

THE INTERNATIONAL POLITICS OF THE ORBIT-SPECTRUM ISSUE

by

Paris Arnopoulos

INTRODUCTION

In the last ten years, the world has witnessed an increasing competition for scarce natural resources. As economic systems develop, they produce more goods and consume more resources. Available resources for development not only involve matter and energy but location in space as well. One of the most important resources of the latter type is the geostationary orbit and the electromagnetic spectrum.

The limited positions available in the orbit and the spectrum coupled with the increasing demand for them throughout the world, has created an international problem of distribution among contemporary nation-states. The orbit-spectrum issue has therefore become a political controversy raging in many specialized organs of the international system.

Political issues for equitable distribution of scarce resources tend to become accentuated as they multiply and feed into each other, thus getting more difficult to analyse and resolve. The orbit-spectrum controversy is therefore interwoven with the larger demands for a New International Order and must be seen within this wider, more complex context.

In this study, we shall investigate this specialized orbit-spectrum issue in the general political environment of the present world. Our analysis will be both structural and functional. In the first instance, we will elucidate the essential characteristics of the content and context of the issue; introduce the main parties in the debate; and the institutional arena in which the conflict is being waged. On the basis of this setting, we shall move to the second instance where an input-conversion-output analysis will be made of the political process which tries to resolve the orbit-spectrum issue in the developing world system.

The hypothesis here is that the orbit-spectrum problem is a good example of how the international decision-making structures and processes try to accommodate conflicting national interests. Space politics is at the centre of the dynamics of collective policy-making involving "common heritage of mankind" resources. Learning to handle such public issues will certainly improve our capacity to affect peaceful change to a better world.

PART ONE: INTERNATIONAL SYSTEM

I — *THE ORBIT-SPECTRUM CONTROVERSY*

We begin this analysis by defining the elements of the main issue as it developed in the relevant sector of the world system. This will delimit the scope of our concern and the context in which it exists, thus setting the theme of the study.

Our interest here relates to the politics of the geostationary orbit and the electromagnetic spectrum (o/s). This means that we are investigating how the international policy-making system resolves conflicts arising from the sharing of the o/s.

1. *The O/S Resources*

The geostationary orbit is a doughnut-shaped volume of space about 35,000 km above the equator around which a satellite can remain fixed in relation to some point on the earth. This orbit is important because geostationary satellites (Geosats) can be used for relaying radio signals from one point on the earth to another, thus improving long distance communications and broadcasting. To do so, a geosat needs a parking space or orbit slot as well as a radio frequency in the electromagnetic wave spectrum. Electromagnetic radiation is a form of energy travelling through space and carrying all radio communications. These communications must be carried out along distinct frequency channels so as not to interfere with each other.

These limitations place constraints on how many geosats can be parked around the orbit and how many channels they can carry at any particular time. Although there were only about ten geosats operating in the last decade, it is estimated that there will be over 200 active ones by the end of the eighties. This number will still be much less than the theoretical limit which could go as high as 2000 geosats. Nevertheless, congestion will occur long before that, especial-

ly in certain regions over the Western Hemisphere. The same limitation applies to the number of radio channels a geosat can transmit. Although radiation is practically unlimited, the information it can transport depends of our technological capability.

Like any other natural resource, the o/s is as good as our ability to exploit it. A resource is only a reservoir of wealth or a storehouse of value which can be unlocked and distributed by the process of technological development. Such development has only reached the commercial stage recently; but with rapid technological advances in satellites and telecommunications, the field is now seething with activity.

2. Political Implications

The o/s politics arise with disagreements as to the best way of distributing o/s resources among the members of the international system. Since the nineteen sixties, the world community has been debating how to optimize the development and equitable sharing of its o/s resources. Such optimization is desirable in order to satisfy increasing demands, prevent orbit congestion and avoid channel interference. The most efficient allocation of the already crowded spectrum is necessary if further development is to take place. Orderly development of the resources of the world depends on the collective decision-making capacity of the international system. This capacity, however, depends on the willingness of states to diminish their individual sovereignty. The increasing interdependence of the international system has forced states to accept this erosion of unilateral decision-making, so that the process of consensus-building can go on. So far the consensus is to maximize the dispersion of communication channels in the o/s. This consensus was reflected in the International Telecommunication Convention of 1973. More specifically the agreement stated that:

... radio frequencies and the geostationary satellite orbit are limited natural resources, that they must be used efficiently and economically so that countries ... may have equitable access to both ... (Art. 33).

Accordingly, the o/s has been defined as a "limited natural resource" which should be "efficiently and economically" utilized in order for everybody to gain "equitable access" to it. This is easier said than done, however; so the interpretation and application of these principles is still causing much debate.

3. *The Main Issues*

The central problem in the o/s controversy is how to translate "efficient and economic" as well as "equitable access" into specific technical and legal rules acceptable to all. This problem can be broken down into its orbit and spectrum components. The former involves the definition of space jurisdictions whereas the latter relates to the allocation of frequencies. The first issue is whether the orbit is in outer space or within the various national air spaces below it. If the orbit falls within national jurisdictions, it is owned by certain states, whereas if it is in outer space, it is *res communis* where all states can use it equally. Although, the issue has not yet been settled legally, the majority view favors the outer space interpretation and limits air space to about 100 km above sea level. The second issue is more complex because it concerns the method for allocating frequencies to each state. In this issue, the debate boils down to whether the allocation should be made on a "first-come-first-served" basis, or on a *a priori* plan. Although this controversy, like the orbit one, has not been definitely settled yet, the majority is with the rational planning method and rejects "laissez-faire" as inequitable and out of date. The "equitable access" principle has by now become the accepted norm in the international system, so all that remains is to draw an acceptable plan which will put it into effect. The acceptability of such plan, of course, depends on the political will of those concerned and that is where things stand now.

