
- (b) Encourage the arts of aircraft design and operation for peaceful purposes;
- (c) Encourage the development of airways, airports, and air navigation facilities for international civil aviation;
- (d) Meet the needs of the peoples of the world for safe, regular, efficient and economical air transport;
- (e) Prevent economic waste caused by unreasonable competition;
- (f) Insure that the rights of contracting States are fully respected and that every contracting State has a fair opportunity to operate international airlines;
- (g) Avoid discrimination between contracting States;
- (h) Promote safety of international air navigation;
- (i) Promote generally the development of all aspects of international civil aeronautics."

DE FOREST BILLYOU, *Air Law* 610 (1964).



In a specialized agency for outer space, it is logical that membership of the organization reflect the interests of the international community. Secondly, there has to be an adequate balance between the responsibility and control of its members. The UN Legal Committee on Peaceful Uses of Outer Space, which has achieved commendable success in drafting legal principles, reflects also in some measure the equation of responsibility and control. Moreover, its functioning is marked by new methods adopted in seeking reconciliation through consensus rather than blind voting. Indeed, one of the new legal principles incorporated in the Space Treaty is the principle of "international consultation" as a means of settlement of disputes.<sup>102</sup>

In devising the membership structure of an outer space agency and the correlation between the responsibility and control problems, the provisions of the Chicago Convention may prove beneficial. Under Article 48(b) "All Contracting States shall have an equal right to be represented at the meetings of the Assembly and each Contracting State shall be entitled to one vote." Simultaneously Article 50(b) relating to the Council stipulates that:

In electing the members of the Council, the Assembly shall give adequate representation to (1) the States of chief importance in air transport; (2) the States not otherwise included which make the largest contribution to the provision of facilities for international civil air navigation; and (3) the States not otherwise included whose designation will insure that all the major geographic areas of the world are represented on the Council. Any vacancy of the Council shall be filled by the Assembly as soon as possible; and Contracting States so elected by the Council shall hold office for the unexpired portion of its predecessor's term of office.<sup>103</sup>

Once again, it is submitted that these constitutional principles incorporated in the Chicago Convention have worked well and have provided a good example of democratic and responsible procedures for solution of global aviation problems. It is possible that some of these analogies may work well for an outer space agency.

The time is ripe to explore theoretical models for an outer space agency. Its constitutional problems can be seen within a larger ambit of the role of international organization.<sup>104</sup> The real problem is to secure the interests of

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<sup>102</sup> "... If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space, including the moon and other celestial bodies, it shall undertake appropriate *international consultations* before proceeding with any such activity or experiment. . . ." *Supra* note 42 (emphasis added).

<sup>103</sup> Billyou, *supra* note 100. Article 50(c) further states that "No representative of a contracting State on the Council shall be actively associated with the operation of an international air service or financially interested in such a service."

<sup>104</sup> See generally I. L. CLAUDE, *SWORDS INTO PLOWSHARES: THE PROBLEM AND PROGRESS OF INTERNATIONAL ORGANIZATION* vii (1964). Professor Claude remarks: "The process of international organization is a significant feature of the dynamic patterns of international relations in our time. World affairs move in many directions at once; one of the most persistent trends of the last century, and particularly of the last generation has been the movement toward the organization of international relations. The creation of multilateral institutions has become a standard response of statesmen and peoples, for purposes both intensely realistic and highly idealistic, to the challenging problems and terrible dangers of international life in an era of increasing interdependence."

small and big nations alike. Inis Claude makes the point most succinctly in relation to the United Nations:

If the World Organization is to realize its full potential as an international political agency, the States which enjoy the capacity to exercise parliamentary dominance at any given time must be restrained in their exploitation of that capacity by a sober recognition of the limitations of its genuine utility within the multistate system.<sup>105</sup>

Professor Claude deplores that "the weakness of community consensus makes it impossible to rely upon the moral appeal of majoritarianism to produce minority acquiescence in decisions."<sup>106</sup> This again demonstrates the significance of the consultation and consensus approach as being more intelligible forms of conflict resolution.

## VI. SUMMARY AND CONCLUSION

The space legal policies in the post-Apollo period, and after the achievement of the moon landing, have precipitated considerable debates among scholars and statesmen from all walks of life. Obviously these policies are of vital concern for the well-being of the entire human race. It is true to conclude that these policies and debates are a continuing process, providing at certain periods distinct shifts in major trends. The general problem of their assessment was stated so aptly by the Taubenfelds even before the achievement of the moon landing. Writing in 1964 they said, "Technologically we are already in outer space; the balance of the implications for mankind, for good or for ill, is still unclear. The wisest national and international approaches to new or heightened problems are certainly open to *study, debate, and even crusade*."<sup>107</sup>

The element of a crusade is to be directed against the selection process of evil and good of space sciences. Sir Bernard Lovell poses this question after the Apollo mission in saying, "Apollo may have a cataclysmic effect on territorial society. Some of these reactions are easy to foresee; others are buried in the future and entwined with man's own reactions to the good and evil which are contained within all new science and technology."<sup>108</sup> In the larger context of framing space policies, "morals and ethics must not lag behind science, otherwise the social system will breed passions which will cause its own destruction."<sup>109</sup> In short, in a design of space policy aspects of law, morals and politics affecting the earth-space arena are involved. There is a growing consensus in the contemporary period that, in shaping quality of human life to the extent of being "just, peaceful and creative, it is necessary to be "dependent more upon the humility with which man recognizes his limitations than upon the pride with which he views his works."<sup>110</sup>

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<sup>105</sup> *Id.* at 130.

<sup>106</sup> *Id.*

<sup>107</sup> R. F. Taubefeld & H. J. Taubenfeld, *supra* note 15, at 30.

<sup>108</sup> Sir Bernard Lovell, *supra* note 12, at 4.

<sup>109</sup> *Supra* note 32, at 450.

<sup>110</sup> See E. R. Platig, "The Future: Comments and Queries," in Taubenfeld, ed., *supra* note 14, at 172.

The first decade's policies in space were poised against great challenges of this gigantic venture in outer space. There is no cause to doubt the optimism about past or future ventures in space.<sup>111</sup> Even in the midst of international strife and conflict, the great John F. Kennedy told the Irish Parliament on June 28, 1963:

There are no permanent enemies. Hostility today is a fact, but it is not the ruling law. The supreme reality of our time is our individuality as children of God, and our common vulnerability on this planet.<sup>112</sup>

There is an awareness of sobriety and pragmatism born out of a decade's experience in space. There is also sufficient time to think as to how space policies can be viewed for greater social and economic benefits of the international community.<sup>113</sup> Above all, some of the leading statesmen of the space powers, especially from the United States and the Soviet Union, are keen to shape events of the future in this earth-space arena, towards co-operation and negotiation rather than confrontations. While making a policy towards "Modified Ballistic Missile Defence Systems." President Nixon declared recently that, "in making this decision, I have been mindful of my pledge to make every effort to move from an era of confrontation to an era of negotiation."<sup>114</sup> Prime Minister Kosygin of the Soviet Union in a message to the International Conference on Peaceful Uses of Outer Space held in Vienna in 1968 said, "While conducting research on the utilization of outer space, it is essential not to allow space to become the arena of the arms race. Outer space should become the zone of peace and international co-operation."<sup>115</sup> The Prime Minister of India, Mrs. Indira Gandhi, was optimistic about "the peaceful uses of outer space, particularly in the fields of telecommunications and meteorology, [which] promise to confer great benefits to developing nations."<sup>116</sup>

Disregarding the arms race in outer space, primarily a projection of power conflict within the terrestrial community, the role of space law in the international system can be viewed with great optimism. The uncertainty about the legal order prevailing at the time of the first Sputnik shot into outer space was removed through a viable jurisprudence whose

<sup>111</sup> Manfred Lachs poses this question of the future: "Is it really impossible to build a world in which the great resources of the universe are devoted to constructive purposes only? Is a disarmed and secure world, with the great perspectives it would open to science, only a dream?"

We must refuse to accept such a conclusion not because it would show our impotence but, above all, because it is false. History is on the side of man, and it is up to him to make it realize his great ambitions." See *The Law-Making Process for Outer Space*, NEW FRONTIERS IN SPACE LAW 29 (Edward McWhinney and Martin A. Bradley, eds., 1969).

<sup>112</sup> Quoted by Lincoln P. Bloomfield, *Arms Control and International Order*, 23 *International Organization* 637, 655 (1969).

<sup>113</sup> Cf. *supra* note 12, at 44: "In the past decade of spectacular space achievements, the rush of events and the processes of international competition flowing from national embarrassment have ruled out policy. But a dozen years after Sputnik we should have enough wisdom and experience to chart a less costly course that would provide for a more careful distribution of space tasks among the various agencies of government and a greater standardization of boosters and other space hardware so that the maximum benefits can be extracted from space technology."

<sup>114</sup> 60 DEP'T STATE BULL. 274 (1969).

<sup>115</sup> *Report of the Committee on the Peaceful Uses of Outer Space*, UN Doc. A/7285.

