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## *The Role of The International Telecommunications Union for the Promotion of Peace Through Communication Satellites*

### I. INTRODUCTION

**C**OMMUNICATION IS the fundamental means by which man's interpersonal relations proceed. It is the vehicle for the transmission of information and promotion of understanding not only within the confines of individual relationships, but among the States as well. Jungle drums, smoke signals and the like, though picturesque today, are evidence of man's continuous attempt to overcome communication barriers.

The invention of the telegraph marked the modern era of communication. In order to fully enjoy the potential of this new invention, telegraph lines had to transgress national boundaries. Ironically, this was regarded more as an affront to a State's sovereignty than as a beneficial development for mankind. It was evident that if the world was to prosper from the recent communication innovations, the concept of nationalism would have to adjust to the degree necessary to accommodate the attendant benefits of an international communication system. The need for international regulation and cooperation had become manifest.

The International Telecommunications Union (ITU) fulfilled this need,<sup>1</sup> and the ITU remains as the international organization charged with the responsibility of fostering cooperation and promulgating regulations in the field of international telecommunications.<sup>2</sup> Since its inception, the ITU has demonstrated its ability to adapt to the latest technological developments in the field of communication. Currently the ITU is faced with the most sophisticated and complex communication system yet developed — the communica-

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<sup>1</sup> For a history of the International Telecommunications Union see Glazer, *Law Making Treaties of the International Telecommunications Union through Time and Space*, 60 MICH. L. REV. 269 (1962).

<sup>2</sup> D. LEIVE, *INTERNATIONAL TELECOMMUNICATIONS AND INTERNATIONAL LAW: REGULATION OF THE RADIO SPECTRUM* 29 (1970), states that:

The I.T.U. structure is the product of a long evolution of various elements created at different times and for different purposes, finally combined at the 1947 Atlantic City Conferences. The various components of the organization succeed the first Telegraph Conference held in Paris in 1865, the International Bureau of Telegraph Administration created at Vienna in 1868, and the Washington Conference in 1927 which established the basic principles of international frequency management.

tion satellite. As the most advanced communication system to date, it possesses the greatest potential to promote understanding and peace among the States of the world.

Soon after the radio signals of Sputnik I heralded the dawn of the space age, the United Nations indicated a strong interest in the communication satellite as a means by which the various States of the world might be tied more closely together.<sup>3</sup> By a General Assembly Resolution,<sup>4</sup> the Committee on the Peaceful Uses of Outer Space was requested to study various techniques which would enable programs for outer space to come within the ambit of the United Nations.<sup>5</sup> The Committee drew attention to the fact that the ITU had been involved with international communication problems since its inception and would be the agency best suited to consider problems of radio frequency allocation for outer-space use.<sup>6</sup> Since the acceptance of this report, the United Nations has placed a great deal of confidence in the ITU. In another Resolution,<sup>7</sup> the General Assembly encouraged States to avoid wasteful use of the electromagnetic spectrum and urged compliance with all ITU regulations.<sup>8</sup>

The ITU has responded and acknowledged its latest responsibility:

[A]ll telecommunications problems are the sole competence of the I.T.U., including problems relating to telecommunication by satellite. . . . Satellite telecommunication must be integrated harmoniously into the world network. It therefore logically follows that the I.T.U. must be responsible for coordinating the activities of the various countries in the field. . . . The I.T.U. will certainly continue in the future to deal with satellite links as it has done in the past for other means of telecommunication.<sup>9</sup>

Though initially jealous of its independence, fearing that international politics would become a complicating and, hence, inhibiting factor in its work, the ITU and the United Nations have developed a close and effective working relationship since their union in 1947.

<sup>3</sup> Feldman, *Communication by Satellite*, 34 OKLA. B.A.J. 1431, 1433 (1963).

<sup>4</sup> G.A. Res. 1472 A, 14 U.N. GAOR 5, U.N. Doc. A/4354 (1959).

<sup>5</sup> Feldman, *supra* note 3, at 1433.

<sup>6</sup> Berger, *Legal Problems — Subjects of Communication Satellites In and Out of Orbit*, 34 PENN. B.A.Q. 510, 517 (1963). See also G.A. Res. 1472 A, 14 U.N. GAOR 5, U.N. Doc. A/4354 (1959).

<sup>7</sup> G.A. Res. 1348, 14 U.N. GAOR, Annexes, Agenda Item No. 25, at 17, U.N. Doc. A/4141 (1959).

<sup>8</sup> Krause, *Legal Aspects of Space Communication and Space Surveillance*, 29 J. AIR L. & COM. 230, 239 (1963).

<sup>9</sup> Mili, *A Reply to an Attack on the Competence of the International Telecommunications Union*, 35 ITU TELECOMMUNICATION J. 240 (1968).