II — *THE CONFLICTING PARTIES*

As we have seen, the o/s controversy is not an academic debate, but is based on the conflicting national interests of the members of the international system. It is now time to identify what are these interests and who is behind them. In this section, we shall look at the o/s issues from the point of view of the parties involved and thus trace where the lines are drawn in this confrontation.

1. *The North-South Dichotomy*

From what we have said so far, the o/s problem is a political issue because it involves collective decisions on how to share scarce resources. As such the o/s issue falls within the broader politics of global economic resources and the rising demands of their equitable redistribution. As is well known, these demands are for a New Inter-

national Economic Order (NIEO) to replace the present inequitable situation in the world. As it pertains to the o/s, the present situation is so lopsided that 90% of the spectrum is controlled by 10% of the world's population. This estimate compares with another one, according to which the Americans and Russians alone use half of the spectrum. Obviously, the few people who enjoy most of the telecommunications of the world, live in the more developed countries (MDC's), while the vast majority of the world who lives in the less developed countries (LDC's) is left with whatever remains. It is on the basis of such "inequalities" that the LDC's have also called for a New International Communication Order (NICO) as part of the NIEO. The argument of the LDC's is that proper communication facilities is a condition for socio-economic development. This means that the spectrum must be reallocated in a more equitable manner along with other natural resources. If this is not done soon, the LDC's fear that the North-South gap between the "haves and have-nots" will increase thus relegating them in a permanent inferior position from which they will never be able to emerge.

Although the MDC's recognize the justification of these claims in general, they disagree as to the particulars, especially where the reallocation of the o/s orbit is concerned. Their argument is that the LDC's cannot possibly use more o/s resources now, so any reallocation of slots and frequencies will end up with a lot of unused and hence wasted spaces. These, in effect, are the two opposing sides: one for the traditional *ad hoc* evolution and the other for the rational *a priori* planification.

2. *The Protagonists*

Although the North-South dichotomy we have made above determines the broad lines of the o/s issue, there are finer divisions to be made in order to distinguish among more particular interests. Even though 130 countries or territories use satellite communication services, only half of them do so in any significant way, and of these very few star in the o/s debate.

To begin with the Northern side, the Eastern and Western components are led by the USSR and USA. These two superpowers are also the only space powers of the world. They were not only the first to go into orbit, but continue to lead in total space systems, including launchers and satellites. Thus, they stand in a league by themselves and set the pace of the debate. In spite of their ideological differences and because of their technological similarity, their o/s policies, as we

shall see later on, are very close to each other.

Following these two protagonists, come a group of advanced middle powers which are trying to develop independent o/s capacities. The Western European group led by France, Germany, England and Italy, cooperate in the European Space Agency (ESA) to create a counterweight between the two superpowers. In addition, the Scandinavian countries and some advanced Commonwealth countries (Canada and Australia) are in the forefront of o/s activities on the Northern side. Last but not least, Japan must be taken into consideration as a highly technological power.

On the other side of the debate are the vast majority of the nations of the world: about 100 LDC's. These are led by India and China, closely supported by Indonesia, Algeria and Brazil. The first two already have launching capabilities and the others are preparing their own satellite communication systems. Some others, like the ARAB League and the ASEAN states, are engaged in collective endeavours to maximize their capacity.

Finally, there is a special group of equatorial states (Congo, Gabon, Equador, Kenya, Uganda, Somalia and Zaire) led by Colombia, who claim special privileges if not outright sovereignty of the geostationary orbit.

3. *Non-State Actors*

Although states dominate international politics and hence the o/s issue, there are other political entities in the world. These may be divided into two kinds: inter-governmental (IGO's) and non-governmental (NGO's). The IGO's involved in the o/s field are:

- INTELSAT, the largest (100 members), American dominated International Satellite Agency;
- INTERSPUTNIK, a smaller (9 members), Soviet dominated Agency;
- INMARSAT, the global maritime communications organization;
- ESA, the Western European Space Agency.

Since these four Satellite Telecommunication Organizations (STO's) own and operate geosats, they are directly concerned with the o/s issue. Their technical nature, however, excludes them to a large extent from direct participation in the political debates on the o/s topics. Their collective interests, nevertheless, are represented by their dominant member states.

The last group of actors in the international scene concerned with the o/s are a group of specialized NGO's, such as:

- COSPAR, the Committee on Space Research of the International Astronautical Federation (IAF);
- SLC, the Space Law Committee of the International Law Association (ILA);
- IUCAF, the Inter-Union Commission on Allocation of Frequencies for Radio Astronomy and Space Sciences;
- IISL, the International Institute of Space Law;
- ICSU, International Council of Scientific Unions;
- URSI, International Union of Radio Sciences;
- IFRB, International Federation of Radio Broadcasters.

These scientific or industrial organizations (SIO's) perform consultative functions in STO's or lobby for the special interests of their constituents. Because they are backed by either high expertise or powerful groups, they can exert significant influence in the o/s debate. From the political point of view, they may be considered to represent either independent opinions or side with the MDC's, since that is where they are primarily based.

