PROJECT CONDOR: AN ANALYSIS OF THE FEASIBILITY OF A REGIONAL SATELLITE SYSTEM FOR THE ANDEAN PACT COUNTRIES

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PROJECT CONDOR: The Andean Region's Proposed Satellite System

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ABSTRACT

Project CONDOR is a proposed communication satellite system for the five countries of the Andean Community. The Project's historical-economic context, and a survey of previous feasibility studies provide the background for the legal analysis of the CONDOR satellite system: its relation to COPUOS, ITU and INTELSAT, organizations concerned with outer space and telecommunications. Several issues, legal and political, merit further study to insure Project CONDOR's success.

Le Projet CONDOR -- la faisabilité d'un système de communication par satellite pour les pays du Groupe Andin -- a été étudié à plusieurs reprises. Ces études ont porté sur les aspects techniques et économiques du projet.

Cette thèse porte sur sa faisabilité, vue d'une perspective historique et économique, qui sert de cadre à l'analyse juridique du projet. A fin d'assurer son succès, plusieurs points doivent être tenus en compte, tels que le Projet CONDOR et son rapport avec les organismes internationaux qui ont à voir avec l'espace extra-atmosphérique et les télécommunications (l'ONU-CUPEEA, l'UIT, et INTELSAT).

PREFACE AND ACKNOWLEDGEMENT

Project CONDOR - a proposed satellite communication system for the five countries of the Andean Community (Bolivia, Colombia, Ecuador, Peru and Venezuela) has been the subject of several technical-economic feasibility studies.

This thesis views Project CONDOR from a different perspective. First, it places the project in a historical-economic context: CONDOR as the result of prior regional integration efforts. Second, the thesis analyzes the project from a legal viewpoint: its relation to the international, intergovernmental organizations concerned with outer space and telecommunications issues (COPUOS, ITU, INTELSAT). Lastly, it presents a list of issues that should be addressed before Project CONDOR becomes reality.

This thesis differs from the previous studies of CONDOR in that it was written for academic purposes. It was not commissioned, requested or financed by any person or organization. The analysis and conclusions are solely those of the author, based on available documents -- those whose circulation is not restricted.

My thanks to the many persons who assisted me by providing me with documents, insights, and information. Last but not least, I dedicate this thesis to my family and to S.A.S., in grateful appreciation for their continued support of my efforts.

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THE ANDEAN COMMUNITY COUNTRIES

POPULATION FIGURES*

COUNTRY	BOLIVIA	COLOMBIA	ECUADOR	PERU	VENEZUELA	TOTALS
CAPITAL:	LA PAZ	BOGOTA	QUITO	LIMA	CARACAS	
POPULATION:	6,300,000	29,000,000	8,000,000	19,902,487	17,317,000	80,519,487
AREA: (sq. mi.)	424,200	439,825	104,510	482,257	352,141	1,802,933
POPULATION DENSITY: (per sq. mile)	14.7	67	86	40	49	--
EXCHANGE RATE/US $1.00 (Feb. 1988)	2.20 Pesos	275 Pesos	224 Sucres	45 Intis	30 Bolivares	--
TELECOMMUNICATIONS ENTITY:	ENTEL	TELECOM	IETEL	ENTEL	CANTV	--
NUMBER OF TELEPHONES:	204,747 (1983)	2,547,222	311,700 (1982)	519,703	1,021,136	4,604,508
TELEPHONE DENSITY:	N/A	6.82/100 Pop.	3.87/100 Pop.	2.97/100 Pop.	6.21/100 Pop.	--
NUMBER OF RADIO SETS:	480,000 (1984)	N/A	450,000 (1984)	875,000 (1984)	N/A	--
NUMBER OF TELEVISION SETS:	386,000 (1984)	N/A	N/A	N/A	N/A	--
LITERACY RATE:	75%	82%	90%	72%	85%	81%
INVESTMENT SHARES IN INTELSAT:	0.127985	1.178200	0.353309	0.747470	1.004326	3.41019

* Composite from various sources: ITU, World Almanac, Int'l Monetary Fund, INTELSAT REPORT (1986-1987).

LIST OF ACRONYMS

AASL	Annals of Air and Space Law
A/I	Articles of Incorporation [of ASETA]
ANCOM	Andean Community: countries signatories of the Cartagena Agreement of 1969: Bolivia, Colombia, Ecuador, Peru, Venezuela. (Chile was a member of the ANCOM from 1969 to 1976)
ANDESAT	Andean Satellite Organization. (Name proposed by this author for CONDOR's operating entity. (See EMA, OATS, TELANDSAT)
ARABSAT	Arab Corporation for Space Communications
ASETA	Asociación de Empresas Estatales de Telecomunicaciones del Acuerdo Subregional Andino. (Association of State Telecommunications Entities of the Subregional Andean Agreement [the Cartagena Agreement of 1969])
AWST	Aviation Week and Space Techonology
B/D	Board of Directors [of ASETA]
BSS	Broadcast Satellite Service (ITU-RR)
BU	Berne Union. Short name for the Berne Convention for the Protection of Literary and Artistic Works (Paris Act, 1971)
CAF	Corporación Andina de Fomento (Andean Development Corporation)
CAL/saTEL	Canadian Astronautics Limited/saTEL Consultants Ltd.
CANTV-Venezuela	Compañia Anónima Nacional de Teléfonos de Venezuela.
CATSAT	Comisión Andina de Telecomunicaciones por Satélite. (Andean Commission for Telecommunications by Satellite)

CCIR	[French Acronym] International Radio Consultative Committee, ITU
CCITT	[French Acronym] International Telegraph and Telephone Consultative Committee, ITU
CITEL	Conferencia Interamericana de Telecomunicaciones (Inter-American Telecommunications Conference)
COMSAT	Communications Satellite Corporation (U.S.A.)
COPUOS	[United Nations] Committee on the Peaceful Uses of Outer Space
DAMA	Demand Assigned Multiple Access
EMA	Empresa Multinacional Andina (Andean Multinational Corporation) (<u>See</u>, "ANDESAT", OATS, TELANDSAT)
ENTEL-Bolivia	Empresa Nacional de Telecomunicaciones, S.A.M.
ENTEL-Perú	Empresa Nacional de Telecomunicaciones del Perú
ESA	European Space Agency
ESCO	European Satellite Consulting Organization
ETV	Educational Television (via satellite)
EUTELSAT	European Telecommunications Satellite Organization
F.C.C.	Federal Communications Commission (U.S.A.)
FDM/FM	Frequency Division Multiplex/Frequency Modulation
FSS	Fixed Satellite Service (ITU-RR)
GS	General Secretariat (ASETA)
IATA	International Air Transport Association