This relationship includes reciprocal representation at meetings and conferences of related specialized agencies, and coordination of their various activities with those conducted by the ITU to assure economy of effort and mutual progress.<sup>10</sup>

## II. THE PROBLEMS

Despite the support of the United Nations and the ITU's self-confidence, there appear to be three major problem areas that the ITU must rectify if it is to promote the regulation of communication satellites for the benefit of mankind. The first of these is the organizational structure of the ITU, which was designed to promote international efficiency and cooperation for the improvement of telecommunication services. This structure has not been modified, however, since the Buenos Aires convention of 1952.<sup>11</sup> The Plenipotentiary Conference remains the supreme organ of the ITU<sup>12</sup> and is responsible for all major policy changes. The officers of the ITU and the representatives to the Administrative Council are also elected in the Plenipotentiary Conference.<sup>13</sup> Unfortunately, there is at least a five-year lapse between Plenipotentiary Conferences; and given the rate of technological advancement, it is questionable if the conferences are capable of keeping abreast of the latest technological developments.

The Administrative Council was formed to fill this void by meeting periodically between Plenipotentiary Conferences to consider specific telecommunication problems on a world-wide and regional basis. It is also designed to coordinate the activities of the permanent organs of the Union and insure the efficient operation of telecommunication services.

The General Secretariat is the permanent organ of the Union charged with the duty of carrying on its daily administrative and financial affairs.<sup>14</sup> The second permanent organ is the International Frequency Registration Board (IFRB), which renders technical assistance to nations when requested and records all international fre-

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<sup>10</sup> D. LEIVE, *supra* note 2, at 39.

<sup>11</sup> Glazer, *supra* note 1, at 279, 282 n.47. Jasentuliyana, *Regulatory Functions of the International Telecommunications Union in the Field of Space Telecommunications*, 34 J. AIR L. & COM. 62, 68 (1968).

<sup>12</sup> Note, *The International Telecommunications Union*, 31 SASK. B. REV. 41, 47 (1966).

<sup>13</sup> *Id.* The ITU officers elected are the Secretary-General and Deputy Secretary-General. Twenty-nine members are elected to the Administrative Council.

<sup>14</sup> *Id.*

quency assignments.<sup>15</sup> It is notable that the United States, a leader in communication technology, is conspicuously absent from membership in the IFRB.<sup>16</sup> Additionally, as a technical body it is subject to an inordinate amount of political pressure which mitigates its technical effectiveness.<sup>17</sup>

Since 1959 the International Consultative Committee for Radio has concerned itself with space communication problems relating to the following: telecommunication satellite orbits, propagation and noise in radio transmission, signal interference, and direct satellite broadcasting. The International Telegraph and Telephone Consultative Committee is concerned with the problems in the use of communication satellites for data transmission. Both consultative committees operate in plenary assembly where technical problems relating to telecommunications are drawn up and referred to study groups composed of experts from various countries.<sup>18</sup> These study groups then offer recommendations to the next plenary session. This procedure has been severely criticized on the ground that the consultative committees typically take up to two years to reach a decision.<sup>19</sup> Meanwhile, there are technological advances; and when it is realized that the permanent organs of the ITU are dependent upon the time schedules of these nonpermanent committees, the inevitable result is administrative inefficiency and confusion in the implementation of policy.<sup>20</sup>

The internal organization of the ITU has not adapted to its space age problems. Its formal control measures for regulation are, at best, incomplete.<sup>21</sup> The ITU is reluctant to use even its minimal

<sup>15</sup> Glazer, *supra* note 1, at 309, notes that these functions are similar to the domestic duties of the Federal Communications Commission in the United States.

<sup>16</sup> COMMUNICATION BY SATELLITE, AN INTERNATIONAL DISCUSSION 7 (Report of an International Conference Sponsored by the Carnegie Endowment for International Peace and the Twentieth Century Fund, G. Weil ed. 1969) [hereinafter cited as COMMUNICATION BY SATELLITE].

<sup>17</sup> *Id.*

<sup>18</sup> For example, the International Consultative Committee for Radio has fourteen different study groups dealing with the following subjects: Transmitters; Receivers; Fixed Service Systems; Space Systems and Radio Astronomy; Propagation over the surface of the earth and through the nonionized regions of the atmosphere; Ionospheric Propagation; Standard-Frequencies and Time-Signals; International Monitoring; Radio-Relay Systems; Broadcasting; Television; Tropical Broadcasting; Mobile Services; and Vocabulary.

<sup>19</sup> COMMUNICATION BY SATELLITE, *supra* note 16, at 5.

<sup>20</sup> D. SMITH, INTERNATIONAL TELECOMMUNICATION CONTROL — INTERNATIONAL LAW AND THE ORDERING OF SATELLITE AND OTHER FORMS OF INTERNATIONAL BROADCASTING 33 (1969).

<sup>21</sup> *Id.* at 32.

enforcement powers against a delinquent State.<sup>22</sup> Further, it clings to an archaic equal-voting system which inherently militates against progressive regulation of this new, highly sophisticated communications system.<sup>23</sup> Each succeeding conference adopts additional regulations and resolutions for the ordering of telecommunication systems, yet there is no concomitant increase in financial resources or personnel to administer the measures. It is, therefore, clear that the ITU is not operating at its maximum potential.