<sup>116</sup> *Id.* at 25. Mrs. Gandhi said that she was confident that some of the developing nations had already taken initiative in sponsoring peacetime projects such as the International Rocket Launching Station at Trivandrum in India.

main postulates in relation to space law have been directed toward the problem-solving process baser upon contextual, problem-oriented and, a multi-method approach. As McDougal, Lasswell and Reisman theorise:

The basic goal values postulated for world public order cannot of course be representative only of the exclusive, parochial values of some particular segment of the larger community, but they can admit a very great diversity in the institutional practices by which they are sought and secured.<sup>117</sup>

The end-product of the legal instrument in the first decade was, of course, the Space Treaty of 1967. Though it is too early to assess the merits of this legal document, it seems to have thus far maintained orderly relations between states. Its provisions, insofar as affecting lunar landings, have been observed scrupulously. In particular the precautions against contamination of outer space and the probable claims of appropriation of the moon, have been strictly adhered to. Most remarkable of all, the moon landings have been acclaimed as a venture of mankind as a whole.

In substance, the Space Treaty represents a balance between the rights and obligations of nations.<sup>118</sup> It is a realistic document and does not convey mere "good wishes nor a moral recommendation for the States."<sup>119</sup> As a result of the Space legal system, based on the perennial spirit of freedom of the human race, and dedicated to the unknown and hidden sources of knowledge of cosmology, the notion of humanism has acquired a new judicial status in international law.<sup>120</sup> The decade following will reflect, even more, these new trends in the earth-space system.

There may be some more legal problems of the future—of resources, settlements, etc., for which it will be necessary to exercise the same legal vision as was done in the past. It appears that there will continue to be a race between the legal order and the scientific order. As Sig Mickelson reminds, "The scientists and engineers have created devices with vast capacity to inform and to educate. It is for non-scientists and the non-engineers to create the legal, political, economic and social environment in which the devices can work."<sup>121</sup> Though it has been stated that the space legal order has worked in the contextual process, there is also need to find harmony between the normative order of law and the normative order of science, though this problem has defied solutions in the past and does not hold promise of immediate reconciliation.<sup>122</sup>

One submission that may be made is that most of the contemporary consensus on the objectivity of law or of science is based upon relativity

<sup>117</sup> McDougal, Lasswell and Reisman, *supra* note 14, at 207.

<sup>118</sup> *Supra* note 45, at 601.

<sup>119</sup> *Supra* note 11, at 61.

<sup>120</sup> *Id.* Compare also Dr. Jenks' observation that the adventures of the sixteenth century bequeathed to us the freedom of the seas; the opening up of Africa taught us to use the resources available for all nations. *Supra* note 85 at 313. The contemporary period follows the past trends where humanism and scientific spirit will abound.

<sup>121</sup> Sig Mickelson, *Communication by Satellite*, 48 FOREIGN AFFAIRS 67, 79 (1969).

<sup>122</sup> In a somewhat different context Professor Northrop cites the opinion of Eugen Ehrlich, an Austro-Hungarian sociologist of law: "Once the normative inner order of each nation is specified, then the relations between the different nations can be given with similar objectivity." F.S.C. NORTHROP, *THE TAMING OF THE NATIONS: A STUDY OF THE CENTRAL BASES OF INTERNATIONAL POLICY* 5 (1952).

and the observational angle. Therefore, the way out of the normative ambiguity is to see to the purpose of law which a great humanistic space lawyer sums up as follows: "In lowlessness on earth or in space, there is chaos, war, and destruction. In law there is justice. In justice there is peace for all men."<sup>123</sup>

The legal order in space has given legitimacy to certain types of activities or freedoms of outer space. Basically these freedoms are activities associated with the scientific investigation of manned space exploration—which may in the future include space transportation, and use of satellites for radio, television, meteorology and navigation.<sup>124</sup> These freedoms of space along with the principle of non-appropriation according to the International Law Association, are recognized principles of general international law.<sup>125</sup>

In a *res communis*, like outer space, the legal order which grants rights or freedoms to states, also imposes restraints. There are two reasons for it: First, States have agreed under Article 1 of the Space Treaty that, "the exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries . . ."; second, as Professor Falk observes, the absence of a centralized effective authority in the international system imposes self-restraint upon individual States.<sup>126</sup>

Legal restraints impose responsibilities upon states as much as responsibilities pertain to the discharge of legal obligations. In relating responsibilities of states for national security in the contemporary period, and in the light of the latest military strategic developments in the earth-space arena, there is a noticeable trend, that short of unforeseen strategic developments of the future, states are now agreeable to hunt for national security through limitations of armaments, having assured for themselves that there exists adequate mutual deterrence capacity. The "overkill" philosophy is a chapter of the past. The Space Treaty, under Article IV, has stipulated certain arms control measures although it does not connote demilitarization. The Strategic Arms Limitation Talks obviously point toward a greater sense of responsibility and mutual confidence between the two space powers, the U.S. and the U.S.S.R.

In order to isolate the regime of airspace, based upon national control, from free outer space; and in order to separate completely the functional uses of airspace for international and national commerce, and outer space for scientific exploration including benefits derived for purposes of global communication, meteorology and navigation, there is need to demarcate

<sup>123</sup> *Supra* note 10, at 342.

<sup>124</sup> Cf. G. P. Zhukov, *Tendencies and Prospects of the Development of Space Law: The Soviet Viewpoint*, *supra* note 11, at 75.

<sup>125</sup> Cited by D. Goedhuis, "The International Law Association and the Development of a Legal Regime of Outer Space," *ibid.*, at 36. Goedhuis refers to the Report of the Buenos Aires Conference of ILA in 1968.

<sup>126</sup> *Supra* note 15, at 95. Richard A. Falk, "Toward a Responsible Procedure for the National Assertions of Protested Claims To Use Space," in Taubenfeld, ed., *supra* note 14, at 95. It is recalled that Professor Falk made these observations in the context of Soviet protests over U.S. observation satellites. In the course of time, the Soviet Union also carried on similar flights and the interest of the two space powers was to avoid surprise attack.

the boundaries of air space and outer space. This decision can be arrived at only on legal and political considerations and may be a transitory boundary which would not enjoin upon states for forego permanently their territorial rights in the vertical space. The aerial highway is like the coastal harbour of the seas which need to be kept open, as before, for national and international transportation. We cannot, also, completely disregard the uses of national airspace for security and defence.<sup>127</sup> Finally, as the space activities increase, the need for an international agency for space will also increase. As G. P. Zhukov remarks:

The States explore outer space primarily on a national basis. But the vast scale and the problems of space research, and the difficulties met with, make it imperative for the States to co-ordinate and unite their scientific technical and material potentialities and resources.<sup>128</sup>

An outer space agency is logical corollary to man's continuing exploration and exploitation of space. Its main functions would seem to be the co-ordination of global activities in outer space; the co-ordination for purposes of reconciliation and smooth running between regimes of airspace and outer space; and above all it may, in the long run, act as a watchdog against fears which may ultimately prove to be groundless. Once again, it is submitted that theoretical models need to be worked out so that national needs can be adequately met through the international system envisaged. Clyde Eagleton makes a thoughtful contemplation on this problem:

International organization cannot be effective until national systems can be geared into it. The machinery of national governments was originally built with only the domestic needs of the State in view, and with no realization of the fact, now pressing heavily upon states, that domestic efforts of all sorts depend, to an increasing degree, upon situations external to the state.<sup>129</sup>

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<sup>127</sup> Cf., for example: "As regards the development of sea power, it is not the total number of square miles which a country contains, but the length of its coast-line and the character of its harbours that are to be considered." [Not only the horizontal limit of air space, but also some optimum vertical limit, in the case of the vertical pace is necessary for national defence, if the analogy from sea-power were to be considered.] See Captain A. T. Mahan, *The Influence of Sea Power Upon History, 1660-1783* (London, 1889), at 43.

<sup>128</sup> *Supra* note 110, at 75.

<sup>129</sup> Clyde Eagleton, "International Administration," in *International Government* (New York, 3d ed., 1957), 157 at 158.

## NEW FACTORS IN PAPUA AND NEW GUINEA AIR TRANSPORT\*

By H. W. POULTON†

Gentlemen:

Members of the Royal Aeronautical Society are very familiar with the contribution of Lawrence Hargrave (1850-1915) to our knowledge of aerodynamics and the principles of flight. Members such as Professor Stephens, Mr. Millicer and Mr. Ring, who have delivered previous Memorial Lectures, and Mr. Shaw of Qantas, have been responsible for important research and study of Hargrave's life and work.<sup>1</sup> I cannot contribute in this way, but I am honored to be your speaker for the 1969 Lawrence Hargrave Memorial Lecture.

In correspondence with the Deutsches Technological Museum, in 1910, Hargrave wrote:

In all those long years of work, I was urged on by the thought of the great benefit artificial flight would be to our proud and scattered species, by bringing about a knowledge of one another and so dispelling the dark clouds of prejudice which keep us at enmity. Holding such views can you wonder at endless patience? Is it not an immense reward to live and receive accounts of the stronger, better and more persevering co-workers whose names litter the history of flying?

Hargrave's hopes have special relevance in the Territory of Papua and New Guinea. From the time of the early air-lifts to the Bulolo gold fields, there has been no other country where artificial flight has been a more significant factor in giving a diverse people knowledge of one another and developing the communications necessary to establish a new nation.<sup>2</sup>

It is not possible to give a comprehensive coverage of the topic, so may I say at the outset that I seek to provide a political and factual context for expressing meaningful views<sup>3</sup> on three fundamental and topical aviation questions, viz.

1. Is the time ripe to transfer the policy and licensing functions of the Australian Director-General of Civil Aviation to a Territory Department of Transport?

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\* Speech given as the Lawrence Hargrave Memorial Lecture in 1969.

† Executive Director of Ansett Transport Industries Limited.