Of course, in addition to these, there are other important influences in the o/s debate, coming from such entities as COMSAT (The American Communications Satellite Organization); NASA (National Aeronautics and Space Agency); TELEGLOBE (Canadian Crown Corporation); OTRAG (German rocket manufacturer); ITT (Transnational Corporation); or CTCA (Canadian Telecommunications Carriers Association). These, however, are either national governmental administrations or private business institutions, so their influences are felt through the states in which they operate.

Finally, there are some sub-national governments which occupy an exceptional position in the system and hence influence the political process to some degree. The government of Quebec, for example, plays such role, because it participates in Canadian delegations to many international conferences and takes policy positions on space issues, such as its open opposition to the "geostationary club". Moreover, it may become a more direct actor, since it claims membership in certain IGO's, like ITU and UNESCO.

III — INTERNATIONAL CONFERENCES

As we have seen, the o/s conflict is a political issue concerning many national and international entities. Political issues are fought in many places, but specialized international conflicts tend to concentrate in certain fora which are particularly suitable for their resolution. The United Nations system, with its various organs and specialized agen-

cies, provides a versatile forum or international problem-solving by collective decision-making. It is therefore not surprising that the o/s issue is being thrashed within various United Nations bodies. In this chapter, we shall look at the main political arenas where o/s diplomatic activity is to be found.

1. *The United Nations*

The UN system is an all-inclusive collection of international organizations of multifunctional nature. The function which concerns us here is that of multilateral negotiation and collective policy-making in matters of outer space. Since the central political organ of the UN is the General Assembly, one can expect to find certain aspects of the o/s debate at least in one of its organs. This is so in UNGA's Committee on the Peaceful Uses of Outer Space (COPUOS). It is in the Legal Sub-Committee of COPUOS where questions on the delimitation of outer space and the geostationary orbit are considered. The Committee, in which all the principal state-actors we have mentioned are members and the non-state actors attend in consultative capacity, tries to resolve politico-legal conflicts by consensus-building procedures. Although the Committee has not yet been able to agree on a definition of outer space or the attributes of the geostationary orbit, it has produced many international agreements, the most important of which is the Outer Space Treaty. In that sense, COPUOS is a diplomatic negotiating body where international policies are decided upon. Of course, UNGA has to approve these decisions and the member states individually have to ratify them, but the substantive political process goes on in the Sub-Committee and working groups of COPUOS.

The problematic function of COPUOS is greatly helped by the debates in other UN Conferences. An important one of this type is the periodic Conferences on the Exploration and Peaceful Uses of Outer Space (CEPUOS). Such Conferences formulate the principles upon which political decisions can then be taken and ultimately reflected in international treaty law.

2. *International Telecommunication Union*

Since the o/s issue is highly technical, the most important arena of its negotiation is the ITU, a Specialized Agency of the UN. ITU exists to implement the policies and rules codified in the International Telecommunications Conventions. These ITC's establish the general laws of the international system in this field which includes the o/s.

As it derives its authority from the ITC's, ITU is the best forum for international policy-making on the o/s subject. With almost universal membership (over 155 states), ITU has a highly focused domain of competence in which it has succeeded in forging many international agreements. ITU tries to arrive at common rules for the most equitable, effective and efficient, use of the o/s resources. ITU Conferences provide an institutionalized process of international legislation which regulates specific activities and allocates particular values. They thus combine both technical and political issues in an optimal way. The supreme organ of ITU is its Plenipotentiary Conference which determines the overall policy of the Union as well as concluding the ITC's. This Conference, which takes place every 5-10 years, legitimates the negotiating and regulatory processes going on all the time in the various organs of ITU. Of these organs, the more important are the Administrative Council, the Registration Board, the International Consultative Committees, and the World Administrative Radio Conferences (WARC's). This latter body is so significant in the o/s issue that we shall treat it separately.

3. *The WARC's*

While the Plenipotentiary Conference is the supreme organ of ITU, the WARC's is where the decisions of international regulatory and distributive policies on o/s topics are taken. These decisions have the force of treaty law, binding every state, unless a government specifically opts out of it. Because they combine highly technical and specialized topics as well as generally political and legal issues, WARC's are perhaps the most complex periodic intergovernmental conferences in the UN system. They usually assemble thousands of diplomats, experts, and observers from national governments, international organizations, and other recognized institutions.

As can be imagined, the organization of these super-conferences is tremendous. The ITU Secretariat and member administrations take years to prepare them. They usually last a couple of months and the work goes on in parallel in about a dozen specialized committees and countless sub-committees, working groups, caucuses and parties. It is there, where political bargains are struck, compromises made, conflicts resolved and a final consensus emerges accommodating the interests of all participants.

Whenever the topics get too specialized or the issues too localized, extraordinary (EARC's) or regional (RARC's) Conferences are held. Thus, there may be a special Conference on Space Communications

or a Conference on the Western Hemisphere. As the technologies of outer space and telecommunications advance rapidly, these Conferences have to be held with increasing frequency, so there is always something going on, either in preparing or attending UN Conferences.

The imperatives of technological developments create new international problems, such as the o/s one, giving rise to frictions and conflicts among states, thus putting pressure on political institutions to find a common solution. As a result, the need for international allocation and regulation of the o/s becomes irresistible, and states have little choice but to accept this diminution of their political sovereignty as the price for greater economic benefits. As we shall see in the following chapters, these contradictions between economic and political interests characterize the diplomatic process going on in international conferences.