Essentially, the ITU is experiencing dichotomous roles. Its technical role, for which it was initially designed, is hindered by a new political/legal role being forced upon it. Unable to isolate its technical, regulatory function, the ITU has as a consequence lost a great deal of its effectiveness and credibility in the international telecommunications arena.<sup>24</sup> It remains to be seen if the ITU can adapt itself organizationally to cope with this latest mode of international telecommunication.

Aside from the organizational problems of the ITU, the second major area of concern is the effect of satellites on State sovereignty. The problem is reminiscent of the original conflict when telegraph lines were needed to cross State borders to complete an international communications system. Although that problem was solved and the members of the ITU have a long history of working together and cooperating through years of war, revolutions, and other adversities, the problem posed by satellites is significantly different. In fact, it appears as if States have reverted to the same spirit which earlier had inhibited the development of the international telegraph system. This is attributed to the fact that only the most technically advanced States are presently capable of carrying on a satellite system. The vast majority of the States of the world feel threatened and exploited by its existence. As a result, their self-interest in perpetuating their sovereignty supersedes any mutually cooperative endeavor. These attitudes impose upon the ITU the role of a promoter to convince the majority of States to put aside their fears and recognize the benefits of a global, participatory communication satellite system. In order to effectuate this design, the ITU must displace the inherent distrust among States and promote cooperation for effective communication. The dilemma of the ITU lies in the neces-

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<sup>22</sup> COMMUNICATION BY SATELLITE, *supra* note 16, at 7.

<sup>23</sup> *Id.* at 6-7.

<sup>24</sup> *Id.*

sity of fostering communication through cooperation while recognizing that cooperation is not possible without communication.

It is incumbent upon the ITU to provide an international forum for telecommunication; but in its self-interest, it must solicit support for a single global system. This is vital because if the number of satellite systems can be held to an absolute minimum, there will be less "hardware" floating around in space, which will decrease the amount of regulation necessary and lessen the possibility of a disastrous collision.<sup>25</sup> In addition, with a minimal number of satellite systems in orbit, States will find it in their best interest to develop relations with States already a part of a communication satellite system.

This ideal situation, however, has yet to come to pass. Today, only two communication satellite systems exist. Not surprisingly, the dominant forces behind these systems are the United States and the Union of Soviet Socialist Republics. The declared policy of the United States since President Eisenhower's address to the United Nations in 1960<sup>26</sup> has been the establishment of a global system of communication satellites which will not only serve the needs of the United States, but of all other States as well, with a view to world-wide participation in the interest of peace and understanding.<sup>27</sup>

In contrast to the attitude of the United States, the Union of Soviet Socialist Republics, even though a member of the ITU, has indicated that it does not intend to participate in a global communication satellite system.<sup>28</sup> Philosophically, they justify their refusal on the grounds that a global system is incompatible with their principles of sovereign equality.<sup>29</sup> In actuality, it appears that the Soviets are more concerned with the political aspects of outer space than

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<sup>25</sup> D. SMITH, *supra* note 20, at 145-46; COMMUNICATION BY SATELLITE, *supra* note 16, at 6.

<sup>26</sup> Berger, *supra* note 6, at 515.

<sup>27</sup> Segal, *Communication Satellites — Progress and the Road Ahead*, 17 VAND. L. REV. 677 (1964). See Communication Satellite Act of 1962 (Declaration of Policy and Purpose), Pub. L. No. 87-624, 76 Stat. 419; SENATE COMMITTEE ON AERONAUTICAL AND SPACE SCIENCES, DOCUMENTS ON INTERNATIONAL ASPECTS OF THE EXPLORATION AND USE OF OUTER SPACE, S. Doc. No. 18, 88th Cong., 1st Sess. 14, 206, 208, 261-63 (1963).

<sup>28</sup> See generally Doyle, *Analysis of the Socialist States Proposal for INTERSPUTNIK: An International Communication Satellite System*, 15 VILL. L. REV. 83 (1969).

<sup>29</sup> Smith, *Legal Ordering of Satellite Telecommunications Problems, Alternatives*, 44 IND. L.J. 337, 349 (1969).

with any cooperative endeavor.<sup>30</sup> The Soviet INTERSPUTNIK system is comprised of the U.S.S.R. and its satellite countries. It accounts for approximately 10 percent of the world's communication satellite traffic.