<sup>1</sup> See Inaugural Lecture of Professor Stephens (1956), *The Life and Work of Lawrence Hargrave: and Lawrence Hargrave, Fact and Fallacy*, W. Hudson Shaw of Qantas "Wing Tips" Vol. 7 No. 4; *Record of the Australian Academy of Science* Vol. 1 No. 3 and slide presentation of H.K. Millicer F.R.Ae.S., Hargrave Memorial Lecture 1966.

<sup>2</sup> For early aviation see A. Affleck, *The Wandering Years*.

<sup>3</sup> The views are personal to the speaker. The terms of reference of the 1969 *United Nations Transport Survey in Papua-New Guinea* (Halcrow & Partners) invite recommendations on some aspects of these questions. Its report is not yet available.

2. What is the future of the two-airline policy in the Territory and how does the prospect of self-determination affect the respective roles of the two airlines?
3. Has the existing Australian policy in respect of the negotiation of international traffic rights and the authorization of international air services, kept pace with New Guinea political and economic development?

#### CONSTITUTIONAL STRUCTURE: THE MOMENTUM TOWARDS SELF-GOVERNMENT

The Commonwealth Parliament, by virtue of Sec. 122 of the Australian Constitution, exercises sovereign power over the Territory of Papua and New Guinea, and the principal exercise of this power is found in the *Papua and New Guinea Act* 1949, as amended. Changes in the constitutional position of the Territory, therefore, require a federal act of Parliament.

Historically, Papua was transferred from Britain to Australia by Order in Council, the Commonwealth formally taking control on 1 September 1906, pursuant to the *Papua Act* 1905. New Guinea was captured from the Germans on 17 September 1914 and the *New Guinea Act* 1920 authorized acceptance of a mandate by the Commonwealth. After the Second World War, Australia entered into a Trusteeship Agreement with the General Assembly of the United Nations in respect of the Mandated Territory only, but elected to develop the two Territories as an administrative unit which would maintain the identity and status of New Guinea as a Trust Territory, and the identity and status of the Territory of Papua as a possession of the Crown. The distinction is very much in the background, but could be of great significance if secession movements affecting Papua gathered strength.<sup>4</sup>

The establishment of an elected House of Assembly in 1964 was the first significant step towards self-determination. Since that date, pressure has gradually mounted, at first through the United Nations, and more recently, from internal sources.

The month of October 1969, witnessed three significant events in the momentum towards self-Government. Mr. John Guise, elder statesman and elected Speaker of the House of Assembly, in a succinct analysis of the political issues, submitted that a presidential system rather than a Westminster style government would best suit Papua and New Guinea after independence. He went on to add:

A target date for self-government is absolutely necessary now, so that Papuans and New Guineans can devote their energies towards that end. Once self-government is achieved, the country can set its own pace for independence. Target dates for self-government would also help dispel the uncertainty and instability which the Bougainville and Rabaul multi-racial council issues

<sup>4</sup> For refinement of constitutional position see W. A. Anstey Wynes, *Legislative, Executive and Judicial Powers in Australia*, pp. 115-18; *Essays on the Australian Constitution*, edited by the Hon. R. Else-Mitchell Chap. XII, pp. 335-38, and for structure of the Administration, *Handbook of Papua and New Guinea*, Fifth Ed., p. 51. Sec. 8 of Papua and New Guinea Act 1959-1968, and Sec. 33 which provides that "No Commonwealth Act extends to the Territory unless expressed so to do."



have created, including the possibility of more cessionist movements, such as Papua breaking away from New Guinea or New Guinea from Papua.<sup>5</sup>

Mr. Guise argues that on crucial budget issues the Prime Minister and his Cabinet, under a Westminster system, would be continually defeated on financial issues so that a Cabinet system of responsible government is not possible.<sup>6</sup> To accommodate the diverse racial composition of Papua and New Guinea he favors a presidential system, with the president elected for five years by the House as the Chief Executive, and not subject to removal, "except on the unanimous vote of Parliament." The President would establish a Cabinet based on the best talent within and without Parliament, and would maintain a close nexus with Parliament through a system of Parliamentary Committees.

Apart from electing the President, the Central Parliament would appear to be no more than an advisory or consultative body. Local government and town advisory councils would form provincial governments, each with its own president and executive. The Central Government would be represented, in each province, by a Chief Secretary, who would control and co-ordinate all government departments in the province. Each provincial government would determine budgetary requirements in much the same way as the Australian States. These would be submitted to the President and Cabinet who would then submit the total requirements of all provinces to Parliament, presumably with recommendations as to the amounts to be made available to each province. The use of the amounts allocated would be debated by each provincial assembly and supplemented, as necessary, by additional finance from local taxes.

The second significant event was the publication by the Minister for External Territories, The Hon. C. E. Barnes, of a Booklet on Trade and Investment in Papua and New Guinea (issued October 1969) in which he said in the foreword:

The coconut, cocoa and rubber trees, the tea plants and oil palms, planted over the next five years will reach maturity towards the end of the 1970's when large numbers of Papuans and New Guineans will have completed a basic education and will be entering the work force. It is then that the investments of today will be seen to bear fruit and the people of Papua and New Guinea will have a secure economic base for social advancement and political self-determination.

The statement is significant because it is the first time a responsible minister has suggested a time scale for political self-determination.<sup>7</sup> The

<sup>5</sup> *Stepping Stones to Tomorrow's Papua-New Guinea*, The Australian, 7th October, 1969; See also paper by Mr. Justice Kerr, *Wanted a Constitution*, New Guinea, Oct. 1969, Vol. 4 No. 3.

<sup>6</sup> For a contrary view see H.K. Colebatch, *Problems of the Transfer of Power in Papua-New Guinea*, "I think the importance of this question is exaggerated: both systems are infinitely flexible, and statements like 'The Westminster system of government requires a strong party system' are simply not true. The Australian colonies had responsible government for half a century before the introduction of party discipline."

<sup>7</sup> Previously, in March 1968, Mr. Barnes said in Parliament, "It is the express intention of the Commonwealth to help the inhabitants of the Territory become self-governing as soon as possible and to ensure that when this aim is reached the Territory will, to the greatest extent possible, be able to stand on its own feet economically," and later answering criticism for appearing to make self-efficiency a condition precedent to self-government said, "We are not saying that self-determi-

booklet also outlines government investment policy including incentives for industry and availability of finance with an indication of the industries the government hopes to encourage. (See *infra*.)

Finally, on 10 October 1969 Mr. Paulus Arek, Chairman of the Standing Committee on Constitutional Development,<sup>8</sup> announced that the Committee had drawn up a provisional work program which envisaged visits by members to the new states of Africa and the Pacific, as well as Canberra, as guides to its thinking. Mr. Arek said that the Committee would investigate presidential and parliamentary systems as well as the entire field of relationships with Australia, including the presence of an Australian Administrator in Papua and New Guinea, the Constitution of the House of Assembly, its Ministerial member system and the Australian Papua and New Guinea Act. He also announced the appointment of subcommittees to work for the selection of a national name to replace the "top-heavy" Papua-New Guinea, and to plan a national flag and a national anthem.

Chapter VI of the Australian Constitution makes provision for the admission of new states but the possibility of the Territory becoming the seventh state, although frequently canvassed, can be dismissed in light of present day world patterns, as wholly unrealistic. The course is finally set, through a transitional stage of self-government and self-determination, to ultimate independence. The issues today are the date and terms and conditions under which sovereign power will be transferred and the sort of government, political system and relationship with Australia, which will exist after independence. The great importance for both countries to establish permanent financial, political and defense ties is self-evident.

Summarizing to this point, it is likely that the report of the Arek Committee will have been debated prior to the election in 1972 for a further term of four years of the new House of Assembly. Sweeping changes are most unlikely before that date. The four years of the 1972 Assembly will see a substantial increase in the areas in which the Assembly can make decisions capable of binding the executive. This means a significant delegation of power from Canberra. As Commonwealth grants in various forms will continue to exceed \$100 million per annum, it is logical to assume that expenditure of the funds will be carefully supervised and that the funds will be dissected and allocated in respect of different functions of government. Towards the end of the 1970's the people will have a secure base for political self-determination.

Any realistic assessment of the future of New Guinea must not only emphasize a time schedule for independence at a political level, it must also recognize the basic fact that the ultimate independence and welfare of the people of New Guinea demands a viable economic base with a spectrum of indigenous technical, managerial, administrative and manual compe-

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nation must wait on complete economic self-sufficiency. We recognize that aid must continue after self-government is achieved. But we think that there must be a reasonable balance between outside aid and internal economic resources if self-government is to be reality."

<sup>8</sup> The Committee comprises eight Papuans and New Guineans, three official Australian representatives and three Australians elected to the House. Its recommendations will be subject to ratification in the House before becoming recommendations of the House.

tence. The problems of an emerging New Guinea go far beyond widely discussed and sometimes idealistic political considerations.

While accepting the goals and the challenges involved, it would, therefore, be disastrous for the Territory if Australia were to yield prematurely to ill-informed external pressures, and the more impatient of the indigenous elite who are now emerging as a result of the rapid expansion of secondary and tertiary educational facilities. Because of these pressures, the timing of events which I have attempted to predict is likely to be earlier rather than later.

#### AIR TRANSPORT FACTS AND FIGURES

In April 1960 the government decided that TAA would take over internal and external New Guinea services operated by Qantas and that TAA and Ansett would have equal access to the trunk route Sydney-Port Moresby-Lae.