IBS	International Business Services (New Services offered by INTELSAT)
GSO	Geostationary Orbit
ICAO	International Civil Aviation Organization
IETEL-Ecuador	Instituto Ecuatoriano de Telecomunicaciones
IFRB	International Frequency Registration Board (ITU)
IISL	International Institute of Space Law
INRAVISION	Instituto Nacional de Radio y Televisión (Colombia) (National Institute of Radio and Television dependency of the Ministry of Communications, Colombia).
INTELSAT	International Telecommunications Satellite Organization
ITU	International Telecommunication Union
ITU-RR	International Telecommunication Union - Radio Regulations
LACAC	Latin American Civil Aviation Commission (CLAC is its acronym in Spanish)
LAFTA	Latin American Free Trade Association. (Created by the Treaty of Montevideo of 1960)
LAIA	Latin American Integration Association. (replaced LAFTA in 1980)
LDCs	Less Developed/Developing Countries
NASA	National Aeronautics and Space Administration (USA)
OATS	Organización Andina de Telecomunicaciones por Satélite) (Andean Organization of Telecommunications by Satellite) (newest acronym for the operating entity proposed by ASETA). (*See* "ANDESAT", EMA, TELANDSAT).

PANAMSAT	Pan American Satellite Corporation (USA)
RARC	Regional Administrative Radio Conference (ITU)
RIT	Red Inter-americana de Telecomunicaciones (Inter-American Telecommunications Network). A microwave network functioning in Latin America since the 1970s.
SATAN	Satelite Andino (Andean Satellite) (replaced by Project CONDOR)
SATCOL	Satelite Colombiano (Colombian Satellite Project, 1976-82)
SCPC	Single Channel per Carrier
SITE	Satellite Instructional Television Experiment (India)
TELANDSAT	ESCO's Acronym for the Andean Telecommunications Satellite's operating organization. (See "ANDESAT", EMA, OATS).
TELECOM-Colombia	Empresa Nacional de Telecomunicaciones, S.A.
TTCM	Tracking, telemetry, command and monitoring [station]
TVRO	Television Receive Only (antennae).
UCC	Universal Copyright Convention (Revised, Paris, 1971)
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Social and Cultural Organization
U.S. TDP	United States Trade Development Program
WARC	World Administrative Radio Conference (ITU)

INTRODUCTION

Communications by satellite have been made possible only within the past twenty five years, but they are now so commonplace that they tend to be taken for granted. This means of communications has revolutionized our concepts of time and space, and profoundly altered every other means of communication: we no longer have to wait months or days for a response to a letter -- we can pick up a phone, dial across the world, and have an answer in a matter of seconds. Similarly, we can transmit documents across continents and oceans, do business instantly with any entity that has the necessary equipment to receive a "facsimile" copy of the paper. Satellites are versatile means of transmission -- they can carry voice, video, data or audio signals across all kinds of terrain and borders. Perhaps no other method of communication is quite as versatile as the artificial satellite which beams its message back to earth from its orbital "parking space", usually 22,300 miles above the earth.

In 1945 Arthur Clarke wrote in "Wireless World"[1] that it would be possible to transmit messages or signals to the whole world with the use of three satellites in geostationary orbit. What seemed to be a science fiction proposal at the time became reality a mere 30 years later. Nearly every country has at least one earth station with which to receive or transmit messages or signals and uses satellites for domestic and/or international communications.

The first satellite launched was the Soviet "Sputnik" in October 1957. In January 1958, the U.S. Navy launched its first satellite, and the race in space began in earnest. The Americans were quick to realize the commercial potential of this new medium of communication, and in July 1962, the first satellite transmission took place between the U.S. and Europe, when President Kennedy spoke on television. Subsequently the U.S. Congress passed the Communications Satellite Act, which provides in pertinent part that

> a) ". . . it is the policy of the United States to establish in conjunction and in cooperation with other countries, as expeditiously as practicable a commercial communications satellite system, as part of an improved global communications network, which will be responsive to

> public needs and national objectives, which will serve the communication needs of the United States and other countries, and which will contribute to world peace and understanding.
>
> (b) The new and expanded telecommunication services are to be made available as promptly as possible and are to be extended to provide global coverage at the earliest practicable date. In effectuating this program, care and attention will be directed toward providing such services to economically less developed countries and areas as well as those more highly developed, toward efficient and economical use of the electromagnetic frequency spectrum, and toward the reflection of the benefits of this new technology in both quality of services and charges for such services.[2]

The 1962 legislation created the Communications Satellite Corporation (COMSAT), and also paved the way for the creation of INTELSAT, the International Telecommunications Satellite Organization which functioned under interim agreements from 1963 to 1973.

INTELSAT's mission was to provide international satellite communications to all countries, taking into consideration Resolution 1721 (XVI) of the General Assembly of the United Nations, that ". . . communications by means of satellites should be available to the nations of the world as soon as practicable on a global and global and non-discriminatory basis, . . . "[3] and the Outer Space Treaty of 1967 ". . . and in particular Article I which states that outer space shall be used for the benefit and in the interests of all countries . . ."

> Desiring to continue the development of this telecommunications satellite system with the aim of achieving a single global commercial telecommunications satellite system as part of an improved global telecommunications network which will provide expanded telecommunications services to all areas of the world and which will contribute to world peace and understanding,
>
> Determined, to this end, to provide, for the benefit of all mankind, through the most advanced technology available, the most efficient and economic facilities possible consistent with the best and most equitable use of the radio frequency spectrum and of orbital space,
>
> Believing that satellite telecommunications should be organized in such a way as to permit all peoples to have access to the global satellite system and those States members of the International Telecommunication Union so wishing to invest in the system with consequent participation in the design, development, construction, including the provision of equipment, establishment, operation, maintenance and ownership of the system . . . "[4]

Interim agreements for INTELSAT and its signatories were drafted between 1962 and 1965, and the Final Agreements became treaties in 1973. The initial signatories to the INTELSAT Agreement were the developed countries, with the United States being the majority shareholder through its signatory, COMSAT. Between 1970 and 1987, the number of countries or territories served by INTELSAT increased from 60 to 166. Over 110 countries are members of this organization. (The most recent member is Benin, which joined in the Spring of 1987).[5]

Since its inception INTELSAT has provided international public telecommunications to its members and users. Beginning in 1975 it has leased or sold transponders to several of these countries for their domestic communication. In 1975, only 4 countries leased this capacity, but by 1986, 26 countries, or nearly one fourth of INTELSAT members were leasing or had purchased transponder capacity for domestic services. At the same time that membership in INTELSAT has increased, the costs of providing international telecommunication services by satellite has decreased, making them affordable, if not essential, to most countries.[6]

International telecommunications are essential for the expansion of national export markets, for banking transactions, and for the national corporations. Hence, in order to "develop", the less developed countries (LDCs hereinafter) need a link with the countries beyond their immediate borders, a link on which they can rely to transmit and receive the requisite information. Satellites are admirably suited for the provision of these domestic and international services since they are distance-insensitive, they can transmit ~~voice,~~ video and data over large geographic areas for the same low cost.