SYNOPSIS OF PART ONE

In order to summarize what we have said so far about the structural elements of o/s politics, we have drawn the diagram presented in page 226. The diagram is based on a model developed by this author in another study and shows the principal actors and arenas of the international system.

At the centre of the diagram are the four organs of a typical WARC. Related to them are the other groups of ITU at the immediate upper left and further up on the left the relevant institutions of the UN as well as other IGO's we have mentioned. Below them, at the lower left, are the main state actors and their caucuses attached to WARC. The left half of the diagram, therefore, shows the governmental and intergovernmental institutions involved in o/s politics.

The right half, on the other hand, contains primarily non-governmental bodies and non-state actors. Starting at the upper right, we have the INGO's and their lobbies in WARC; while at the lower right, are to be found TNC's and national agencies involved in space. Thus, the top half of the diagram contains international, whereas, the lower half contains intra-national actors.

The dotted lines delimit the various arenas of political activity in relation to WARC; the closer the actor is to the centre, the more immediate and direct its involvement. The solid lines connecting the boxes indicate channels of influence flow. For reasons of simplicity, we have only drawn the lines of neighbouring boxes. Indirect and mediated influences, of course, exist among all these actors to various degrees, but drawing them would have complicated the diagram too

much. As it is, we have tried to keep a balance between clarity and reality. For this reason, the diagram must be read in conjunction with the preceding chapters which provide the details.

PART TWO: WORLD POLITICS

IV — HISTORICAL BACKGROUND

The previous three chapters have sketched the structural elements of the international system which are involved in the o/s issue. The next three chapters will look upon the dynamic elements of these structures in order to see how the o/s issue has evolved up to now. We shall begin with an historical outline of the highlights which marked the recent past and shaped the present situation.

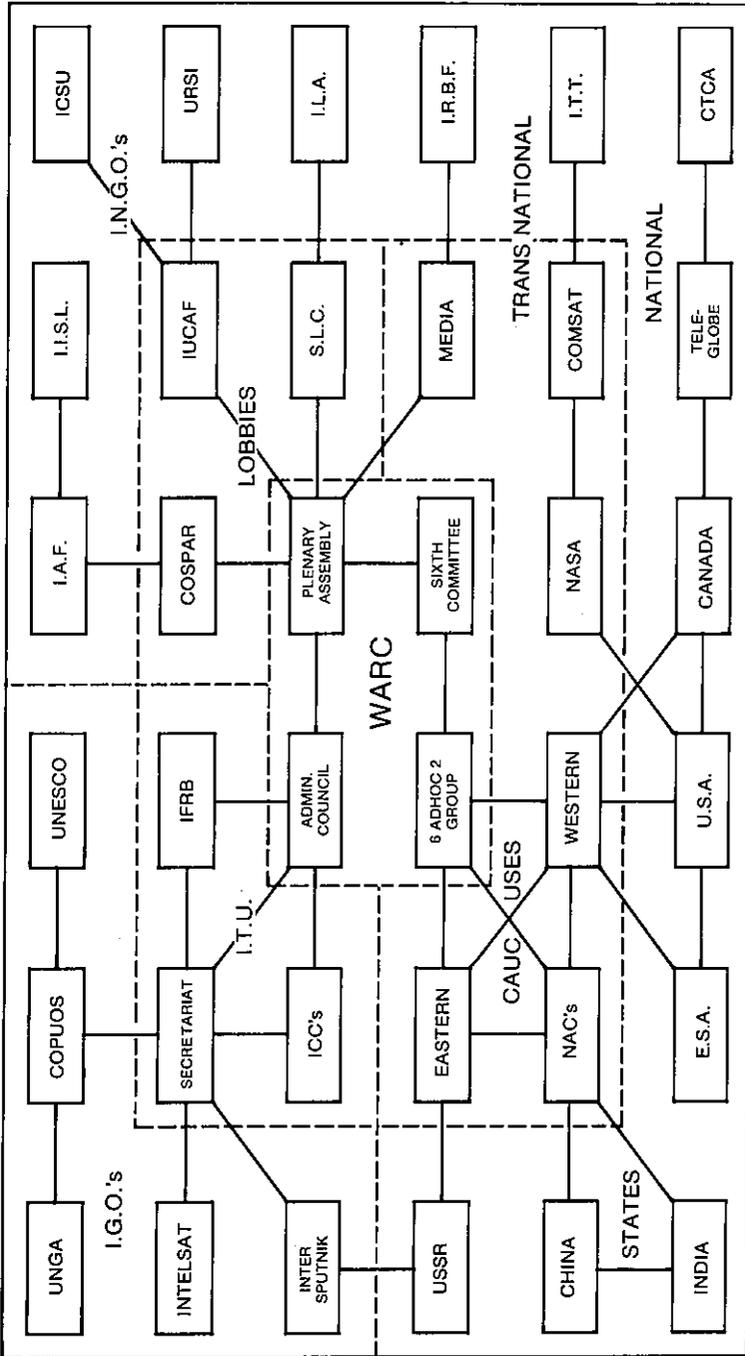
1. Space Age Politics

The international political system became involved in the o/s issue from the very beginning of the space age. As early as 1958, UNGA recommended that exploitation of outer space should be carried out for the benefit of all mankind. On that principle, it established COPUOS in order to deal with space problems and prepare international agreements to solve them.