Subsequently, Ansett purchased Mandated Airlines, Ltd. from W. R. Carpenter, Ltd. with the result that the two-airline policy, by virtue of the Airlines Agreements, became automatically applicable within Papua and New Guinea. The mainland services commenced in July 1960 with a total of five DC-6B services per week. Electra services, also terminating at Lae, were substituted in August 1965 followed by Boeing 727 service in May 1967. The Boeing was specifically selected because of its suitability for the long-range Melbourne-Perth, Sydney-Darwin and Sydney-Port Moresby routes.

New schedules, effective October 1969 provide twelve Boeing services, supplemented during peak periods by as many as twelve Electra and DC-9 specials per week. In addition, both airlines introduced a second Cairns-Port Moresby F.27 frequency. Since 1960 there has been a remarkable increase in capacity and frequency as well as quality of service. Latest statistics indicate that 95% of arrivals in the Territory are by air.

Due to the operational limitations of Lae Airport, the Boeing services terminate at Port Moresby. This fact has favorably altered the entire pattern and standard of internal New Guinea operations. While denying passengers pure jet services between Port Moresby and Lae, the transfer of traffic from that sector to internal services has made it commercially feasible for the internal operators to develop a complex pattern of F.27 services to all ports capable of taking the F.27. The F.27 timetables are necessarily geared to the Boeing 727 timetables with F.27 flights distributing the through traffic. These aircraft proceed in parallel to Lae and then bifurcate to Rabaul and beyond and to Madang and beyond.

A direct Port Moresby-Rabaul flight has also been introduced. The F.27 aircraft, in fact, provide a change of gauge in the trunk route system and must operate under V.F.R. conditions, because of the total lack of night-landing facilities except at Port Moresby. By selecting the most appropriate day, it is possible to complete a journey from the extremities of New Guinea to all capital cities, or vice versa, within one day, thus avoiding

stop-overs at Port Moresby or elsewhere, e.g. Kavieng-Rabaul-Port Moresby-Sydney-Perth.

This junctioning of Boeing and F.27 aircraft causes congestion at Port Moresby where there can be two Boeing 727 and seven F.27 aircraft loading simultaneously. Projected extensions to Port Moresby passenger terminal will cure this situation. On 5 October 1969 each airline introduced a third F.27 and it is planned to introduce a fourth F.27 by June 1970.

If traffic growth continues it is possible that by 1972, the Fokker Fellowship F.28 will be introduced. This is the only pure jet of suitable range and pay-load capable of using most F.27 New Guinea aerodromes. By 1971, the DC-3 will have been retired from all regular passenger services. It will continue in service, however, as a charter aircraft for freight and non-scheduled passenger flights. In January 1970 the Series 300 Twin Otter, with the improved PT 6-27 engines will replace both the Series 200 operated by TAA and the Piaggio P166 operated by Ansett/APNG in the Southern Highlands for almost a decade.

Papuan Airlines Pty., Ltd. (Patair) appear to have been impressed by the popular song, "One is the loneliest number." Patair has operated two Aztecs, two Piaggios, two DC-3, two Pilatus Porter R6B, two Skyvan SC7 and two Navajo PA 31s.<sup>9</sup> It has two principal shareholders, two hotels (Gateway and Tapini), recently employed two indigenous commercial pilots, applied for two international routes, operates throughout Papua and competes with TAA at main Papuan traffic centers under a mini two-airline policy. As the private enterprise airline in Papua it has proved an effective and viable competitor.

There are two principal charter operators, Territory Airlines, based at Goroka, and Aerial Tours at Port Moresby. Both have been granted approval to operate scheduled services over low density traffic routes without the necessity of holding an airline license. Including the airlines, there are twenty operators employing some 90 aircraft, licensed for charter operations. The charter operators are an essential part of the New Guinea transport scene and perform many tasks which are not suitable for the equipment of the regular airlines.

The Missions are major operators of light aircraft and several hold commercial charter licenses. Other charter operators have complained that the Missions compete on a differential cost basis and divert traffic from the commercial operators. The diversion, however, would not be significant in relation to the enormous task performed by the Mission in developing and servicing otherwise inaccessible areas. The more vocal complainants against Mission activities are worse sinners themselves when it comes to trespassing on regular public transport routes.

Currently, freight growth is at the rate of 7% compared with 20%

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<sup>9</sup> Fleets of other operators in Papua and New Guinea (December 1969) were:

1. TAA—3 F.27, 3 Series 300 Twin Otters, 9 DC-3.
2. Ansett-APNG—3 F.27, 2 Series 300 Twin Otters (option 3rd), 8 DC-3, 2 P166.
3. TAL—17 Cessnas (various types), 2 Beech 55.
4. Aerial Tours—2 Cessna 336, 3 Cessna 206, 6 Britten Islanders, 3 Beech 55.

passenger growth. Government business and officially sponsored traffic is estimated to provide about 7 million dollars revenue of which 60% is paid to the airlines representing an estimated 40% of their total revenue. The following table sets out traffic statistics (D.C.A.) for the last two years.

	1967-68	1968-69	% Increase
Hours flown	25,215	29,644	+ 17.5%
Passengers embarked	244,000	284,000	+ 16.4%
Passenger miles	55m.	61m.	+ 18.7%
Freight (tons)	4,989	5,315	+ 6.6%
Mail (tons)	900	933	+ 3.7%

The DHC.4A Caribou was introduced in 1965 by Ansett/APNG for freight distribution from Madang to the Highlands. This was coupled with expansion of freight facilities at Madang and also a sophisticated palletised loading system adapted to the Bristols already operating and to two Skyvans,<sup>10</sup> ordered in 1966, (but not delivered due to failure of its power plant to meet guaranteed minimum performance standards).

The Caribou operated until early 1969 and performed an important role for the administration, especially in the movement of awkward cargo, but it incurred large operating losses because of inadequate utilization. This was partly due to the application of mainland performance standards which gave no recognition to its STOL characteristics. Such concessions as were granted were disappointing to the operator. A more significant factor was the successful construction of roads into the Highlands.<sup>11</sup>

While air transport has preceded road transport throughout the territory, aircraft of the type suitable for operating from local aerodromes generally cannot compete successfully with road transport. Official policy will be increasingly oriented to surface communication, not only because it is cheaper for freight, but also because it provides, at this stage of development, greater scope for direct indigenous participation in the provision and operation of transport services.

As a first step towards establishing a transport department, the appointment in 1966 of a Co-ordinator of Transport responsible to the administrator recognizes this fact, as well as the importance to the territory of coordinating the divisions of land, sea and air transport.

#### LEGISLATIVE FRAMEWORK OF AIR TRANSPORT IN PAPUA AND NEW GUINEA

Section 2 of the *Air Navigation Act 1920-1966* provides that, "This Act extends to every Territory of the Commonwealth." Section 17(p) of the

<sup>10</sup> The Skyvans were subsequently re-engined with Garrett engines. The two currently operated by Patair are performing successfully.

<sup>11</sup> See Report of Iverson Mission 1964, International Bank for Re-construction and Development, esp. Chap. 5 and the report of the 1969 United Nations Transport Survey (when published). The main road is Lae-Mt. Hagen via the Kassim Pass-Kainantu-Goroka-Daulo Pass (9,000 ft.) to Chimbu, the most densely populated area, thence Wghi Valley and Mt. Hagen. There are feeder roads to Mendi, Wapenamanda and Wabag. The proposed Madang-Mt. Hagen road will be equally significant and will radically change the pattern of freight distribution to the Highlands. There is a planned road between Madang and Lae which presently terminates at Usino and also roads between Lae-Bulolo, Popondetta-Oro Bay and Wewak-Maprik etc.

*Acts Interpretation Act* 1901-1967 provides that "Territory" includes any territory governed by the Commonwealth under a trusteeship agreement. Any change in this position, therefore, requires legislation of the Federal Parliament which would inevitably involve a full scale parliamentary debate of wider Territory issues.

The Act and Regulations implement the Chicago Convention on International Civil Aviation and together provide a comprehensive code of laws to ensure the safety, regularity and efficiency of civil air navigation in all its aspects.

The Director-General is the statutory licensing authority, and in that capacity, exercises wide powers over all safety aspects. Under Regulation 329A he may, by notice in Air Navigation Orders, exempt such types or categories of aircraft as he specifies from compliance with such of the regulations as he sees fit, and may impose such conditions in substitution for a regulation as he considers necessary in the interests of safety. This wide dispensing power, inserted in 1956 to regularize existing practices, has been of particular relevance in the Territory where, for example, it gave legal backing for the interim New Guinea operating criteria, which recognized that in developing areas it may be necessary to move progressively to optimum standards of operation.

In addition, Part XIII of the Air Navigation Regulations vests the Director-General with power to license air service operations which are classified as private, aerial work, charter and regular public transport. Under Regulation 199 the Director-General has an unfettered power to grant or refuse licenses for territorial services and to attach whatever conditions he considers appropriate. This contrasts with intra-state services, where he is confined to matters concerned with safety, regularity and efficiency of air navigation and to no other matters and interstate services where, because of Section 92, he is limited to safety considerations.

There are two other licensing provisions of considerable importance. Under Regulation 203, if circumstances so warrant, the Director-General may exempt a person who holds a charter license, and who proposes to operate a service which would constitute a regular public transport service, from the necessity of obtaining an airline license subject to such conditions as the Director-General considers necessary. Territory Airlines and Aerial Tours conduct services under this Regulation.

Regulation 197(2) provides that a charter license shall not be authority to engage in charter operations on two or more occasions within any period of four weeks, over a route or section of a route over which a scheduled service is operating, but the Director-General may specifically authorize the holder of such a license to engage in such operations, subject to such of the conditions applicable to the scheduled services as he considers necessary. The extent to which scheduled operators are entitled to protection under this Regulation is an area of major contention. To meet public needs and convenience, there have been very liberal special authorizations.