The Soviet attitude is indeed unfortunate, as the world would greatly benefit from a single global system where the maximization of cooperation between two major space powers, despite their political differences, would have a unifying effect on all the States of the world.<sup>31</sup> Further advantages flowing from this arrangement would be the pooling of technical and scientific resources to avoid duplication of facilities<sup>32</sup> and the peaceful uses of outer space to benefit all States, regardless of the stage of their economic and scientific development.<sup>33</sup>

Regardless of the Soviet attitude, the United Nations promoted participation in the International Telecommunications Satellite Consortium (INTELSAT), whose purpose is to unify those countries which, because of great distances and geographical barriers, are unable to attain an effective international means of communication.<sup>34</sup> Membership is open to all members of the ITU, and rights in the organization are based upon a percentage of ownership and anticipated use of the system.<sup>35</sup> The ITU superimposes its regulatory processes concerning the technical and administrative ordering of outer space development upon the INTELSAT structure.<sup>36</sup> The ITU also has the responsibility for the technical competency of the system, while the INTELSAT organization is charged with the financial and operative responsibilities.<sup>37</sup>

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<sup>30</sup> Crane, *Soviet Attitude Toward International Space Law*, 56 AM. J. INT'L L. 685, 691 n.51 (1962); Segal, *supra* note 27, at 720-24.

<sup>31</sup> Doyle, *Communication Satellites: International Organization for Development and Control*, 55 CALIF. L. REV. 431, 439 (1967).

<sup>32</sup> *Id.*

<sup>33</sup> Simsarian, *Outer Space Cooperation in the United Nations*, 57 AM. J. INT'L L. 854 (1963); Simsarian, *Interim Agreement for a Global Commercial Communication Satellite System*, 59 AM. J. INT'L L. 344 (1965); Smith, *supra* note 29, at 347-48; Throop, *Some Legal Facets of Satellite Communication*, 17 AM. U.L. REV. 12, 18 (1967); Multilateral Communications Satellite System, August 20, 1964 [1964], 15 U.S.T. 1705, T.I.A.S. No. 5646.

<sup>34</sup> Throop, *supra* note 33, at 40.

<sup>35</sup> *Id.* at 18.

<sup>36</sup> Smith, *supra* note 29, at 338. This technical and administrative ordering includes the development of an expanded general competence in dealing with outer space matters, the revision of sections of regulatory provisions pertaining to telecommunication in outer space, and the resolution of specific problems in space telecommunication such as the regulation of military communications satellites.

<sup>37</sup> *Id.* at 350.

The INTELSAT system, whose membership accounts for over 90 percent of the potential world's communication traffic that might be served by a global satellite system in the near future,<sup>38</sup> operates through the domestic telecommunication organs of the participating States.<sup>39</sup> INTELSAT has the responsibility of launching and maintaining telecommunication satellites and operating telecommunication channels between the space segment of the system the earth stations which remain under the control of the particular state.<sup>40</sup> Even with this autonomy, problems exist in the INTELSAT organization. Many States are incapable of assuming the onerous financial responsibility of maintaining such a system. Some States, even those with the requisite financial ability, are reluctant to participate because voting rights in the organization are based upon the degree of financial contribution. Ultimately, managerial control is relinquished in favor of an international body whose final decision would be determined by a majority vote of the States having financial control.<sup>41</sup>

In summary, the ITU's role is to act as a catalyst in fostering cooperation among the States of the world in order to promote their participation in a global communication satellite system. It is by fostering such cooperation that the ITU can make its maximum contribution to the cause of world peace.

The final areas to be discussed are the myriad technological problems brought on by satellite communications and their consequent effects on the ITU. It is conceded that the expertise of the ITU is in the technical area. However, satellites pose devastatingly complex problems, and it is questionable whether the ITU is prepared to meet this challenge.

In any event, the extent of the ITU's activities in this area and

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<sup>38</sup> Throop, *supra* note 33, at 18. This figure represents the commitments of the 68 States which had signed the "Special Agreement" establishing INTELSAT, as of September 30, 1969.

<sup>39</sup> Smith, *supra* note 29, at 337.

The United States participates through the rather controversial Communication Satellite Corporation (COMSAT). See generally Moulton, *Communication Satellites — The Proposed Communication Satellite Act of 1962*, 18 BUS. LAW. 173 (1962); Schrader, *Communication Satellite Corporation: A New Experiment in Government and Business*, 53 KY. L.J. 732 (1965); Schwartz, *Government Appointed Directors In a Private Corporation — The Communication Satellite Act of 1962*, 79 HARV. L. REV. 350 (1965).

<sup>40</sup> Smith, *supra* note 29, at 337.

<sup>41</sup> *Id.* at 351-52. The author notes, however, that where substantial investments are involved, numerous international organizations, such as the International Monetary Fund and the International Bank for Reconstruction and Development, employ systems of weighted voting.

an understanding of the technical complexities will enhance the appreciation of its activities. Initially, it should be recognized that the radio spectrum is finite. Therefore, the number of frequencies available for allocation is intrinsically limited,<sup>42</sup> with the supply never satisfying the demand.<sup>43</sup>

Radio waves tend to travel in a straight line similar to light waves; thus, after relatively short distances, the curvature of the earth interferes with the transmission.<sup>44</sup> Due to variations in propagation character, only waves of a certain length can pass through the atmosphere and ionosphere, further limiting the space to certain selected frequencies.<sup>45</sup> Moreover, studies conducted by the consultative committees of the ITU have confirmed that the bands situated between 1 and 10 Gc/s (one billion cycles per second) are the most suitable for the development of radio communication. It is precisely this frequency which is used most for terrestrial relay systems.<sup>46</sup>