At about the same time, in its 1959 WARC, the ITU also began to consider the telecommunication implications of satellites. As a result the ITC of 1959 reserved special frequencies for Space Services. The spectacular progress of space technology in the sixties precipitated further changes in the Radio Regulations, so that the EARC of 1963 and the ITC of 1965 had to amend the 1959 ITC to bring it up to date.

Even in those early days of the space age, the smaller states feared being left out of the promising developments in that area and pressured both UNGA and ITU to recognize that all nations have a right to equitable and rational use of space communications. The principle of access and allocation of space resources thus became established since then. Throughout the first decade of the space age, COPUOS also debated these issues and forged the basic principles of international behaviour in this new medium. The successful outcome of this long multilateral diplomatic process was finally reflected in the so-called Space Treaty of 1967. By it, the principles established until then were codified in international law. Accordingly the "exploration and use" of outer space was to be carried out for the benefit of all countries without discrimination of any kind, thus making space the "province of mankind".

MAIN STRUCTURAL ELEMENTS OF O/S POLITICS



PRINCIPAL ACTORS, ARENAS & RELATIONS

Finally, the diplomatic activities of the decade culminated with the first UNCEPUOS held in 1968 in Vienna. This global conference marked the coming of age of space politics in the international system. Although it only had consultative status, its debates and resolutions summarized the collective positions of the international system up to that time on all aspects of space affairs.

2. *The Developments of the Seventies*

Generally speaking, as the sixties established the principles underlying o/s activities, the seventies worked on their application. By then, not only space technology, but the international system itself had changed dramatically. Membership of the UN had doubled and the weight of numbers had passed from the North to the South. Along with it rose the pressures of the Non-Aligned Countries (NAC's) for a New International Economic Order.

The significance of all these changes on o/s politics was first manifested in 1971 at the WARC on Space Telecommunications. At that specialized conference, the first of its kind, the NAC's succeeded in getting ITU to disavow the "first-come-first-served" principle as it applied to the o/s. Even though the established states still kept their priority in the o/s, the *de facto* occupation of o/s could no longer be considered *de jure* ownership.

This clarification was later enshrined in the amended ITC of 1973. That Plenipotentiary Conference adopted the principle of "equitable, effective and economical use" of the o/s and accorded both the status of "limited natural resources". The new ITC had a whole article (33) promoting the "Rational Use of the Radio Frequency Spectrum and the Geostationary Orbit". Thus, the international legislation of the early seventies gave effect to the "Common Heritage of Mankind" principle as it is applied to the o/s field. By the mid-seventies the NIEO debate was in full swing, and the LDC's were stepping up their pressure for a more equitable access and redistribution of the world's resources. One spin-off from these activities was the Bogota Declaration of 1976. In it, eight equatorial countries claimed sovereign rights over their territories. Such extreme claims were of course, rejected by the majority of states who felt that the orbit was common property in space and as such was governed by the provisions of the Space Treaty.

This interpretation seemed to be confirmed by another Specialized WARC on Broadcasting Satellites held in 1977. This conference implemented Art. 33 of ITC'73 by adopting a 15-year Plan for Broad-

casting Satellite Services for most of the world. The Americas, led by the US, were not yet ready for such long-term commitment, so they delayed their Plan until 1983. Even so, two out of the three regions of ITU, did succeed in arriving at a common policy of international distributive justice which sets a precedent for further similar plans.

3. Preparing for the Eighties

By the end of the seventies, twenty years after the dawn of the space age, the international system had made great strides in adjusting to the new realities. The Conferences we have mentioned are steps in this process of adjustment. Although there were many failures or set-backs and the progress was not as good as it could be, every step of the way contributed towards a more equitable and rational o/s policy for the world.

In order to consolidate its gains, the UN system prepared for a last WARC at the end of 1979. WARC'79 was the only general global conference of ITU in the last 20 years, since WARC'59. It, therefore, marked a milestone in the history of international organization.

The main actors of the world stage prepared for this Conference years in advance by conducting research and consultations, private talks and public debates. Canada, for example, established in 1975 an Interdepartmental Committee to prepare for WARC '79. These activities took place both within and between countries in order to take individual and collective positions. The US and Canada carried out public consultations in each country and then joint meetings to clarify their positions. As a result, voluminous documentation was produced on every aspect of telecommunications. The NAC's also held many preparatory meetings, culminating in the Yaoundé Declaration of 1979, reiterating their demands for a more equitable and planned allocation of the o/s resources.

During the same period, ITU sponsored regional seminars in Africa, Asia and Latin America, as well as a Special Preparatory Meeting in 1978, to help the LDC's in digesting the formidable technical reports upon which the Conference decisions would have to be based.

Even NGO's and other private interest groups met to coordinate their positions and pressure their governments to adopt particular policies on the various issues. A highlight of these activities was the Manila Conference of ILA in 1978, when the Association adopted 100 km as the beginning of the outer space. Thus by 1979 the stage was set for this milestone WARC where some very significant decisions were going to be made.

V – CONFERENCE DIPLOMACY

Because of its importance, we shall devote this chapter to the activities of WARC'79. This ITU Conference is an excellent example of multilateral diplomacy and shows how collective international decisions are made. We will, therefore, present its salient features and describe its policy-making process from the point of view of the o/s issue.