In a formal statutory sense, the Director-General, subject to the Minis-

ter's directions, and to certain contractual undertakings by the Commonwealth, therefore, has total authority over both the policy and safety aspects of civil aviation in the Territory of Papua and New Guinea, which he exercises through a Regional Director with wide delegated powers particularly in the safety field. Because of political evolution these powers are now being exercised in progressively closer consultation with the Administration and its Coordinator of Transport.

The *Airlines Agreements Act 1952-1961* approves the 1952 and 1961 Civil Aviation Agreements both of which apply and extend the two-airline policy to services between the mainland and New Guinea and within the Territory. The recitals of both the 1952 Agreement and the 1957 Agreement (the latter approving the acquisition of A.N.A. by Ansett Transport Industries, Ltd.) refer to "air services within Australia" and it is at least arguable that the agreements did not originally extend to the external territories of the Commonwealth. Any doubt, however, is removed by the 1961 Agreement, Clause 10, which requires the Rationalization Committee to review, in light of prescribed criteria, certain matters in relation to air services within Australia and the territories, between Australia and the territories, and between the territories. Clause 23 defines the territories "as territories of or administered by the Commonwealth" which clearly includes trust territories and in passing, Cocos Island, Norfolk Island and the Antarctic.<sup>12</sup>

Unless extended, the Airlines Agreements remain in force and bind the Commonwealth, the Commission and the Company, until 18 November 1977, so that, subject to any fundamental change involving transfer of sovereignty, the legal effect of these agreements is that the two-airline policy will continue to be a dominating factor in internal territory air transport until at least that date.

In this respect the most important adjunct to the two-airline policy is Part IV of the *Airlines Equipment Act 1958* which provides for the rationalization of fleets. By virtue of Clause 7(1) of the 1961 Airlines Agreement, the provisions of Part IV now remain in force, except in respect of aircraft of less than 20,000 pounds all-up weight, until the expiry of the Airlines Agreements. Under the Act, the Minister determines the aircraft capacity necessary with respect to future specified periods, currently six months, to perform the total estimated traffic task on competitive and non-competitive routes.

The two airlines are permitted to acquire capacity necessary to perform half the competitive task plus their respective non-competitive tasks at optimum revenue load factors on each route, due considerations being given to the interests of the public and the maintenance of a proper rela-

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<sup>12</sup> For decisions of Rationalization Committee affecting the Territory, see DCA Annual Reports, 1963-1969; Refs. 4 and 14 (No. 4 re-opened) Services between the mainland and Papua-New Guinea; Ref. 19 New Guinea internal services; Ref. 20 Carriage of Port Moresby-Lae traffic on aircraft used on TAA Lae-Honiara services; Ref. 21 Lae-Rabaul services; Ref. 22 Fare and freight rates on internal services; Ref. 40 Capacity, on Lae-Goroka-Mt. Hagen route; Ref. 53 Port Moresby-Lae-Rabaul services; Ref. 55 Application by Ansett-APNG for equal access to ports in New Britain, Bougainville and Honiara.

tion between revenue and costs. The Minister currently makes a completely separate determination for Papua and New Guinea which is published in his Annual Report to Parliament, then this determination is the basis on which the two domestic airlines acquire or dispose of equipment. As on the mainland, implementation of the determination is ensured by control of aircraft imports under the Customs (Prohibited) Import Regulations.

#### DIRECTOR-GENERAL V. CO-ORDINATOR OF TRANSPORT

At some point in the progress towards self-government and ultimate independence, the administration of both the policy and safety aspects of civil aviation will be transferred to the local administration and become subject to the will of the local legislature. The House of Assembly recently adopted, by a decisive majority, a resolution<sup>18</sup> recommending the appointment of a Commission of Enquiry to examine all aspects of the economic regulation and licensing of air transport, with particular reference to the application of the two airline policy and with a view to the direct exercise of these functions by the administration. It is unlikely that the recommendation to appoint a Commission will be implemented at the present time.

The provision and operation of aerodromes and air navigation facilities and the regulation of safety involve many complex skills and great expense. Policy making, on the other hand, is a function of power. In one sense it is more important than the technological aspects of air transport since the decisions of the policy-maker control and dictate technical development. It is also a relatively inexpensive function, and since there are no defined qualifications for the role, it is not surprising that there are strong pressures outside the administration, not necessarily supported by the administration, to take over immediately the policy aspects and licensing aspects, but remarkable silence in respect of the provision of facilities and the regulation of safety.

An official member of the House of Assembly presenting a composite view of the administration and the department tabled a paper which analyzed objectively the issues involved in the resolution. The following points in the paper are significant:

1. When it is able to do so, there is no reason why the Administration should not take over the complete functions of the Department.
2. It would not be meaningful to take over only some of the Department's functions. These functions are closely integrated. Separation would result in administrative complexity and inefficiency.
3. Because the Department of Civil Aviation regards personnel in Papua and New Guinea and Australia as part of the same service, recruitment of skilled technical personnel on a rotation basis is facilitated.
4. The Department has been instrumental in the training of indigenous per-

<sup>18</sup> H. of A. Debates 24 July 1969, Vol. 2, No. 5 at p. 1304. The pidgin version of the resolution reads: "Dispella Haus i askim Administrator long ting ting long makim wampela Commission (olsem komiti) long luk luk insait long ol lo (law) long bosim na givim licence long ol balus no long luk luk long kain work ong dispela "Two Airline Policy" insait long Teriteri long Papua na New Guinea na long luk luk bainbai Administration iet i bosim dispela na i ken askim D.C.A. sapos Administration i laik."



sons in many technical areas, including pilots, and its staff of 1,250 includes 800 indigenes.

5. In 1968-69 it had a cash out-lay of 1.6 million dollars on capital works and operating expenses exceeding 4 million dollars.
6. There are 197 aerodromes in the territory under the supervision of the Director-General and 185 licensed aerodromes, 20 navigational aids, including 1 I.L.S., 6 ATC centers, 6 flight centers, a modern airport fire-fighting organization, while it controls flight crew standards for 562 current pilot licenses and exercises airworthiness control over 160 aircraft based in the territory.

During the early post-war period it was impracticable to apply normal mainland standards in the territory, and special New Guinea operating and performance standards were devised which were, in many cases, less stringent than those in force on the mainland. In January 1965 the Director-General gave notice of intention to extend mainland standards with the object of substantially attaining their adoption throughout the territory. A careful examination was made of aerodromes which did not meet these standards, and in conjunction with the Administration a program of improvement was introduced. The standards have now been met except in a few cases where concessions were essential because of the physical characteristics of aerodromes serving vital traffic centers such as Rabaul and Aropa or the work involved was not justified in light of alternative transport services (i.e. light charter aircraft and new roads).

Airline maintenance and flight crew standards now conform in all essential respects with mainland standards. There has been a rapid transition in the light aircraft field from single engine operations to more sophisticated twin-engined aircraft while the F.27, Series 300 Twin Otter and Skyvan aircraft, operated by the airlines, are the most suitable aircraft available for scheduled operations under territory conditions.

The department has, therefore, made a formidable and impressive contribution to the territory in terms of expertise and expenditure, and the discharge of Australia's obligations under the Chicago Convention to implement as far as practicable international standards and recommended practices.

While accepting that the control of civil aviation in all its aspects will and must ultimately be transferred, the immediate question is whether the control should be transferred piecemeal. In my submission it should not. In addition to adopting the reasons given in the House of Assembly may I draw an analogy from the history of Federal-State aviation relations on the mainland. Without detailing the constitutional reason,<sup>14</sup> in 1936 all states passed uniform Air Navigation Acts applying as state law the Commonwealth Regulations applying from time to time within the territories of

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<sup>14</sup> See Richardson *Aviation Law in Australia (1964-1965)* 1 FED. L. REV. 242. The United Kingdom Board of Trade White paper, Cmnd. 4213, on *Civil Aviation Policy* presented to Parliament November, 1969 also stresses the inter-relationship between the economic operational and technical regulation of air transport and says (para. 92): "A single body with responsibility over this whole field would be in the best position to form coherent judgments both on the activities of individual airlines and on the developments which will best serve the national interest in this rapidly expanding industry."

the Commonwealth. Under Section 122 of the Constitution the Commonwealth has plenary powers with respect to its territories.

Since the Commonwealth regulations applying in the territory included control of the policy aspect of licensing, most states in different ways legislated to retrieve control of this aspect of licensing. In the 1964 Airlines of New South Wales litigation the High Court determined as a question of fact that the Commonwealth power to control the safety, regularity and efficiency of air transport necessarily included power to require a federal license before any person could engage in intrastate air transport or otherwise use controlled air space. The decision recognizes that state laws may validly require, in addition, a state license, but this really amounts only to a power of veto and does not permit a state to authorize positively intrastate operations.

These reasons in a practical and non-legal sense are equally valid in the territory, and the safety and operational regime established in the territory dictates that the Director-General, for so long as he is directly responsible for these matters, must also be able to determine who may use controlled air space, aerodromes and facilities as well as the conditions of use and the types of aircraft which may be imported into the territory. It may be assumed that the powers would be exercised with due regard to the views of the administration and the Coordinator of Transport, but contrary to the implications of the resolution, the Director-General must retain the paramount authority over all aspects of air transport until the territory assumes the total responsibility. Even when this happens, Australia, of course, will be expected to play a major role in the technical and operational field for many years thereafter, but it will be a different role. It will be the role of providing technical assistance on behalf of the responsible authority.