The radio spectrum is divided by international agreement among the various services which use radio for communication. Most of the space is assigned to previously existing services, such as maritime, meteorological, and amateur broadcasting. A number of the small States are unwilling to yield to demands made by the United States and the Union of Soviet Socialist Republics to allocate more frequency space to space telecommunication on the ground that these two States are insensitive to the future interests of these smaller states.<sup>47</sup> If the voting procedure remains the same, the smaller States will be able to stave off the attack of the space powers on their assigned frequencies, but will, at the same time, hinder the development of satellite telecommunication.

The demand for radio services has increased to the point where frequencies will have to be shared to insure an interference-free spectrum. Consider the ramifications of interference on a satellite

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<sup>42</sup> *Supra* note 12, at 45.

<sup>43</sup> Glazer, *INFELIX ITU — The Need for Space Age Revision to the International Telecommunication Convention*, 23 *FED. B.J.* 1, 22 (1963).

<sup>44</sup> Segal, *supra* note 27, at 678. See *Hearings Before Subcomm. on Monopoly of the Senate Select Comm. on Small Business Public Questions on the Ownership and Control of a Space Satellite Communication System*, 87th Cong., 1st Sess. 121-31 (1961). For a graphic illustration of satellite orbits and coverage see P. JESSUP & H. TAUBENFELD, *CONTROLS FOR OUTER SPACE* 224-25 (1959).

<sup>45</sup> Glazer, *supra* note 1, at 284.

<sup>46</sup> See *Hearings on S. J. Reg. 32, Before the Subcomm. on Communication of the Senate Comm. on Commerce*, 87th Cong., 1st Sess. 271 (1961).

<sup>47</sup> *NEWSWEEK*, Nov. 18, 1963, at 81.

radio signal, especially in light of the fact that radio waves are the lifelines of the satellite system.<sup>48</sup> Conceivably, a disturbed signal could cause malfunctions at the launch site or imminent danger to life and property in the initial stages of flight. Satellite self-destruction devices operate through signals carried over radio waves. Moreover, scientific data and communication transmissions of satellites could be lost forever due to disturbed signals.

The technical limits of a communication satellite system will be directly influenced by the type and amount of frequency space assigned. International and foreign policy matters relating to international agreements for the creation of a global communication system will depend upon the predetermined technical limits.<sup>49</sup> Hence, the success or failure of a global communication satellite system will depend to a great extent on the technical limitations placed on that system. The ultimate responsibility for the allocation of this frequency space belongs to the ITU. Its technical competence and skill will be the final determiner for effecting the ordering of communication systems for peace.

It should be evident at this point that the ITU faces problems of macrocosmic proportion. Communication itself is the root of the problem and also the key to the answer. The primary purpose of the ITU must be to insure that the science of communication is used to effect cooperation among States for the development of international understanding.

### III. PAST TRENDS — POLICY CONSIDERATIONS

International telecommunications problems have been presented and negotiated in Plenipotentiary Conferences since the formation of the ITU. Although diplomatic and political maneuvering is apparent during the Conferences, the regulations promulgated are, by and large, complied with by the member States. The ITU has chosen to treat the regulation of communication satellites in the same manner. The twenty-third session of the Administrative Council, by resolution, provided for a World Administrative Radio Conference in 1971. The announced purposes of the Conference were to:

- 1) Revise existing administrative and technical regulations and adopt such new provisions as necessary for the space radio services

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<sup>48</sup> Glazer, *supra* note 1, at 285-86.

<sup>49</sup> Griffith, *International Implications of Communication Satellite Activities*, 47 DEP'T STATE BULL. 567 (1962).

and the radio astronomy service which will ensure the efficient use of the spectrum.

2) Consider, and revise as necessary, the provisions of the radio regulations pertaining to aeronautical mobile and maritime mobile services and to navigation in so far as the use of space techniques is concerned.

3) Consider and provide, as far as possible, additional radio frequency allocations for the space radio services.

4) Revise and supplement as appropriate the existing technical criteria for frequency sharing between space and terrestrial systems and establish criteria for sharing between satellite systems.<sup>50</sup>

Admittedly laudable goals, it remains to be seen if they can be properly effectuated. No doubt the ITU has demonstrated its willingness to continue regulation in the field of international telecommunications, but the question becomes: should past procedures govern the development of regulations for a new form of international communication? Or, will traditional methods of ordering telecommunications be adaptable to ordering satellite telecommunications?