1. *The WARC '79*

This latest WARC was a truly legislative body which assembled specifically to enact international telecommunication law for the rest of this century. The impact of its decisions, therefore, can hardly be exaggerated because they set the framework within which global communications in general and the o/s field in particular will be carried out for years to come.

The Conference met in Geneva for ten weeks in the fall of 1979. It brought together about 2,000 participants: 1,800 official delegates from 142 member states, plus observers from 35 IGO's and numerous NGO's, as well as secretariat officials of ITU. National delegations varied in number from the very large ones of 60 people for the USA to fewer than 20 for the smaller countries.

If one remembers that the last similar WARC'59 was about half the size of this one (with only 80 member states), one can imagine the growth of complexity in multilateral diplomacy during this period. Since all substantive decisions have to be made by consensus, the diplomatic interactions among the 142 delegations became countless. When we consider that the Conference had to deal with 14,000 policy proposals by debating, amending, rejecting or adopting each one, we may well wonder how anything got done at all. Yet, many things did get done, including almost 100 resolutions and a new ITC.

In order to process all these issues, the Conference had nine main Committees. Each Committee had as many Sub-Committees and each Sub-Committee had various working groups. Cross-cutting these functional bodies, were five regional caucuses for the Americas, East and West Europeans, Africans, Asians and Pacific. Each of these regions, of course, had its own sub-groups and to top it all were the super-groups of NAC's or LDC's on the one hand and the MDC's on the other.

All draft resolutions had to be processed in detail through one Committee at least and be acceptable to all the caucuses. The sheer number of items and groups meant that smaller delegations could not possibly

keep up with everything that was going on. Only the large countries could participate in all the debates and therefore influence decision-making. This limitation, in a sense, simplifies the process, in that it reduced the interventions to a manageable size. At the same time, it imposed the power realities of unequal weight that different states had in the deliberations.

2. *Six Ad Hoc Two*

In all these activities, the o/s issue occupied only one small part. The Conference Bureau delegated this particular issue to its Sixth Committee on "Regulatory Procedures". The Committee, in turn, established an ad hoc working group to examine all proposals related to the geostationary orbit. It was in this body then known as "Six-Ad Hoc Two", where all decisions on the matter of our concern were in effect taken.

From its very beginning, the group reflected the North-South dichotomy which characterized the entire Conference. With Australia in the Chair, the NAC's took the offensive, led by India and Algeria, backed by China and Iraq. The overall policy of the NAC's was to promote *a priori* planned allocation of o/s resources and their strategy was to do so by getting ITU to convene a special WARC for this purpose in the near future.

The MDC's of the other side, led by the US and UK, backed by Canada and the USSR, announced a defensive stance. Their preference for an evolutionary flexible approach to o/s allocation was based on the argument that it promoted technological progress and economical use of o/s resources. The Northern side realized that it could not get enough support to arrive at a consensus on its policies by the whole group, so it resorted to delaying tactics to block passage of the Southern proposals.

For a while, the group was faced with an impasse, which the Chairman as well as the representatives of Canada and France tried to break by various compromises, but to no avail. Finally, Algeria, who played the role of consensus-maker, proposed the winning resolution which called for the o/s planning WARC by 1984. After seven sessions, therefore, the *Ad Hoc* group reached a consensus on the NAC's wishes, which was ultimately ratified by the entire WARC.

3. *Relevant Results*

WARC'79 was not only a great diplomatic victory for most coun-

tries, but another milestone in the development of international legislation. The consensual decision-making process of the Conference proved that even the disagreeing minority was willing to go along with the overwhelming majority. Of course, compromises were made by all sides, so that most members, Canada included, could claim to have achieved their essential objectives.

In delaying the final o/s decisions by five years, the Northern side was content, while, by adopting its planning resolution, the Southern side got what it wanted. Thus international diplomacy succeeded in accommodating both the *status quo* powers and the revisionists by adopting a policy of gradual-planned change.

Although they were not overjoyed by the results, even the two Space superpowers had to live with them, hoping that their technological and economic superiority will continue keeping them ahead of the others. There is no question, however, that they can no longer dominate international policy-making procedures. Clearly, the NAC's were able to push their claims to legitimacy. Four resolutions of WARC'79 make this point quite clear. Recommendation 700 states categorically that the spectrum must be shared equitably for the interest of all nations. Recommendation 701 gives all nations equal rights in the o/s and reiterates that use does not confer priority. 702 convenes the Space WARC for 1984, and 703 does the same for the Americas RARC for 1983. These forthcoming Conferences will have to implement the already adopted policies for a more equitable redistribution of resources. Meanwhile, WARC'79 delegated increased tasks to IFRB, so that members can rely on the Board for at least a temporary reallocation of the o/s.

As we have seen, by the end of the seventies, the principles of "Common Heritage of Mankind", "equitable access", and "rational planning" for the o/s were adequately established in international law. All that remains to be done is to find the technical means and political will to carry them out. That, which is no mean task, as we shall see in the closing chapter, is the work cut out for the eighties.

VI - PROSPECTS FOR THE DECADE

With the opening of the new decade, the international community began the preparations for a new phase of the diplomatic process of deciding the optimal way of o/s allocations. This final chapter of the study will present the current situation during the early years of the eighties, and then speculate on some expectations for the foreseeable future.