#### THE FUTURE OF THE TWO-AIRLINE POLICY

Unless independence is achieved earlier, there is no doubt that the two-airline policy will run its course in the territory until the date provided in the Airlines Agreements and approved by the Federal Parliament, namely 18 November 1977. The transfer of the Director-General's powers over licensing of air services to a Department of Transport prior to that date would not alter this conclusion. The Airlines Agreements would not be affected. They would still bind the Commonwealth, TAA and Ansett Airlines. The Rationalization Committee would still function in respect of air services within the territory under the coordinator, with a right of appeal to the arbitrator.

The implementation of rationalization decisions presupposes that the Licensing Authority (being subject to the directions of the Minister who is the Commonwealth for the purpose of the Agreements) will give effect to rationalization decisions whether of the coordinator or arbitrator. While these functions are performed by one person presently, we have a comfortable position in which the airlines can assume that the coordi-

nator and the director-general will treat "each other" with the greatest respect. Given proper consultation it is unlikely that a separate Papua and New Guinea licensing authority would act inconsistently with a decision reached in pursuance of Agreements which have the imprimatur of the Federal Parliament.

Long before the Airlines Agreements expire there will be full discussion concerning the future of internal air services, and already three possibilities have been canvassed:

1. Establishment of a New Guinea Government-owned airline or the acquisition by the Administration of a controlling interest in an existing airline.
2. The emergence of additional airlines which will compete with or supersede one or both of the two major airlines.
3. The extension of the two-airline policy with appropriate adaptations.

Of these, the least realistic are the establishment of a government airline by the administration or its acquisition of a controlling interest in an existing airline. I think both can be dismissed. Withdrawal of TAA and Ansett from the territory would involve the replacement or acquisition of more than 12 million dollars worth of aircraft and fixed assets. With a budget during the next ten years requiring at least one hundred million dollars per year as direct grants from the Commonwealth or other sources, and an enormous program of expansion in health, education and public utilities, it is inconceivable that the House of Assembly would give support to diverting funds of this magnitude to take over the provision of services already available.

TAA and Ansett now employ more than 500 Europeans and about 600 indigenes within the territory. Their investment in aircraft at depreciated value exceeds seven million dollars. Looking to the future, one Fokker Fellowship F.28 would cost more than three million dollars.

Under industrial awards, accommodations must be provided, and one airline alone owns more than eighty houses of average value of 20,000 dollars together with single men's quarters worth 200,000 dollars, and has just called tenders for a 200,000 dollar hangar and workshop extension at Madang. The combined investment in aircraft and fixed assets already exceeds twelve million dollars. Profits from internal airlines in New Guinea because of low aircraft utilization due to V.F.R. operations, the obligation to provide accommodation, higher fuel costs etc., are extremely marginal, and the investment is justified only because of the volume of on-carriage between Port Moresby and the mainland. Competition for this on-carriage has given a major impetus to aviation investment in the territory, and is a major factor in maintaining the high standard of internal services.

The second possibility is the emergence of additional airlines superseding either, or both, TAA and Ansett. TAL and Patair have both publicly staked claims to be the territory airline after independence. They both see some magic in being locally owned. They both perform with efficiency important roles and their aspirations cannot be dismissed. Their first hurdle is that routes in the territory will not support additional airlines, and the

capital necessary to displace the major airlines could only come from outside sources thus making these operations also dependent upon external finance. Whether sufficient risk capital could be attracted is another question.

The third possibility is the extension beyond 1977 of a two-airline policy with a less formal structure and appropriate modifications. This, in my view, is by far the most likely sequel, but both airlines have peculiar problems.

TAA is an instrumentality of the Commonwealth which is authorized, among other functions, to operate services to and from and within the territories of the Commonwealth. This authority, insofar as it embraces services within Papua and New Guinea would, therefore, cease immediately if Papua and New Guinea cease to be territories of the Commonwealth. It would, however, be well within the Commonwealth external affairs power to amend the *Australian National Airlines Act 1945-1966* so as to authorize the operation of such services to give effect, for example, to an agreement between the two countries. The major problem facing TAA is that it will always be an Australian Government airline, and there seems to be no method by which it can permit local participation in its equity capital, a course open to all other airlines in the territory.

Ansett/APNG is a wholly-owned subsidiary of A.T.I. registered under the Territory Company Ordinance with a local board of directors reporting to A.T.I. through an executive director. One difference of potential significance is that TAA staff are employees of the Commission, whereas Ansett/APNG recruits its staff locally, and they are employees of a locally incorporated company. This is a legacy from the purchase of Mandated Airlines, Ltd.

A major problem area facing both airlines is the industrial pressures of Australian unions to establish better than mainland wages and conditions in a country which, in the long run, may not be able to sustain a fare and freight structure based on the mainland economy or the high standard of aviation service to which it has become accustomed. The ability of the smaller airlines to resist unreasonable industrial pressures is perhaps, in the short run, their greatest strength.

As indicated earlier the Minister's Booklet on Trade and Investment in New Guinea issued 9 October 1969, outlines the Government's investment policy including incentives for industry, availability of finance, and an indication of the industries the Government hopes to encourage. In particular, the Government would, as a general rule, regard as desirable, proposals which:

1. "Provide opportunities for significant local equity participation particularly in projects involving the exploitation of natural resources."
- The legislation providing for the Bougainville Copper Project expressly reserves 20% of shares for the ultimate benefit of the indigenous population. TAA as an Australian Government instrumentality has no scope for this sort of action, but it is clearly available to other airlines.

2. *"Make provision for employment and training opportunities for local people."*

Both airlines are now extremely active in this field. They employ more than 600 indigenous staff, conduct advanced staff training schemes, and are contemplating financing the training in Australia of an increasing number of indigenes for employment in the Territory. In the past, lack of indigenes with adequate secondary or tertiary training has inhibited this program but, in the future, the output from technical institutions and schools should supply recruits for such positions as freight clerks, reservations officers, and more responsible positions. The airlines also co-operate with the Institute of the Higher Technical Education in the training of indigenes for positions requiring technical qualifications. A subsidy scheme is now available for employers willing to provide vocational training for indigenes.

3. *"Involve maximum processing of products in the Territory."*

Both airlines maintain major maintenance bases at Lae and Madang, respectively, and, therefore, reasonably satisfy this requirement.

4. *"Involve the enterprise in the provision of facilities such as roads and wharves."*

While the provision of aerodromes and navigational facilities will remain the responsibility of the Department and Administration, there is some scope for the airlines to improve terminal and freight facilities, and both airlines already have major freight installations at strategic points in the Territory.

The long term survival of the two-airline policy within New Guinea could well depend on the success with which the airlines are able to satisfy the criteria suggested by the Minister.

#### THE TERRITORY'S INTERNATIONAL AIR SERVICES

International air services are conducted in pursuance of bilateral air services agreements negotiated by Governments. Traffic rights are exchanged on a reciprocal basis. In Australia the Department of Civil Aviation, in association with the Department of External Affairs, negotiates Australian Air Services Agreements. The Australian policy is largely centered around the commercial interests of Qantas.<sup>15</sup>

While Australian Air Services Agreements usually permit designation of more than one national carrier by both contracting states, current Australian policy is that there shall be one and not more than one Australian operator of international air services, namely Qantas. The policy has brought rich dividends for Australia. We have a great national carrier operating round-the-world services of unexcelled standard and of increasing potential in commerce and tourism and vital for defense. So far as the long haul routes are concerned, the policy, under foreseeable circumstances, is unassailable.

However, in the peripheral area of regional services rigid application of

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<sup>15</sup> For statement of this policy emphasizing priorities refer Sir Donald Anderson (*Aircraft* July, 1969)—"First, the economic viability and profitability of our own carrier, Qantas, is a vital consideration. Then there are External Affairs considerations concerning our political relationship with other countries, trade considerations, immigration factors and the increasingly important tourist promotion factor. D.C.A. effects the required liaison with other interested Departments, and with our own international carrier, Qantas. Where necessary, the Minister consults his colleagues before determination of an Australian "brief" for air agreement negotiations."

the policy, even under today's conditions, is indefensible. Dramatic changes in aircraft performance and capacity, and the increasing commercial advantages of fleet standardization, have already produced uneconomic or anomalous situations in the fringe area between domestic and trunk route international operations. It is necessary for regional routes to be allocated in the future on the basis of aircraft suitability and the commercial, tourist, and operational relation of the services with domestic services rather than on the basis of an unreal classification of services as being either domestic or international. Indeed, the Commonwealth Government clearly recognized the validity of this approach when it decided in 1960 that the domestic airlines would replace Qantas between the mainland and Port Moresby and within the Territory.

The domestic airlines have now standardized mainland fleets around the Boeing 727, DC-9 and F.27/F.28 aircraft and, as a result, have yielded numerous routes to commuter operators rather than further diversify fleets with the smaller units necessary to operate to ports not suitable because of traffic density or aerodrome limitations for jet or F.27 operations. Conversely, domestic short haul medium range jets are more suitable for regional services than the larger aircraft operated by Qantas. Routes to Norfolk Island (in fact a domestic service), terminating services to Auckland, Christchurch, Wellington, Nadi, Noumea, Timor and Bali and between New Guinea and Guam even at this stage clearly fall into this category.

The following chart, (Fig. 1) indicates, for selected aircraft types, the relationship of aircraft range and normal payloads. The range, in nautical miles, of aircraft operated by the domestic airlines is shown in the shaded area.