These two questions elicit varying responses. Some authorities seem awed by the complexity of satellite systems and express the view that traditional international law theories are inadequate to order the development of such systems.<sup>51</sup> They argue that the international law theories which stressed the sovereignty concept were adequate when international telecommunication systems were in their development.<sup>52</sup> After some negotiations it was clear that international telegraph and telephone lines did not constitute too great a threat to a State's sovereignty. Thereafter, a State was ready to compromise its sovereignty to the limited extent necessary for the advantage of international radio communication. The interests were easily and readily balanced. Today, however, it is clear that there is a new set of conditions and interests to be balanced. A State will have to surrender a greater portion of its sovereignty to receive the potential benefits of satellite communication. For example, it is possible for satellites to broadcast directly into the radio or television receivers of households in any State. This adverse potential makes many States reluctant to sanction the system. In addition, satellite costs are prohibitive for many States. Finally, it is

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<sup>50</sup> ITU Administrative Council, 23d Sess. Res. 632, World Administrative Radio Conference for Space Telecommunications (May 1968).

<sup>51</sup> D. SMITH, *supra* note 20, at 99.

<sup>52</sup> *Id.*

argued that the ITU is in dire need of revision to cope with its space age duties.<sup>53</sup>

The authorities with a contrary view take a more practical approach. Initially, they ask: do we advocate change merely for the sake of change? Secondly, they realize that changes in either the structure or the activities of the ITU will have to come about by a vote of its members. Barring an affirmative vote to the contrary, all proposals for change will remain mere proposals. Furthermore, these authorities do not accept the argument that communication satellites are a radical departure from prior modes of international telecommunication. Thus the ITU should be capable of absorbing the thrust of this latest development and adapt its future policy accordingly.

Both arguments are meritorious, but it must be noted that past trends are not necessarily indicative of the future. Policy should be made with a view to anticipating future contingencies. A blending of the arguments presented above is necessary for the ITU to be amenable to change without changing merely to be fashionable. With this perspective the ITU can properly fulfill its function of fostering cooperation and exploiting the potential of a global satellite communications system in the best interests of the people and States of the world.<sup>54</sup>

#### IV. APPRAISAL AND RECOMMENDATIONS

When Sputnik I announced the inception of the space age, the ITU's problems in the area of credibility and enforcement of regulations were multiplied.<sup>55</sup> The fundamental task of the ITU became one of maintaining and extending its present authority necessary to enforce the legal ordering of international telecommunications.<sup>56</sup>

In addition to the need for structural reorganization of the ITU,

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<sup>53</sup> Glazer, *supra* note 43, at 31; Smith, *supra* note 29, at 372.

<sup>54</sup> O. DUNLAP, COMMUNICATIONS IN SPACE 129 (1962). Doyle contrasts the technological impact of satellites as having created an incumbency for international cooperation to develop their potential, as opposed to previous technological innovations which tended to disrupt existing organizations. See Doyle, *supra* note 31, at 431.

<sup>55</sup> D. SMITH, *supra* note 20, at 177.

<sup>56</sup> Doyle raises the questions of "who is to control the satellites themselves; who will own, maintain, and derive profit from them, and, under what conditions and by whom may a satellite, transmitting programs into nations which do not want them, be jammed or destroyed?" The necessity of dealing with such problems before they create significant provocation is clear. Doyle, *supra* note 31, at 443. See also Estep, *Some International Aspects of Communication Satellite Systems*, 58 NW. U.L. REV. 237, 259 (1963); Glazer, *supra* note 1, at 307.

there is an apparent necessity for an international consultative committee for satellites to foster development of the ITU's expertise.<sup>57</sup> This committee could concentrate on educating the members of the ITU on the complexities and nuances of communication satellites while isolating the various regulatory functions pertaining to this new mode of communication.<sup>58</sup> It could also coordinate the activities of other international agencies which would benefit from international radio communication, such as: the World Health Organization, for information on disease;<sup>59</sup> the World Meteorological Organization, for weather reporting to the benefit of industry and commerce;<sup>60</sup> and satellite photographs for the benefit of the entire scientific community.<sup>61</sup> Regardless of the merits of organizational changes, an international consultative committee for satellites appears necessary, if only to fulfill basic managerial principles of administration and control of new technological entity.

At this point it is necessary to at least treat some recommendations for organizational changes in the ITU which could aid in better ordering communication satellites for the effectuation of world peace. Initially, the ITU should discard its theoretical approach and place more emphasis on the practical problems of international telecommunication, at least in the area of harmful interference.<sup>62</sup> It should also possess the requisite powers to deal with its problems,<sup>63</sup> although this power must be conferred by a vote of its members. In this vein, a thorough attempt should be made to adjust the voting procedure to more accurately reflect the usage and specialized interests of the United States and the Union of Soviet Socialist Re-

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<sup>57</sup> As each new service developed — radio, telephone, and telegraph — an International Consultative Committee was established. The case for extending similar treatment to satellites would appear at least equally clear.

<sup>58</sup> COMMUNICATION BY SATELLITE, *supra* note 16, at 29.

<sup>59</sup> *Id.* at 11.

<sup>60</sup> Gross, *The I.T.U. and the Future of International Telecommunication*, 2 U.N. CHRON. 75, 76 (1965).