Communication satellites also held the promise of improving the literacy rates in developing countries, since they could be used to transmit educational television programs. Health-related, and agricultural programs were also envisioned for satellite transmission, thus improving crop yield and nutrition for the majority of the world's people.[7] So far these applications of satellite communications have not materialized to the extent or degree contemplated earlier by their proponents, but since the use of satellites is still in its infancy, these promises may yet be fulfilled in a few years' time.

These expectations as well as technological progress led to the further development and refinement of satellite technology and its application. By the early 1970s the United States had declared an "open skies" policy, allowing for competition among providers of domestic satellite services.[8] On the international level, INTELSAT remained, and still remains, the major provider of international public telecommunications.[9] However, the international skies were also subject to new entrants, under the form of domestic and regional satellite systems. In the 1970s, many European countries began discussing the possibility of having a regional satellite system, dedicated to meet their regional communication needs. An interim EUTELSAT Agreement was signed in 1977, and the definitive Convention and Operating Agreement came into force in 1985. Prior to EUTELSAT, another cooperative effort was the Franco-German satellite, Symphonie, launched for experimental purposes.[10]

It was not only the developed and sophisticated nations which sought to establish their own satellite systems. India, Indonesia, the

Arab and Latin American countries also began exploring the applications of this new communications technology to meet their own development needs.

With the cooperation of the U.S. National Aeronautics and Space Administration (NASA), India developed an experimental satellite system, the Satellite Instructional Television Experiment (SITE) by which the Indian Government aimed at providing education by television to remote communities. By 1980, India had launched its own satellite, with which it provides, inter alia, television programs for community reception, as well as voice and data transmission. Similarly, Indonesia had a satellite built and launched in 1976 for its domestic communications purposes. Since Indonesia consists of over 6,000 islands strewn over thousands of kilometers, satellite communications seemed to be the ideal technology with which to meet the domestic communication needs of that archipielago.

The Indonesian satellite also provides domestic services to Malaysia, Singapore, Thailand and the Philippines, by leasing transponder capacity to these countries.

Meanwhile, on the other side of the globe, as early as 1970 the idea of using satellites in Latin America for educational purposes was being discussed. One issue that was debated even then was whether the satellite should be national (owned by one administration), or regional (owned and operated by various countries); another related issue was the coverage the satellite should provide.

Several countries and international organizations established commissions to study the feasibility of a satellite communication and educational system for the Latin American countries.[11]

Among these was the Asociacion de Empresas Estatales de Telecomunicaciones del Acuerdo Subregional Andino (ASETA), which in 1976 agreed to establish a commission to study the feasibility of a satellite system for its member countries. ASETA is comprised of the countries signatories to the

Cartagena Agreement (or Andean Pact) of 1969:[12] Bolivia, Colombia, Ecuador, Peru and Venezuela. Initially Chile was a member of the Andean Pact, but it withdrew in 1976. Venezuela, on the other hand, did not sign the Cartagena Agreement until 1973; since then it has participated in the Andean Pact as well as in ASETA. The proposed ASETA satellite communications system (as distinguished from terrestrial systems) is called "Proyecto CONDOR," or Project CONDOR.

The feasibility of Project CONDOR is the subject matter of this thesis.

The CONDOR project is only one of several cooperative efforts that have been undertaken by the members of the Andean Community. Prior attempts to unite these countries and to undertake joint ventures have met with varying degrees of success.

Historical, geographic and political factors must be taken into account in evaluating the prospects of Project CONDOR's success. Some of these will be reviewed briefly, and the potential outcome of Project CONDOR will be assessed in that context.

1 Clarke, Arthur C. "Extra-terrestrial Relays: Can Rocket Stations Give World-Wide Radio Coverage?" Wireless World, October 1945, pp. 305-308.

2 Sec. 102(a),(b), Communications Satellite Act of 1962, P.L. 87-624, 76 Stat. 419, August 31, 1962, 47 U.S.C. §§ 701 et seq. [Citations refer to the 1962 Titles and Sections].

3 U.N.G.A. Res. 1721 (XVI), International Cooperation in the Peaceful Uses of Outer Space. (20 Dec. 1961).

4 Preamble, INTELSAT, Agreement Between the United States and Other Governments and Operating Agreement. U.S. T.I.A.S. 7532, Washington, D.C., August 20, 1971, (Entered into force February 12, 1973). [Cited as INTELSAT Agreement hereinafter].

5 INTELSAT Report 1986-1987.

6 The annual space segment utilization charge in 1965 was U.S. $32,000; by 1985 it had decreased to US $4,680. The first INTELSAT satellite, EARLY BIRD, launched in 1965, had a capacity of 240 circuits or one TV channel. The newest spacecraft (satellite), INTELSAT VI, will have a capacity of 30,000 simultaneous two-way telephone circuits and three TV channels utilizing 6/4 GHz AND 14/11 GHz frequency bands. INTELSAT Report, pp. 16, 17, back cover.

7 In 1975 UNESCO held a "Regional Seminar for Latin America on Satellite Broadcasting Systems for Education and Development" in Mexico City. One of the papers presented provided an overview of then existing and planned satellite systems. Special attention was given to the "potentialities of satellite broadcasting for education and development and to the need for regional co-operation." Presentation of E. Lloyd Sommerlad, Chief, Division of Commnication Research and Policies, UNESCO. UN/UNESCO COM. 75/CONF.703/2, Paris, 1 July 1975. (This is but one of many documents on the use of satellites for educational purposes. <u>See</u> notes 11, 12, <u>infra.</u>).

8 Federal Communications Commission, Domestic Satellite Policy (Docket No. 16495), 35 F.C.C.2d 844 (1972). This policy authorized domestic carriers to provide only domestic television relay services to various receive-only points located within the United States.

9 The INTELSAT Agreement defines "public telecommunications services . . . [as] fixed or mobile telecommunications services which can be provided by satellite and which are available for use by the public, such as telephony, telegraphy, telex, facsimile, data transmission, transmission of radio and television programs between approved earth stations having access to the INTELSAT space segment for further transmission to the public, and leased circuits for any of these purposes; but excluding those mobile services . . . which are provided through mobile stations operating directly to a satellite which is designed . . . to provide services relating to the safety or flight control of aircraft or to aviation or maritime radio navigation. (Article I(k), INTELSAT Agreement).

10 For a succinct but longer account of "Symphonie", see N.M. Matte, Aerospace Law: Telecommunications Satellites. Butterworth & Co. (Canada) Ltd. (1982), at pp. 162, 163.