By reference to the map, (Fig. 2) showing the principal regional routes radiating from Australia and New Guinea it will be seen that, *prima facie*, all these regional routes are more suitable for aircraft of the type currently operated by the domestic airlines.

This, of course, over-simplifies the position. Other factors, besides range and pay-load, are vital, including existence of navigational facilities, the standard of aerodromes, availability of suitable alternates, traffic density, and traffic flow.

With the pending re-equipment of Qantas with Boeing 747B and supersonic aircraft, it will be necessary to decide whether Qantas should dissipate its resources on the medium-range regional operations or whether they should be operated by the domestic airlines which are, in most cases, more appropriately equipped, having regard to range, frequency, traffic density, and ability to integrate the services economically into their main pattern of operations.

Another policy which is being actively canvassed is that certain smaller Commonwealth airlines currently operating in pool or other commercial association with Qantas should take over an increasing share of regional services to and from Australia as part of these arrangements, leaving Qantas to operate the long haul international routes. As this would have



the effect of handing over Australia's regional services to foreign airlines (albeit in association with Qantas), it is doubtful whether such a solution, once exposed to critical examination, would be politically acceptable.

As indicated, the principal obstacle to a proper allocation of regional routes between Qantas and the Australian domestic airlines is the inflexible and unaccommodating one-airline policy applying in the international field. Sir Donald Anderson, the undisputed dean of negotiators of traffic rights, has highlighted one advantage of the present rigid dichotomy. He said:

One factor which has to date operated in Australia's advantage in international air negotiations is that we have only one flag carrier. Unlike some countries, such as Canada, the USA and the UK, which have more than one carrier, we have been able to negotiate without the complication of conflicting and vested airline interests on our side of the table.<sup>16</sup>

Simplification of the formal negotiating process is not, of course, itself, a cogent reason justifying a one-airline policy embracing both regional and trunk route international operations.

With these general observations in mind, may we now turn to the specific problem of New Guinea international air services. Australia has bilateral air transport agreements or arrangements with some thirty countries. An analysis of published agreements indicates that only the United Kingdom and Indonesia have been granted rights to serve points in the Territory of Papua and New Guinea which, therefore, has no bank of traffic rights to draw upon when it becomes self-governing.

This contrasts with the policy of the United Kingdom over the past twenty years which has traditionally used the traffic rights of its colonies to achieve traffic rights for BOAC, its long haul national carrier.<sup>17</sup> At the same time it has accepted a responsibility to foster local airlines to provide regional services which meet specific regional requirements such as the East African Airways, British West Indian Airways and Cathay Airways, and has negotiated vigorously to achieve a viable network of traffic rights for these regional operators, if necessary, at the expense of BOAC. It also contrasts with the United Kingdom policy of developing British European Airways as a powerful regional operator serving many short haul routes that are also served by BOAC as sectors of their long haul operations.

New Guinea is currently served by the following international operations:

1. *Australia-Port Moresby-Manila-Hong Kong*

Qantas introduced a weekly Boeing 707 service in September 1967

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<sup>16</sup> *Id.*

<sup>17</sup> For example, when Singapore was a colony the United Kingdom obtained limited rights for BOAC to carry Australian domestic traffic between Sydney and Darwin as part of the *quid pro quo* for Singapore-London rights for Qantas. These BOAC rights were not withdrawn after Singapore became independent. A more remarkable United Kingdom success was the grant by Australia of rights for BOAC to carry Australian domestic traffic between Perth-Sydney and Sydney-Brisbane as part of the *quid pro quo* for Hong Kong-London rights for Qantas. This grant of rights over an internal network to a foreign carrier is without recent precedent and is difficult to reconcile with the Commonwealth obligations under the Airlines Agreements to ensure "that there shall be two and not more than two operators of trunk route airline services within Australia."



which increased to twice weekly in October, 1968. It is not permitted to pick up passengers travelling only between the mainland and Port Moresby (loosely termed "catotage") but under arrangements with the domestic airlines may carry domestic freight during peak periods. At present there are no reciprocal Philippine or United Kingdom services. Currently the Boeing 707-338 all-up weight is restricted at Port Moresby to 260,000 pounds, resulting in a significant payload penalty. Following proposals by Qantas to operate the Boeing 747B aircraft through Port Moresby in the 1970's, the Commonwealth has now increased the scope of its investigations into the multi-million dollar improvements necessary at Port Moresby (Jackson's Airport) resulting in some delay before the scheme can be submitted for Government approval.<sup>18</sup>

There is also mounting pressure for a further international airport capable of handling jet aircraft at Madang, Lae or Rabaul, but recent Government statements indicate that because of the cost in relation to other more pressing capital works, this cannot be given serious consideration for quite some time.

## 2. *Port Moresby-Honiara*

TAA operates a weekly F.27 service between Port Moresby and Honiara under charter to Qantas. Originally this was operated via Munda and Yandina in the British Solomon Islands Protectorate (B.S.I.P.) which are now omitted following a recent decision restricting TAA to the carriage of international traffic between points in B.S.I.P. It is supplemented by a weekly DC-3 service between Rabaul-Buka-Kieta-Munda-Yandina and Honiara. In March 1969 Fiji Airways commenced a reciprocal Honiara-Port Moresby service, operated with HS 748 twin turbo prop aircraft with seats for 40 passengers, thus extending its existing routes between Fiji-New Hebrides-Solomons-Gilbert and Ellice Islands-Nauru-Tonga and Western Samoa.

Fiji Airways Limited is a company incorporated in Fiji in which Qantas, Air New Zealand, BOAC and Fiji Airways originally held all the shares. The Governments of Tonga, Nauru, and Western Pacific High Commission are now represented on the Board as shareholders and, the Western Samoan Government is negotiating to become a shareholder following the establishment of commercial ties between Fiji Airways and Polynesian Airlines, the Western Samoan company.

Ansett/APNG has made a number of applications for access to Honiara. For example, in Reference 55 "Access to Bougainville-Honiara Services" it sought *inter alia*, a decision of the Rationalization Committee for equal access with TAA to Honiara claiming that TAA was the real operator and that the charter arrangements with Qantas were a subterfuge. Clause 10 of the Airlines Agreement of 1961 confines the competence of the Committee to certain specified matters in relation to air services within Australia and the Territories and between the Territories and "any other matters affecting the efficient and economical operation of those air services."

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<sup>18</sup> D.C.A. Annual Report, 1969.

Assuming this relationship could be established, the primary issue was, therefore, whether the operation of an international service with full traffic rights between domestic sectors came within the ambit of the Committee's competence.

The relevant Air Transport Agreement with the United Kingdom permits multiple designation<sup>19</sup> but the Company said that if existing policy precluded this, it would not object to sharing the operations with TAA under a similar charter arrangement with Qantas. A favorable decision of the Co-ordinator would not necessarily have determined the matter, but it would have been highly persuasive since the Commonwealth is under a contractual obligation to give effect to the decisions.<sup>20</sup>

The Co-ordinator found, however, that the air service between Port Moresby via intermediate points in the Territory and Haniara does not come within the jurisdiction of the Committee, being an international route covered by a bilateral Air Transport Agreement between Australia and the United Kingdom under which the two countries concerned have each designated an operator on that route.

The dilemma which the Co-ordinator skillfully side-stepped is that the so-called DC-3 international service exercises traffic rights between several points in Australian territory, and is, in fact, a domestic service from the point of entry although formally operated within the Territory by Qantas using TAA as its agent. There has been no appeal from the Co-ordinator's decision.

### 3. *New Guinea-West Irian*

TAA, again under charter arrangements with Qantas, which raises the same issues as the Honiara services, operates a weekly service between Lae and Djayapura in West Irian. Originally this service was operated under the Air Services Agreement with the Netherlands and since 1966 under provisional arrangements with the Indonesian Government which were recently formalized in an Air Services Agreement dated 7 March 1969. Under this agreement designated airlines (of each country) are authorized to operate reciprocal services between Port Moresby and Merauke (just west of the Papuan border) and Lae and Djayapura. Indonesia has designated a locally based airline, Merpati Nusantara, but it has not commenced services to date.

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<sup>19</sup> See Agreement between Australia and the United Kingdom, Treaty Series, 1958, No. 4, 1961, No. 23 and 1963, No. 3. Article 3 provides: "Such contracting parties shall have the right to designate one or more airlines." Currently the United Kingdom has designated two airlines (B.O.A.C. and Cathay) to operate services to Australia. Similarly, the United States has designated two airlines (Pan-Am and American).

<sup>20</sup> In this regard it has been recognized that it is not the province of the Rationalization Committee (Co-ordinator) to speculate about the steps the Government would take to implement decision of the Committee. The Committee and the Co-ordinator are in precisely the same position as the Arbitrator, who said, in a different context (Ref. 46):

"It is no part of my function as Arbitrator to determine what course the Director-General should take in face of an agreement or decision such as I have envisaged. Whether he could frustrate the objective sought by refusing approval except for some reason of safety or the like, is a matter upon which I express no opinion."

APPLICATION BY ANSETT/APNG TO OPERATE A REGIONAL SERVICE  
BETWEEN MADANG AND/OR LAE-MANUS ISLAND AND GUAM

As the following map (Fig. 3) shows, Guam, a Territory of the United States, acquired from Spain by military conquest in 1898 (similar in political status to Alaska and Hawaii, prior to statehood), is the cross-roads of a growing network of Pacific services<sup>21</sup> and is also the gateway to the United Nations Trust Territory of the Pacific Islands under United States trusteeship, which comprises Mariana (except Guam) Caroline and Marshall Islands, some 2,000 islands in all. For administrative purposes the area is divided into six districts—Marianas, Yap, Truk, Palau, Ponape and Marshalls.