<sup>61</sup> *Id.* See also COMMUNICATION BY SATELLITE, *supra* note 16, at 11.

<sup>62</sup> D. LEIVE, *supra* note 2, at 291, observes that one of the major problems of the present regulatory regime is that the Board's findings are held in low repute, tending to be ignored or rejected with impunity.

<sup>63</sup> The International Conference includes among these problems that of coordination as well as regulation, due to the number of international agencies directly concerned with space and satellite communications (*e.g.*, the International Civil Aviation Organization, the Intergovernmental Maritime Consultative Organization, and the World Meteorological Organization). COMMUNICATION BY SATELLITE, *supra* note 16, at 10.

publics, without ignoring the interests of the other States.<sup>64</sup> This goal can only be achieved by the member States acting in concert.

Secondly, the ITU itself must either discard its political/legal role or add diplomatic and political experts to its staff to handle these problems. Such functions are beyond the realm of the technically oriented personnel with which the ITU is presently staffed.<sup>65</sup> Assuming the continued existence of the political/legal function, however, the ITU will be forced to develop expertise in this area in order to deal capably with the practical impacts of its decisions.<sup>66</sup>

More specifically, if the duties of the ITU are going to continue to increase, there must be a concomitant increase in financial resources and personnel. To insure a rapid response to the latest technological innovations, Plenipotentiary Conferences should be held more frequently; otherwise a procedure to amend the conventions to meet future contingencies without calling an administrative radio conference should be developed.<sup>67</sup>

Further efforts of the ITU should be directed toward assuring the presence of increased technical expertise on sub-committees,<sup>68</sup> and establishing a juridical body with legal competence at least equal to the present technical competence of the permanent organs.<sup>69</sup> A streamlining of the existing plethora of regulations is mandatory to enhance understanding and compliance. Presently, the regulations are too complex and imprecise to be properly enforced. By the suggested streamlining, they will be more amenable to compliance and revision with the possibility of oversights and confusion being substantially mitigated.<sup>70</sup> Thereafter, States failing to comply would have a less substantial excuse than now, and the ITU would have increased justification to declare a delinquent satellite aggressive under the 1961 United Nations Treaty.<sup>71</sup> Through such a declaration,

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<sup>64</sup> *Id.* at 30; SMITH, *supra* note 20, at 33.

<sup>65</sup> COMMUNICATION BY SATELLITE, *supra* note 16, at 6.

<sup>66</sup> *Id.*

<sup>67</sup> D. LEIVE, *supra* note 2, at 280, describes a proposal by the United Kingdom at the 1965 Plenipotentiary Conference by which amendments could be made by postal consultation, eliminating the difficulty and expense of convening an administrative conference.

<sup>68</sup> *Id.*

<sup>69</sup> D. SMITH, *supra* note 20, at 33-34.

<sup>70</sup> D. LEIVE, *supra* note 2, at 280, indicates that provisions relating to a particular matter are scattered throughout the regulations. Estep notes an urgency to clearly distinguish message and channel services from general broadcasting, assigning them different frequencies and even separate satellites. Estep, *supra* note 56, at 260. See also Glazer, *supra* note 1, at 310.

<sup>71</sup> Glazer, *supra* note 1, at 315.

the offending State would lose the protection of the ITU regulations and any other State could legally "jam" the offending transmission.<sup>72</sup>

With the advent of the satellite, the IFRB has been subjected to responsibility in addition to its recording function. It has been suggested that it function as an international telecommunications court.<sup>73</sup> Compulsory arbitration or other adjudication procedures would undoubtedly facilitate the implementation of this proposal. This, however, would necessitate an improvement in the legal principles presently governing the rights and obligations of the member States.<sup>74</sup> Given the increased responsibility of the ITU, the above seem to be minimal changes which will have to be made to enable it to keep pace with the present rate of technological advancement.

To fulfill its function the ITU requires greater flexibility and discretion in administering its affairs.<sup>75</sup> To obtain these qualities, the individual member States must relinquish a portion of their power and authority for the benefit of all — presently a highly unlikely prospect. However, as use of the spectrum increases and the necessity for regulation becomes a higher priority, it is submitted that member States will more readily cooperate with the ITU.

As may be inferred from the previous discussion, the problem of providing the ITU with resources necessary for it to reorganize and acquire powers commensurate with its responsibility is inextricably related to the problem of State sovereignty. Undoubtedly, conflicts will arise in the ITU's role as a coordinator of governments for a global system<sup>76</sup> and a forum for divergent national viewpoints.<sup>77</sup> Perhaps the first step in resolving this difficulty is by affording to all States the opportunity to participate in the ordering of international telecommunications, regardless of ITU membership.<sup>78</sup> If this technicality cannot be suspended, the ITU should

<sup>72</sup> *Id.*

<sup>73</sup> Estep points to the potential for controversy by the probably irresistible urge of governments to add propaganda objectives to the news and educational programming of their broadcasts. A tribunal to construct standards and accordingly license these broadcasts will provide a constructive alternative to the present practice. Estep, *supra* note 56, at 260.