11 For example, see Comisión Nacional de Investigaciones Espaciales, Buenos Aires, Argentina; Summary (in English) of a "Survey of Background Information and Draft Plan." [Undated photocopy but published prior to the 1971 World Administrative Radio Conference]. See Feasibility Study of a Regional System for Educational Television in Latin America, Final Report. FMR/COM/RPC/75/207 UNDP;UNDP/RLA/71/223.(1975). (Distribution of the Final Report was restricted, and it was impossible for this author to obtain a copy from the ITU, UNDP, or UNESCO. Several other UNESCO documents on communications policies in Latin America were not available either).

12 The Cartagena Agreement of 1969 grew out of the 1966 Declaration of Bogota, which sought to strengthen the Latin American Free Trade Association, established by the 1960 Montevideo Treaty. See Chapter 2, infra, note 12.

CHAPTER ONE

THE HERITAGE OF THE ANDEAN COMMUNITY

South America is frequently considered and described as a fairly homogeneous continent. With the exception of Brazil, this continent was colonized by the Spanish. The history of the conquest of the northern part of South America, however, is quite different from the experience of Argentina, Chile, Uruguay and Paraguay.

Trends common to the northern countries -- Colombia, Venezuela, Peru and Ecuador, now members of the Andean Pact -- which are still apparent today have their roots in both pre-Columbian and post-conquest times. Some of these currents will be highlighted but will not be delved into, since a historical treatise is not the objective of this chapter.

The land mass now known as the several countries of Bolivia, Chile, Ecuador, and Peru was once under the influence of the vast Inca empire, either directly, (as in the case of Bolivia, Chile, Ecuador and Peru) or indirectly, (as in Colombia and Venezuela) where many of the Indian tribes were subcultures of the Incas. The Inca empire was monolithic to an extent, but it harbored a number of distinct subcultures as well. The Inca empire, like the Spanish one, was ruled by a king considered to be endowed with divine qualities and rights. Church and state were virtually one and the same. Similarly, in the Spanish Empire there was no separation of powers between the king of Spain and the Catholic church. Hence, when the Spanish sought to impose their governmental structure on their new subjects, they were not imposing a totally unknown system of government on the Indians since the Indian rulers were regarded as representatives of deities, and the Kings of Europe ruled by divine right.[1]

Despite a superficially similar hierarchy -- where the ruler was all powerful -- there were vast differences between the Spanish conquistadores and the natives of the new continent, who were mostly rural, agrarian people. Eventually the Spanish system won out, with the imposition of the Spanish views of law, religious beliefs, and social structure.

The "Kingdom of the New Granada" encompassing the territory between Panama and Ecuador, was governed by the Real Audiencia, or Supreme Court in Bogota, with the King of Spain represented by a viceroy.[2]

The viceroys eventually became quite influential in their own right in the colonies, perpetuating the rigid social structure and absolutism of the far-away Spanish monarch.

The period between the first settlements at the beginning of the 16th century and the cries for independence in the 1800s was marked by a series of uprisings, rebellions by the native Indians and finally by the intellectuals. By the late 18th century, the "Criollos", those born on the South American continent, began resenting the Spanish absolutist rule and discrimination against the Criollos.

Many of the influential "Criollo" leaders had received part of their education in Europe where they came into contact with philosophers of the Enlightenment, as well as advocates of the French Revolution. Coupled with these views was the determination of the English colonies in North America to become independent from the British.

In 1810, the Viceroy of New Grenada was ousted from Bogota, a first Congress was formed, and independence from Spain formally proclaimed.[3]

Simon Bolivar, a Venezuelan by birth, led some of the initial battles against the Royalist troops, and by 1826 most of South America became formally independent from Spain.[4] Bolivar had envisioned a country, the Gran Colombia, which would include Colombia, Ecuador, Venezuela, and Panama, all united under one strong central government. He served as President of the Gran Colombia for a short time. However, other patriots wanted a more federalist type of government. This philosophical conflict resulted in the disintegration of the Gran Colombia into separate nations by 1830, the same year that Bolivar died on his way to exile.

The geography of South America also led to the lack of unification among the emerging countries. The Andes mountains have presented serious obstacles to the development of political unity, trade, transportation and other means of communication between the countries.

These accidents of geography -- mountains, rivers, jungles -- have helped preserve, if not emphasize, certain traits among the South Americans, leading to both trade and wars between the Indian tribes. They also led to the eventual establishment of trade barriers between the new republics.

Several trends, established by the Spanish rulers are apparent even today. A few of them are sketched out in general. However, they are not meant to be all-inclusive, or exclusive to the South American countries.

o The tradition of a fairly autocratic ruler and a hierarchical society with a central figure of authority. The numerous dictatorships in South America attest to continuation of this tradition.

o The role of the military, supporters of both religious and secular authority (with a few exceptions) and an important force of change, able to topple or support the existing government. They are also the recipients of a sizeable share of national budgets.

o The blurring of church and state power: From the time of the Spanish conquest the educated class received its training either in the seminary or in the army. Even now the Catholic Church and the military have great influence in the politics, economics and education in most of the South American countries.[5] Indeed, in some of them there is still no separation of church and state.

o The tradition of the "Caudillo", or local strong leaders, who have emerged for want of other leaders: local leaders are still important "factors" in achieving or deterring change within their sphere of influence.

o Societies in which legalisms and formalities abound: the nature of the former ruling power -- where the king made, executed and judged the laws (and the Viceroys perpetuated this tradition in the colonies) -- resulted in an overly legalistic mentality.[6] Even now, the amount of bureaucratic "red tape" and conditions which must be met prior to obtaining the government's permission or consent to undertake an activity is sufficient to dissuade most potential entrepreneurs.[7]

o The disenfranchisement of the majority of the population, resulting in the concentration of wealth in a minority which continues to govern the majority. Although a middle class has begun to emerge in most of the South American countries, it is not quite as sizeable--or influential-- as the middle class in industralized countries.

o Geographic barriers, including mountains and jungles, lead to isolation, and lack of adequate means of transportation and communication. Power, industry, commerce and wealth tend to be concentrated in a few cities, despite attempts to keep the population in the countryside, or to establish industrial centers in smaller cities.

Despite many similarities, and a common linguistic, cultural and religious heritage left by the Spanish conquistadores, the countries forming the Andean Group (Bolivia, Colombia, Ecuador, Peru and Venezuela) are far from homogeneous. Particulary noticeable are the differences in their natural resources and the exploitation thereof, their economic policies and goals, the rate of industrial expansion, the literacy rates and their political orientation.[8]

These elements, found at one time or other, and in varying degrees in most of the South American countries, are both their strength and their weakness. They hold the promise and continue to frustrate efforts of regional integration, including those of improving communications between the countries; they have been and are important factors in their national development and in the regional integration efforts. Chapter 2 looks at some of these efforts.