1. *The NICO Demands*

As we mentioned previously, the o/s politics has become part of the demands for a NIEO. These demands had by the late seventies permeated all the discussions of the UN system far beyond purely economic issues. Even so-called technical specialized agencies such as ITU, did not escape the North-South polarization on the o/s question. For that reason, it was no secret that the "hidden agenda" of WARC'79 was the elimination of "cultural imperialism" emanating from the technological superiority of the North.

Within a year, this cry was openly heard at the UNESCO General Conference in Belgrade. As a result, the NIC's were able to push through the controversial declaration on the "New International Communication Order". NICO proclaimed the right of people to information and communication, which required more equitable distribution of knowledge by greater democratization of the mass media. To do so, the NIC's demanded more control of telecommunication facilities and established an International Program for Development of Communications.

Clearly, the UNESCO activities were in perfect harmony with the previous ITU recommendations urging its member states to establish national telecommunications development policies and to strengthen international cooperation in this rapidly advancing field. Obviously, any communication policy for the LDC's must be geared to their broader national socio-economic development goals. In this connection, control of the o/s resources is an essential element to the development of a national culture and identity.

The thesis that whoever controls the media (telecommunications facilities and o/s resources) controls the message (information and culture) is at the heart of the NICO. The NAC's fear that the space powers could use their capacity to launch geostationary satellites to maintain their oligopoly of orbital slots and thus impede the information/communication development of the Third World.

Although the Second World of Socialist states understands this wish for state control of communication, the first world, particularly the US, is dead against it. The Western belief that a "diversity of tongues" in an "open market" is the best way to true knowledge is implacably opposed to government monopoly of information. Thus one can expect to see these two ideological positions continue to fight it out in the forthcoming conferences of the UN. In this confrontation certain middle of the road countries, like Canada, may play a big role. One Conference where the debate is sure to be joined is the UNCEPUOS

II or UNISPACE'82 to be held in Vienna. This second intergovernmental Conference, taking place 14 years after the first one, will consider any question relating to space and make recommendations to the UN as to what the international community wants in this sphere.

2. *Towards the Mid-Eighties*

The central fora in which decisions will have to be taken on the o/s issue are the 1982 Plenipotentiary Conference of ITU to be held in Nairobi and the two Space WARC's, scheduled for the mid-eighties. It will be there, where the thorny questions left over by WARC'79 will have to be faced and answered.

Since the Final Acts of WARC'79, revising, updating and consolidating all previous international telecommunication legislation have just come into effect in January 1982, the Plenipotentiary Conference will be the first meeting to deal with the new situation. Accordingly, the Conference will have to revise the ITC and supplement it with new regulations and recommendations. The inconclusiveness of WARC'79 in resolving the o/s issue may force the NAC's to bring up the subject in the 1982 Conference. One strategy then could be to try and amend Article 33 of ITC to strengthen its o/s provisions. It is expected, however, that the o/s issue will most likely come up again at the WARC's, thus sparing the PC an acrimonious debate.

It should be recalled that the 1985 WARC is convened expressly to "guarantee in practice for all countries equitable access to the geostationary satellite orbit and the frequency bands allocated to space services". It is anticipated that such access will be guaranteed by a plan assigning orbits and frequencies on a *a priori* basis to each participant state.

The question then is not whether it should be the "market or planned" approach that is to be chosen, but what kind of a planned approach is best. A moderate view is that planning the o/s simply means setting the technical parameters needed to ensure the maximal utilization of the available resources with minimal interference. It does not mean giving permanent appropriation of these resources to anybody. CCIR of ITU has already looked into this question and concluded that such flexible, rather than rigid interpretation of planning would be the best for the time being.

Although all sides accept this, the question remains: what is a flexible plan? One side emphasizes flexibility while the other, planning. Since the NAC's have the weight of numbers on their side, the USA is fighting a delaying action until its space technology is sufficiently

advanced to present the others with a *fait accompli*. Because of this American threat to pre-empt slot positions, a few Western countries like Canada, tend to favor a somewhat planned approach, thus sympathising with the NAC's. With these various strategies, the nations are now preparing for the confrontation of WARC'85.

3. *Future Alternatives*

It is evident by now that during this decade, the international system must come up with a common policy for the optimal development of the o/s resources. The need for such policy is both technical and political in order to avoid waste and conflict. For this to happen, technological and political progress must go together. This means that the improvement of space technology which increases the overall capacity of o/s resources must coincide with the more equitable distribution of the existing facilities.

It is true that if the o/s is equally distributed, most of the LDC's share will not be used. This excess capacity could be leased to those MDC's who need it now for a price. Such exchange would help both sides and put into practice the "Common Heritage of Mankind" principle which should mean not only an equal right of access to o/s resources and their products, but an equitable distribution of the income from them. The nature of space communications favours multiuser sharing because satellites combine a high system with low unit cost.

Perhaps the best way to internationalize this sharing is to establish a space condominium administered by a UN Outer Space Authority (UNOSA). This agency would be akin to the proposed seabed regime and provide inclusive authoritative control in this domain of shared competence, thus forestalling any exclusive claims of national appropriation. Such arrangement would be able to maximize channel dispersion by spreading unprofitable channel distribution.

A similar suggestion is for ITU to own the o/s resources and then lease them out on a commercial basis. The income from that would be used for a communications development assistance program for the LDC's. This approach would combine market and planned benefits and thus could optimize efficiency and equity. The question is will the MDC's fund an internationally administered telecommunications system. They may do so, if they retain sufficient commercial control of such enterprise. The suggestion had been made to form an International Corporation for the purpose of auctioning the spare o/s channels to the highest bidder. The Corporation will, of course, be subject

to strict rules enforced by an International Management Authority operating within the constitution of a treaty.