<sup>74</sup> D. LEIVE, *supra* note 2, at 288.

<sup>75</sup> *Id.* This discussion ignores the establishment of a new international body in lieu of the ITU. Smith, however, advocates the establishment of an International Board-casting Commission. See D. SMITH, *supra* note 20, at 188.

<sup>76</sup> Gross, *The I.T.U. and Space Telecommunications*, 8 U.N. REV. 36, 38 (1961).

<sup>77</sup> SMITH, *supra* note 20, at 31.

<sup>78</sup> COMMUNICATION BY SATELLITE, *supra* note 16, at 30; Gross, *supra* note 76, at 37.

set out minimum technical and administrative requirements to assure the availability of membership to all States who wish to participate.<sup>79</sup> This will eliminate the problem of the ITU's present responsibility to determine and, at the same time, represent the interests of the less technically sophisticated States.<sup>80</sup> In addition, the ITU must encourage these States to join an existing system to increase their technical competence and be afforded the benefits of rapid international communication. In return, the costs of operating the system will be shared, decreasing each State's burden accordingly.<sup>81</sup>

Yet the recurring dilemma of inducing cooperation among the States of the world for their mutual benefit continues to plague the implementation of this scheme. The first step in promoting cooperation for the realization of a truly global communications satellite system could perhaps be technical assistance by and through the ITU.

As technology increases, new problem areas will appear. The fundamental area for technological experiment is the spectrum itself. Studies must be conducted to find ways not only to expand the potential service of the spectrum, but also, if possible, to expand the spectrum itself. Although studies to expand the services or the spectrum, involving ultra high and microwave radio frequencies, laser beams, bionics and plasma physics, have been conducted,<sup>82</sup> the full potential of the spectrum has yet to be realized. Utilization of millimetric wave bands are expected to lessen the number of existing shared frequencies,<sup>83</sup> but this by no means indicates that all telecommunication problems are resolved. Further experimentation is necessary to provide for the preservation and eventual utilization of every available space on the spectrum. Since every State possesses an interest and has the potential to contribute to the solutions, every State should be invited to participate in these technical and experimental programs.<sup>84</sup>

The ITU could establish regional training centers to promote

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<sup>79</sup> COMMUNICATION BY SATELLITE, *supra* note 16, at 30.

<sup>80</sup> Gross, *supra* note 76, at 37.

<sup>81</sup> *Id.*

<sup>82</sup> O. DUNLAP, *supra* note 54, at 195-99.

<sup>83</sup> AVIATION WEEK AND SPACE TECHNOLOGY, Nov. 18, 1963, at 35.

<sup>84</sup> Griffith, *supra* note 49, at 570.

technical competence in the communications field.<sup>85</sup> These cooperative attempts to pool resources on technical problems should lead to the realization that retransmission and conversion expenses will be substantially mitigated<sup>86</sup> if orbital communication systems are standardized, transmission and receiving equipment is adapted by ground stations, and frequency plans are coordinated.<sup>87</sup>

It is but another step to the realization that the most efficient use of the spectrum is in every State's best interest. Hopefully, States would then relinquish their hold on spectrum space assigned to out-moded services for reassignment to a more viable service for mankind. At this juncture the effect of improved communication in promoting international peace would be extended far beyond the minimal role it plays today.

## V. CONCLUSION

While it is beyond dispute that communication satellites offer many States the opportunity for unprecedented flexibility and influence in international affairs, it is equally apparent that a communication satellite system demands international cooperation.<sup>88</sup> The very multiplicative property of communication labors against this design.<sup>89</sup>

It is the ITU which possesses the key to this enigma. As the international telecommunications forum, substantive and procedural problems could be brought to the fore for negotiation and resolution.<sup>90</sup> It is nowhere stated that States must be of the same political, social or economic philosophy to cooperate in the fundamental task of effectuating a communication system. Divergent philosophies can exist concurrently so long as the recognition of the need to communicate is present.

In conclusion, it is evident that future agreements, formal or tacit, which States enter into, will inevitably reflect the degree of mutual understanding effected through existing international communication systems. It is therefore axiomatic that international communications will be determinative of the future world order, re-

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<sup>85</sup> Gross, *supra* note 60, at 75.

<sup>86</sup> Andrada, *Ensuring Universality of Services in Telecommunications*, 2 U.N. REV. 31 (1955); Gross, *supra* note 60, at 77.

<sup>87</sup> COMMUNICATION BY SATELLITE, *supra* note 16, at 24.

<sup>88</sup> *Id. passim*.

<sup>89</sup> D. SMITH, *supra* note 20, at 137.

<sup>90</sup> *Id.* at 184.

flecting either world discord or world harmony. Certainly, world understanding through international communication is a prerequisite to world peace. It is the responsibility of the International Telecommunications Union to wage this peace by nurturing international cooperation through regulated communication.

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