1 E. Bradford Burns, Latin America: A Concise Interpretive History. Prentice Hall, New Jersey (1986), chapters 1 and 2.

2 Ibid., p.56.

3 W.O. Galbraith: Colombia: A General Survey. Oxford University Press. London, (1966), pp. 10, 11.

4 Burns, <u>supra</u>, note 1, p. 86.

5 Ibid; pp. 313-324.

6 David Morawetz, The Andean Group: A Case Study in Economic Integration among Developing Countries. The M.I.T. Press, Cambridge, Mass. (1974), pp. 3-5, 25-50.

7 <u>See</u> for example, "Why The Emperor's New Clothes Are Not Made in Colombia." World Bank Staff Working Paper No. 368, the World Bank, Washington, D.C. (1980). Chapter 6 is especially pertinent: it discusses the bureaucratic problems faced by clothing manufacturers in Colombia. For another perspective on the issue of legalisms, <u>see</u> R. Radway, Transfer of Technology to Colombia: A Proposal to Modify Decision 24." University of Miami J. of International Law, Vol. 12, No. 2, pp. 321-341 (Spring 1980).

8 Morawetz, <u>supra</u>, note 6, pp. 25-50.

CHAPTER TWO

REGIONAL INTEGRATION EFFORTS

A) BACKGROUND

The Incas had highly developed road systems, going from what is now Quito, Ecuador, to Santiago, Chile. The Spanish expanded the system by building a network of trails or "Camino Real" in some parts of the countries, enabling packs of mules to take small amounts of goods from the mountains down to the river ports, from where they went to one of the ocean ports and off to Europe.

A few years after their independence from Spain, the South American countries became aware of the importance of transportation as a means of exporting their crops to foreign markets, primarily European countries. Mindful of the advantage of exporting greater quantities, the leaders of the new nations adopted the most modern means of transportation then available to them to expand their exports. Thus, by the 1830s the steam engine had already been adopted in Latin America, and by the late 19th century, many countries in South America had railroads.[1]

In the 1840s, Samuel Morse's telegraph system was developed, and both in Europe and South America this novel means of communication was adopted by the governments. The telegraph line often utilized the same rights of way as the railroad tracks and in some instances, foreign companies owned the railroads and the telegraph systems, since they were the main contributors of the capital necessary to build these systems. Thus, while the new countries were trying to achieve independence and economic self-sufficiency, they were simultaneously dependent on foreign technicians to install their transportation systems that would take the export products to their foreign markets.

Progress did not come cheaply: the Latin American governments incurred large foreign debts to pay for their railroads as well as for the telegraph system. (In the 20th century, this pattern of indebtedness to foreign powers has been repeated, with the acquisition of aircraft and other sophisticated equipment, including telecommunications hardware).

By the late 1800s, South America was connected to Europe and to North America by cables and telegraph systems; in some instances it was easier to communicate with a European city than with a local one. This pattern persists even now, since many of the lines of communication--whether by rail, air, radiowave or cables -- exist to facilitate external relations rather than to foment internal development or national unification.[2]

Technological advances of the 20th century have been instrumental in both helping and hindering the development of the Latin American countries. In the early part of the century, aviation promised to bring the nations together, by making it possible to fly over the mountains from one city or country to another. After the first World War, and during World War II governments became more conscious of national sovereignty and security issues involved in the foreign ownership of their means of communication, whether by ground, air or wire. They began to nationalize these sectors which until then had been developed, owned or controlled by foreign companies. In some instances the nationals were private parties or companies; in other cases, the governments became the service providers. Many of the Latin American countries remained dependent on foreign suppliers and manufacturers for their equipment, as these countries did not -- and still do not -- produce sufficient (if any) equipment for local use. Hence, even if the governments control the airwaves, airlines or railroads, they are still dependent on the external markets for equipment, from boxcars, earth stations, to television sets.

National sovereignty acquired a new meaning in regard to air navigation as well as to telecommunications.

The Preamble to the International Telecommunication Convention states that the contracting countries:

> ". . . . fully recogniz[e] the sovereign right of each country to regulate its telecommunication for the preservation of peace and the social and economic development of all countries . . . "3

Telecommunications -- radio, television, telephone and telegraph -- are vital to any nation, and not only for security purposes. Telecommunications are the "life line" of any country, for internal and external business contacts, for education, recreation and information. When the telegraph system was first developed in 1840 by Samuel Morse, the State (king or other ruler) controlled this novel system. In France, for example, a law passed by King Louis Philippe in 1850 made telegraph lines available for general use, but subordinate to the needs of the State.[4]

In the latter part of the 19th century many countries established ministries of Posts and Telegraphs, which eventually gained control of the newly developed telephone systems as well. The close relationship between telecommunications and transportation, (e.g. the use of railway easements for telegraph and telephone lines) led to the establishment of ministries of Transport and Communications in many countries. (One exception to this form of government regulation is the United States, where there is no single "Department of Communications", although there is a Department of Transportation).

The Latin American countries followed the European tradition, and over the years they have established governmental entities charged with regulating transportation as well as telecommunications. In some instances, radio and other means of broadcasting have come under the aegis of one government department while telephones and telegraphs have been regulated by another governmental entity. In yet other cases, the Ministry of Transportation and Communications has regulated all aspects of communications, from roads to radio frequencies. Regardless of the nomenclature, transportation and telecommunications are essential to the development of all aspects of a society. They also lead to economic integration, both at the national, regional and international level.

B) THE COMMON MARKET CONCEPTS OF ECONOMIC INTEGRATION

After the second World War, many countries were in shatters and it seemed that the whole world had to be rebuilt. Nationalism was still an important force, but the idea of regional rehabilitation took precedence. Hence, the idea of a common market for the European countries began to be developed and implemented in the 1950s. In the late 1950s a similar common market scheme as a means of development and integration began taking shape in Latin America.

1) THE LATIN AMERICAN FREE TRADE ASSOCIATION (LAFTA)

In addition to the European example, President Kennedy"s Alliance for Progress was influential in fostering the Latin American Common Market. By 1961, nine countries of Latin America had signed the Treaty of Montevideo, drafted in 1958, thereby creating the Latin American Free Trade Association (LAFTA).[5] LAFTA members were Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay; Initially, Bolivia was not a member.