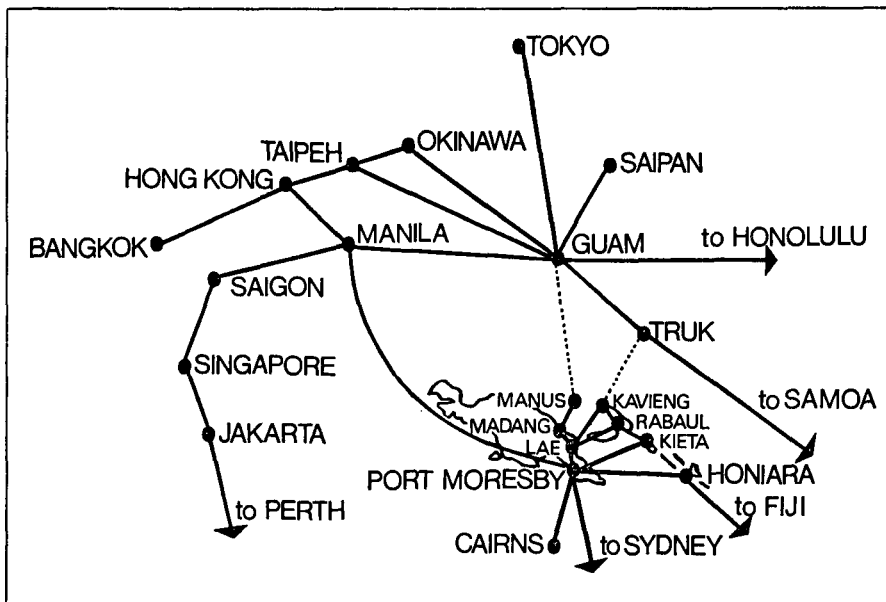


Figure 3

In addition, there is an enormous volume of military charter activity on behalf of the United States Defense Forces. Flying Tigers in particular is a large freight and charter carrier. These activities are mainly transitting and will, undoubtedly, be affected by any de-escalation of the Vietnam war. On the other hand it is anticipated that Okinawa will be handed back to the Japanese by 1972 and this will tend to cause a rapid build-up in the military importance of Guam and compensate for any withdrawal from Vietnam. In terms of New Guinea's emergence as a significant tourist and

<sup>21</sup> Currently TWA operates daily Boeing 707 Guam-Honolulu and daily Guam-Hong Kong with stops Okinawa and Taipei.

Pan-Am operates 6 weekly Guam-Honolulu including 2 via Wake Island and, daily a 707 Guam-Tokyo and 5 weekly 707 to Saigon 2 of which are via Manila.

Continental-Air Micronesia operates Guam-Honolulu Boeing 727-100 twice weekly via Truk, Majuro and Kawajalein Guam-Saipan, and a daily 727 and 3 DC-6 per week via Rota.

economic factor in the South and Central Pacific, an air connection by a reasonably direct route cannot be denied indefinitely.

Before any airline can operate such a service, however, it will be necessary to amend the Air Services Agreement between Australia and the United States of America dated 3 December 1946 as amended in Washington by an Exchange of Notes dated 12 August 1957. Currently, Section II of the Annex to the Agreement provides:

The designated airline of Australia shall be entitled to operate air services on each of the air routes specified via intermediate points, in both directions, and to make scheduled landings in the United States territory at the points specified in this Section:

Australia via New Caledonia, the Fiji Island, Honolulu to San Francisco and beyond to points in the British Isles and beyond to Europe and beyond.

The recent designation of American Airlines as a second United States airline to serve Australia could result in a full scale revision of the current Agreement. American Airlines has now filed timetables with the CAB providing for seven services per week. The pointers indicate, however, that initial discussions will concern control of capacity at economic load factors rather than the granting by either country of additional traffic rights. Qantas would, undoubtedly, like an additional point, such as Chicago, to counter the American Airlines services originating in the eastern sector of the U.S. and Los Angeles, which are currently served by its pool partners BOAC and Air New Zealand. The likely United States position is that the present Bermuda type agreement between the two countries under which Qantas operates a round-the world service through San Francisco-New York and beyond already grants Qantas the appropriate *quid pro quo* for the traffic rights exercisable by the United States airlines in Australian territory, and that the intent of the agreement is that problems of excess capacity are to be rectified by retrospective review.

If this view prevails the pattern of negotiations will be limited to the framework of the present agreement and boil down to capacity discussions in respect of existing routes.

In the present fluid and expansive situation in the Pacific, however, it is highly likely that issues involving additional traffic rights will be canvassed. Chicago and Los Angeles have been mentioned and PanAm has already sought to extend its Tokyo-Guam service direct to Sydney overflying New Guinea, but this was resisted by Australia on the basis that it is not specifically mentioned as an authorized point in the Air Services Agreement. JAL already has traffic rights from the United States authorizing Tokyo-Guam-Saipan but was recently denied the right to extend beyond to Australian Territory, a decision no doubt dictated by Australian refusal of Guam-Sydney for PanAm.

The Schedule to the Japanese-Australian Agreement provides:

Routes to be operated in both directions by the designated airline of Japan:

- a. Points in Japan-Hong Kong-Manila—a point in Indonesia-Darwin-Sydney.
- b. Points in Japan-Guam-Sydney.

This grant of rights is, of course, ineffective until Guam is also granted to Japan by the United States with beyond rights, and even if granted, the Japanese designated airline could not serve New Guinea as its agreement with Australia now stands.

In these circumstances there would certainly be no incentive for Australia, merely viewing the problem from a Qantas viewpoint, to "trade" significant Australian traffic rights in exchange for access to Guam. It is unlikely, however, that Australia can ignore or would wish to ignore in future traffic negotiations the legitimate aspirations of New Guinea for additional international air services. This seems implicit in the description by Sir Donald Anderson of the factors taken into account by Australia, which include External Affairs considerations and political relations with other countries, in determining the exchange of traffic rights.

Following the recent announcement of the application by Ansett/APNG for a New Guinea-Guam license there has been spontaneous and widespread support throughout the Territory from bodies such as the Chamber of Commerce, Missions and especially the communities at Lae, Madang and Manus Island. There has also been equally spontaneous support in Guam and Saipan, and strong recommendations have been made to appropriate Washington departments and agencies urging an immediate revision of the United States-Australia Air Services Agreement so as to permit direct air connections between Guam and New Guinea. The fact that Micronesia and New Guinea are both Trust Territories of the United Nations is of particular significance in this context.

The amendment of the agreement to include Guam would in no way determine which of the three major Australian airlines will be designated, but whatever the formal arrangement under which the service is operated, it is clear with regard to traffic density, aerodrome limitations and the equipment currently operated by Australian airlines, that the only feasible solution is for one of the domestic airlines to provide the service. The generation of combined tours from Japan through Micronesia and internal New Guinea, and the fact that tourists prefer to enter and leave via different gateways, lead to a similar conclusion.

#### SUMMARY AND CONCLUSIONS

Progress towards self-determination is gathering momentum, but there will be no significant changes prior to the election of a new House of Assembly in 1972. The period 1972-1976 will see a rapid transfer of executive responsibilities to the local Government and, in accordance with the Minister's recent statement, towards the end of the 1970's the Territory will have a secure economic base for political self-determination.

At some time during that period the policy and safety aspects of civil aviation will be transferred to a New Guinea Department of Transport. There are logical arguments in favor of the Director-General retaining control of the policy and licensing aspects until the Territory is ready to

take over total control of all aspects of civil aviation, but there are strong contrary pressures, and logic may not prevail.

The two-airline policy will run its course in New Guinea until November 1977, but well before that date there will be great debates about the future organization of air transport. The debates will cover many questions. Should the Territory establish a nationally owned airline or acquire an interest in an existing airline? How can an airline owned by the Australian Government survive in an environment of growing nationalism and self-determination? Is an airline controlled and owned by non-resident shareholders in any better position to adapt itself to these changing circumstances? There is no doubt that both airlines will seek answers consistent with their survival, and there is no doubt that the development of the Territory will need the enormous resources of both airlines for the foreseeable future.

During this period the domestic airlines will almost certainly assume an expanding role in the operation of Australian regional international services, and New Guinea could well provide the first real break-through. In the future negotiation and review of Air Services Agreements the Australian negotiators, following the pattern of the United Kingdom (East Africa, British West Indies and Hong Kong), and more recently New Zealand (Cook Island), will henceforth be obliged to consult with and give effect to the wishes of the Territory in regard to international air services. New Guinea must have the possibility of direct air links with all its neighbors well before self-determination.

After self-determination the services between Australia and New Guinea will be international services with both countries having the right to designate one or more carriers over the route. Both domestic airlines, therefore, have a vital stake not only internally but also in the future international route joining Australia and New Guinea. The quality of the services provided by TAA and Ansett, both externally and internally, and their sensitivity to the demands for indigenous participation and training, will, undoubtedly, vitally affect their long term future on these routes.

And on this note may I conclude with words of Lawrence Hargrave, whom we honor tonight, words which, though originally used in a different context, seem to me to be very applicable to the changing New Guinea scene:

Onward rolls the river of life, cutting away the bank on one shore, and making a sand bar elsewhere, ever changing, ever forgetting, let us hope ever improving.