In any case, whichever of these or other options is chosen, the international decision-making system will be called upon to work it out in the twenty or so intergovernmental conferences scheduled for the eighties. Since the stakes are high, one can expect to see a tough bargaining process among all states, but particularly between the North and South blocs.

This greater politicization of the UN fora will increase the stresses and strains within the technical specialized agencies, such as the ITU. In order to withstand the new pressures, these organizations may have to be restructured somewhat to enlarge their capacity for decision-making. In this connexion, more frequent WARC's than every twenty years (1959-79-99), would ease the political risks attached to such long-range commitments.

For the LDC's to be able to conduct such complex and highly technical negotiations, they will have to develop their diplomatic and political capabilities. Only then will they be capable of increasing their participation in international decision-making. The UN system is already committed to helping this process which could mean greater decentralization of international legislative methods.

In this case, improved regionalism could provide the answer. Since economic and technical necessities require global coordination, while politics and practice favor regional policies, two-tier procedures would combine the best of both worlds. This, combined with flexible planning, should take us all the way to the next general WARC scheduled for 1999.

SYNOPSIS OF PART TWO

Similarly to what we did for Part One of this essay, we shall now summarize Part Two by the diagram in page 237. Unlike the structural diagram of Part One, this one emphasizes the flow of time vertically of various types of events classified horizontally. In this sense, every box here represents either a Conference or its results. In the former case, one box of this flow-chart, if opened up, will look like the entire organigram of Part One, because all international conferences have similar structural components.

The highlights of this historical chronology which are identified in the next page have been narrated in the text of the preceding three chapters. The four decades covered in this time-table, from the late fifties to the late eighties and beyond, show the salient points of the

political history of the space age from its beginning to the foreseeable future.

Another difference between the structural and historical diagram is that in the former relationship lines represented two-way flows of influence; whereas in the latter, they are one-way chronological influences. The arrows of time are unidirectional from past to future, so that only anterior events can affect posterior.

The vertical arrows pointing downwards, are the normal cause-effect relationships of successive events of the same type, while diagonal arrows indicate influence factors between different kinds of events. In any case, this synoptic chart should give an overall idea of the relevant political activities during this first generation of the space age.

CONCLUSION

As we have seen in this paper, a study of the international politics of the o/s requires a juxtaposition of substantive issues and procedural activities. This combination produces the intergovernmental decision-making process of space telecommunication policies in the world system. The impingement of political considerations in such a highly technical field creates great difficulties in science as well as diplomacy. It is these difficulties that the political scientist must clarify and this is what we have tried to do here.

As a result, we suggested the increasing politicization of space communications as the inevitable outcome of the greater importance that technology has in society. As telecommunications become more directly involved in national and international development, the political repercussions will become more dominant.

Under the circumstances, like any scarce value, the o/s resources become a public issue of distributive justice, so, the political controversy is how to accommodate diverse and opposing claims for a share of these resources. The answer lies both to the nature of the resource and the character of the decision-making system.

As to the resource, its inclusive enjoyment produces the greatest good for the largest number, if it can be used collectively. Such shared utilization is particularly proper for large or flowing resources, like the telecommunications media in space, because their use by someone does not diminish equal enjoyment by another. Inclusive use of the o/s resources, therefore appears to be the best way to maximize their enjoyment by as many people as possible.

And yet, the rationality of this utilitarian argument must be confronted with the reality of geopolitical forces. Inclusive use of values is difficult to obtain among exclusive national states. One cannot maximize both political independence for nations and economic interdependence for the international system. These two conditions are inversely proportional to each other; as one increases, the other decreases.

In the contemporary world of increasing economic and technological interrelationships, political institutions have little choice but to develop better collective policy-making procedures. It is the struggle for this development that we are witnessing in the diplomatic activities of the various fora of the UN. Therein, the nascent, fragile political system of the world is trying to control the wildly spreading telecommunications network of the far more advanced socio-economic system.

If this struggle succeeds, we should see a global decentralized

regime managing the o/s resources in such a way as to serve more people, better. There is no question that such international organization would need fewer resources to perform greater services than each state could possibly do separately. Let us hope that the governments of the world will find the proper formula to apply themselves to this collective task.

*LA QUESTION DE L'ORBITE GEOSTATIONNAIRE ET DU SPECTRE
RADIO-ELECTRIQUE SUR LE PLAN POLITIQUE INTERNATIONAL*

Cette question d'actualité implique une distribution équitable des positions orbitales et des fréquences radio-électriques aux membres de l'Union internationale des télécommunications.

En prenant des cadres structurel et fonctionnel, on peut définir les membres du système international et les arènes dans lesquelles ils évoluent. De plus, les grandes lignes du processus suivi en politique internationale sont tracées par le biais des conférences diplomatiques multilatérales.

En conclusion, il est démontré que la question de l'orbite géostationnaire et du spectre radio-électrique fournit un bel exemple de décisions prises à l'échelle internationale, dans le but d'accommoder tous les intérêts nationaux, pour le bénéfice commun de l'humanité. En se basant sur de tels exemples, la communauté toute entière pourra mieux définir ses politiques et promouvoir ainsi des changements orientés vers des buts pacifiques.