The European and Latin American common markets were based on foreign trade theories that emanated from England. They centered on customs unions and on the economic integration of industrialized countries. Their main purpose was to achieve a balance in patterns of production and consumption by means of geographically discriminating tariff mechanisms. The end result would be the freeing of trade among members of the customs union, and minimizing trade diversion.[6]

Some of the main purposes of LAFTA were to reduce trade barriers, promote industrialization, and enhance trade and cooperation among the signatories. Another objective was to stimulate import substitution by developing local markets with low-cost manufacturing. Ideally, the Latin American common market would offer each and every country equal opportunities to grow economically and to make the countries less vulnerable to external economic forces.[7]

True integration between the countries did not materialize. As early as 1963, it was noted that

> "...LAFTA as presently constituted cannot provide enough economic impetus to offset slumping import capacity and to put zonal industry on an efficient, competitive basis .... [T]he same divisive factors that bedeviled LAFTA's [earlier] negotiating session ... have forced postponement after postponement ... The hope is that LAFTA can be spurred out of its present difficulties by political means, by decisions on trade and foreign policy which can only be made at the highest executive level."[8]

LAFTA was not and has not been able to achieve economic integration among its members, spanning a distance of over 4500 miles from Mexico to Argentina, and including nearly as many disparities of economy, topography, and demographics. From its inception until the present, LAFTA has been unable to overcome the difficulties that hampered its early integration objectives.[9] Hence, when the LAFTA encouraged subregional groupings such as the Andean Pact, perhaps it was hoped that fewer countries, with more in common and closer to each other geographically, would be more successful in their attempts at economic integration. The subregional groups would accelerate the implementation of LAFTA's goals of free trade and industrialization. These subregional agreements were to be time limited in duration, and would expire once LAFTA became a common market.[10]

2) **THE CARTAGENA AGREEMENT (ANCOM)**

In 1966 Chile, Colombia, Ecuador, Peru and Venezuela signed the Declaration of Bogota, creating the Andean Group integration scheme. Bolivia joined the group in 1967 and in 1969 these countries signed the "Agreement on Andean Subregional Integration." (Venezuela refused to ratify it until 1973, when it joined the Andean Group).[11] LAFTA's Permanent Executive Committee approved the Cartagena Agreement in 1969 and thus the Andean Group was born. It is known by several names: the Andean Pact, the Andean Group, the Andean Community, and the Cartagena Agreement. For the sake of clarity, it will be referred to as the Andean Pact or Andean Community (ANCOM) hereinafter.

The objectives of ANCOM include, *inter alia*,

> Article 1. "...to promote a balanced and harmonious development of the Member States, to accelerate this development through economic integration, to expedite their participation in the integration processes as stipulated in the Montevideo Treaty, and to create a climate favorable to the conversion of LAFTA into a common market, all of these designed to secure the progressive improvement of the living standards of the peoples of the Subregion.
>
> Article 2. ...an equitable distribution of the benefits resulting from integration of the Member States... The achievements... should be periodically assessed, taking into account, the development of... gross territorial product, the generation of new employment, and its capital formation.
>
> Article 3. To achieve the goals set by the present Agreement, the enumerated operations and measures shall be employed, *inter alia*:
>
> (a) Coordination of economic and social policies, and unification of domestic law in pertinent fields;
>
> (b) Joint programming, intensified subregional industrialization processes, and execution of Sectorial Programs of Industrial Development; . . .

(g) Preferential treatment to be accorded to Bolivia and Ecuador.[12]

The Cartagena Agreement included special provisions for Bolivia and Ecuador, taking into account their generally unfavorable economic situation. These two countries were to benefit from special tariff arrangements, rather concessionary terms which did not apply to the other members of the Agreement. With time, however, it became obvious that a reassessment of the Agreement's original terms was needed. Many of its provisions were not implemented, or else they took longer than anticipated to become effective.[13]

An important and controversial provision of the Cartagena Agreement is "Decision 24 of 1970." It established the framework for control of foreign capital, treatment of foreign technology, control over foreign banks and access to local credit for foreign and mixed companies. (This Decision also has various provisions relating to the transfer of technology, patents and trademarks).

Decision 24 was designed to promote indigenous capital formation, to protect the ANCOM countries from foreign domination and to prevent internal competition among its member countries in attracting foreign capital and technology. The principal focus of Decision 24 was to regulate the flow of new foreign capital and technology into the region and to direct its allocation without affecting the outflow of existing capital.[14]

Over the years this provision proved to be a major stumbling block in the trade agreements of the ANCOM countries. Several proposals were made to liberalize some of its provisions, since it appeared to dissuade many foreign investors. Under the 1976 revisions, foreign investors were granted exemptions from the Decision's residency requirement, so that they would be considered "nationals" after one year's uninterrupted residence in the ANCOM country. However, to be considered a "national", the foreign investor had to renounce the right to reexport his capital or profits.[15] In 1976, Chile disagreed with the other ANCOM countries' interpretation of Decision 24; it withdrew from the Andean Pact, stating that it needed to ease foreign investment restrictions, which it could not do under the terms of Decision 24.[16]

Since 1976, there have been periodic reevaluations of the terms of the Montevideo and Cartagena Agreements. In 1980 the member countries signed a new Montevideo Treaty, thereby creating the Latin American Integration Association (LAIA). Its purpose is to continue the integration process initiated in 1960 under the Latin American Free Trade Association.[17]

Another organization which has also played a role in intraregional integration is the Corporación Andina de Fomento (CAF), or Andean Development Corporation, established in 1968. It is considered to be the Andean Group's single most important channel for subregional investment.[18] Over the years the CAF has given substantial funds to transport and communications, and in 1984 alone, over 27% of its funds went to these sectors. CAF's resources, however, are limited, and recently foreign investment sources have diminished. Whereas in 1983 CAF received nearly US $76 million, in 1984 it obtained only US $52.8 from foreign sources.[19]

Generally speaking, the economic outlook for the countries of the Andean Pact is not one of total gloom, but neither does it promise great improvement over the next few years. Nor has LATFA, ANCOM or LAIA been a resounding success in achieving tariff reductions and increased trade among the signatories, as had been contemplated when they were first established. What has been accomplished may be seen in part, by examining some specific attempts at integration of particular economic sectors. These are briefly examined, infra.

C) TRANSPORTATION

One of LAFTA's goals was to establish a common market through which to enhance the countries' economies and trade within Latin America.

Fundamental to increasing trade is adequate transportation of goods, from their place of production to their end market. Another fundamental requirement are other reliable means of communication to establish and maintain schedules, determine market conditions and prices, both domestically and beyond the national borders.

a) Ground Transportation

Since ground transportation (roads and railways) is in the hands of local authorities and not governed by any regional organization, it will not be considered at length here. Suffice it to say that in Latin America ground transportation is not the most practicable. Mountains, jungles, rivers without bridges, and lack of funds for the maintenance of roads and rails conspire against their being effective means of communication. In addition, the governments accord different degrees of priority to terrestrial communications, resulting in varying levels of their development and maintenance. The ANCOM countries, however, rely primarily on ground transport, which increases the overall cost of movement or shipment of goods. Another factor which increases costs is that in some instances the distances involved in intra-ANCOM trade are longer than those in intra-European transport. Hence, because of road conditions and high costs of movement, many communities remain relatively isolated from the mainstream of development.[20]

b) **Air Transportation and Communications**

New technologies of the twentieth century (aircraft, telephones) have helped reduce this isolation, but despite increased air transportation and expanded telecommunications networks, many rural areas in Latin America remain relatively untouched by "progress." In some instances, it is still easier (if not less expensive) to communicate with foreign cities and countries than domestically.

This situation prevails in other parts of the world as well, and is not peculiar to the ANCOM countries. One solution to reducing isolationism, and costs, while increasing efficiency and trade relations, is the formation of regional organizations to implement common ideals and objectives.

At first glance, air transportation and telecommunications appear to lend themselves to such regional enterprises. Both fields share many characteristics which are both uniting and divisive factors. Some of the characteristics they share are:

o The regulation of national aviation and communications is the prerogative of each government.

o For reasons of "national security" both sectors tend to be in the hands of the government, or have been nationalized.

o Aviation and telecommunications are important on the national, regional and international level. Although sovereign rights are important, the international treaties by which these sectors are bound take precedence.

o International treaties and conventions regulate civil aviation and airlines as well as telecommunications: The Chicago Convention and Warsaw System, the ITU Convention and INTELSAT agreements, respectively. Furthermore, the use of outer space has implications for aviation and telecommunications alike.

o Aviation and telecommunications, by their inherent nature, can and do transcend national borders. In this respect these sectors are unique since their "transborder" activities and relations are of great consequence for integration efforts, diminishing isolationism, and achieving economies of scale.

o Both sectors link the country to the international community, and play an important role in making the world aware of a country's existence, as well as in its participation in the global economy.

o Both are simultaneously foreign revenue users and generators, although not necessarily in the same ratio or proportion. They both require huge investments, mostly in foreign currency.

o Aviation and telecommunications rely heavily on equipment manufactured by the developed countries. Though native industries might manufacture spare parts or other small items, the bulk of the hardware -- aircraft or earth stations -- comes from a few foreign manufacturers.

o Fleet and network size depend on demand, utilization, degree of foreign trade involved.

o The infrastructure is vital to the functioning of the "superstructure." i.e.: airports and all associated ground facilities are essential to the aircraft and airlines' functions. Similarly, without adequate network switching equipment, earth stations, cable or microwave links, telephone and television sets, the superstructure - a spacecraft or satellite - would be useless, or of limited value.

o Adequate statistics are essential to aviation and telecommunications, to set tariffs, forecast demand, traffic flows, and plan for the growth of the sector. These data are difficult to come by in Latin America, and this lack of figures has been a hindrance to the development of both sectors.

Tariffs for national and international use are important revenue producers. In the case of international traffic (whether of airlines or telecommunications) the tariffs or other charges are based on bilateral or multi-lateral agreements.

These factors should be borne in mind in analyzing two efforts at the development of regional systems in ANCOM. The first pertains to civil aviation; the second to telecommunications.

An overview of the Latin American Civil Aviation Commission (LACAC) will be helpful in evaluating the feasibility of the proposed regional telecommunications network, Project CONDOR.

c) **The Latin American Civil Aviation Commission (LACAC)**

In 1973, after various regional conferences, several of the Latin American countries formally established the Latin American Civil Aviation Commission (LACAC).

Participation in LACAC has not been limited to LAFTA or ANCOM countries. Rather, signatories to the LACAC agreement range from Argentina to Mexico, and include Jamaica, the only non-Spanish speaking member. LACAC began with fifteen members, and now has twenty signatory countries.[21] LACAC's objective was

> ". . . to provide the civil aviation authorities of its member states an adequate structure within which they could discuss and plan all the measures required for the cooperation and coordination of the civil aviation activities."[22]

LACAC sought to complement rather than duplicate the work of the International Civil Aviation Organization (ICAO). Its members considered that a regional organization would be better able to address the politico-economic issues that arise in regard to international air navigation.

The original objectives of LACAC, included, *inter alia*:

- to study air transport needs within the region;
- to collect and analyze statistical data on air transport within LACAC member countries;
- to analyze tariff and capacity clauses, including predetermination [of capacity] clauses;[23]

Over the years LACAC has studied these and other issues related to air transportation of passengers and cargo, with tariff problems as well as over-booking of passengers remaining among LACAC's principal concerns.[24]

Even prior to LACAC's establishment, air transport was seen as an important element in the development of regional trade, as a means of linking together cities and countries which heretofore remained isolated because of the mountainous terrain, and lack of adequate ground transportation or other means of communication. Ideally, regional integration, greater trade and "economies of scale" could be achieved by having a regional airline rather than many small and costly national companies. A regional airline would foster the growth instead of draining the limited economic resources of the LAFTA/LACAC countries. As early as 1963, greater cooperation between the governments in building and maintaining airports, runways and communications systems was proposed.[25]

Twenty years later, the LACAC airlines are still experiencing economic difficulties that perhaps could be mitigated if not resolved by a regional air transport company. Although such a regional corporation has been discussed, it has yet to materialize.

In the 1970s several of LACAC members participated in "pooling" arrangements, on long-distance routes. These produced economies in the use of fuel for the airlines, and LACAC members were urged to engage in medium and long-term planning of such arrangements.[26]

The need for, and benefits of wider pooling arrangements, or of a regional airline could be determined once better statistical data were available on intra-and inter-regional traffic. However, LACAC was unable to obtain this information in its early days.[27] More recently, however, some of this data has been collected by the International Air Transport Association (IATA), although break-downs by country are not given.[28] Although statistics are available on the growth of international transport of both passengers and cargo, few data have been available on intra-and inter-regional carriage. The lack of adequate data is one factor hampering the formation of a regional airline since no one company knows what it stands to lose or gain, in terms of traffic or income, by such an association.[29]

Another factor which may inhibit the establishment of a regional air transport system is the pattern of ownership of the airline. In some countries, the government has an outright monopoly over at least the international "flagship" company (e.g. Peru, Ecuador and Bolivia). Other airlines are owned partially by the government and by private parties (e.g. Venezuela, Colombia).[30]

In addition to the economic problems that arise from trying to formulate an equitable regional pooling arrangement, let alone a regional corporation, political issues frequently are inhibiting factors that are not overtly addressed. Depending on the political bent of a particular government in power, other countries may be reluctant to enter into or continue certain arrangements which might lead to their losing some of their own authority, autonomy, or control over their aircraft.

Another major stumbling block in reaching consensus on a regional airline is the fact that many of the LACAC countries are not signatories to the Warsaw System or other liability conventions. The lack of adherence to these conventions has been an on-going concern.[31] Among the ANCOM countries, only Colombia, Ecuador and Venezuela have ratified or adhered to the Warsaw System and The Hague Protocol of 1955.[32] The lack of uniformity in protection from liability, as well as the lack of consensus on a conversion of the gold Franc are impediments to pooling arrangements and to a regional airline, since the country in which the aircraft is registered would be liable in the event of an accident or other mishap.[33]

Another issue that works against the creation of a regional airline to operate on the lucrative

South America-North America routes is the U.S. noise-abatement regulations. A few years ago the United States Department of Transport instituted regulations that prohibit the landing of aircraft at certain airports unless they meet certain environmental standards: lower levels of engine noise. This unilateral decision of the USA has had detrimental consequences, resulting in a decrease in the number of flights to the United States from South America because not all aircraft can be retrofitted. Since the B707, B720 and DC8s -- the largest number of aircraft operated by the ANCOM countries --[34] do not meet the American noise abatement standards, they cannot fly into the U.S.A. Decreased flights obviously result in decreased revenues from the carriage of passengers,[35] although not all the airlines of the ANCOM countries are equally affected. The fact remains, however, that in the 1980s, LACAC member countries have experienced a loss in revenues from air transportation both to/from the USA and within the LACAC region.[36]

The flow of passenger traffic to Latin America has decreased in the 1980s due to several factors:

perceived political and economic instability of some countries, lack of adequate tourist facilities (hotels, ground transportation) and the high cost of travelling south. Air fares between several cities within ANCOM countries and between ANCOM capitals and the United Sates are additional dissuading factors.[37] Generally speaking, travel outside the ANCOM countries is less expensive and easier, since there are a greater number of airlines serving the cities. However, the purchasing power of the local consumer should be kept in mind. When an average monthly income is well below US $500, a journey by air, whether within ANCOM or to another continent, can be prohibitively expensive.

The airlines in Latin America face an additional difficulty: the deregulation of the airline industry in the United States.

The small national and usually government-owned companies find it increasingly difficult to compete with the big U.S. airlines. The South American countries perceive actions such as unilateral deregulation as a threat to their survival[38], the imposition of a foreign politico-economic system and contrary to ICAO resolutions.[39] The "Davids" in Latin America are at a serious disadvantage in their struggle with the "Goliaths" of North America and Europe,[40] in the provision of international air transport services. The international routes are the ones that earn these airlines their foreign currency revenues; if these decrease, then the airline must curtail its foreign service, and brace itself to lose even more foreign revenues.

In summary, although several factors exist that mitigate against the viability of national airlines, other considerations could enhance their viability as a regional corporation:

- Lack of foreign revenues (due to small, obsolete fleets, or to aircraft that cannot fly to certain foreign countries because of noise abatement regulations): a regional fleet would maximize the aircraft's utility, and revenues.

- Unilateral policies adopted abroad, which the LACAC countries must take into account in their bilateral negotiations for air routes and stopping places (e.g., noise abatement rules and deregulation of the airline industry in the USA.): if twenty countries present a united front, they may be able to win more concessions than if only one or two protest against these measures.

- Relatively high tariffs and low passenger loads, which prevent the optimal utilization of the aircraft: a regional airline would optimize the use of the aircraft, and increase passenger - cargo revenues.

- Underdeveloped infrastructures (airports) and lack of trained personnel and staff: regional training programs could be instituted, if they don't exist already.

- Capital-intensive superstructures (aircraft, and all ancillary equipment which are usually imported from the few manufacturing countries). In order to acquire the "hardware" the airlines must increase their foreign revenues, but are unable to do so with existing fleets and international competitive policies: if they pooled together their foreign revenues, they could also acquire the necessary aircraft.

- The number of countries which could be potential participants in a regional airline: LACAC has twenty members, each of which could participate in varying degrees. The country's "investment share" - and profits - could be prorated.

- National policies allowing for domestic competition could be expanded to include international competition. (In most of the LACAC countries airlines which serve domestic routes only are subject to and allowed to compete with one another. Economic reasons supercede political ones, at least domestically, since there is no need to have only one flag carrier).

Many of the above factors could be resolved, or at least mitigated, by placing greater emphasis on regional integration and developmental goals, and modifying the political stance which puts nationalism at the top of the priority list.

CONCLUSION:

In reviewing integration efforts of the Latin American countries, several conclusions can be drawn:

1) After more than a quarter century of existence, LAFTA has not achieved the success or growth originally envisioned, certainly not to the level achieved by its European counterpart. This is perhaps an "unfair" comparison, since the "starting point" of both areas was/is quite different. Secondly, as Puyana noted,[41] the economic integration theories that serve as the basis for the common market concept emerged from and are applicable to industrialized societies. The Latin American states are nearing industrialization, but they remain primarily agrarian.

2) Differences in economic resources and their development or exploitation are obstacles to regional integration. Bolivia and Ecuador still lag behind, and remain the beneficiaries of special trade and tariff conditions. These on-going concessionary terms are due, in part, to the language and terms incorporated in Article 3(g) of

the Cartagena Agreement. Their modification or amendment would require lengthy negotiations which may or may not be to the economic or political advantage of any of the ANCOM countries.

3) The political will to integrate may exist, but it seems to be permeated with centuries-old skepticism of "the other country's" goodwill and intentions. This lack of trust hampers cooperative efforts. Rather, political barriers remain nearly as insurmountable as geographic obstacles. Economies of scale and greater, more efficient use of the resources could be made by "regionalizing" them, for instance in a regional air transport corporation. This has not happened.

Political, geographical, and economic and cultural impediments have hampered integration objectives of LAFTA and ANCOM so far. It remains to be seen whether these barriers can be surmounted by, and with new methods of communications.

Since the 1970s LAFTA and ANCOM have been studying and discussing the feasibility and need of a dedicated communications satellite system.

In speaking of a regional satellite system political and economic issues are important. On the one hand, each country jealously guards ". . . its sovereign right to regulate its telecommunication . . ."[42] but on the other hand one object of telecommunication is to ". . . facilitate peaceful relations, international cooperation and economic and social development by means of efficient . . . services . . . ."[43]

These seemingly conflicting principles need to be harmonized if integration - at least in telecommunications - is to be achieved.

Project CONDOR is another example of regional integration efforts, and is analyzed in the following chapters.

1 Burns, supra, chapter 1, note 1, pp. 148-153.

2 Ibid; pp. 148-153.

3 International Telecommunication Convention, Nairobi, Kenya, 1982.

4 Emery, W.B., National and International Systems of Broadcasting. Michigan State University Press(1969).

5 Treaty Establishing a Free Trade Area and Instituting the Latin American Free Trade Association (Montevideo Treaty), Feb. 18, 1960, 30 U.N.ECOSOC, Supp.4, U.N.Doc.E/333E/CN12/AC. 45/13/Rev.1 (1960).

6 Puyana de Palacios, Alicia. Economic Integration Among Unequal Partners: The Case of the Andean Group. Pergamon Press (1982), pp. 17, 18. "Trade creation" meant shifting high cost domestic production to lower cost production in a partner country, whereas "trade diversion" involved a shift from lower cost production outside the union to a higher cost source of supply within it.

7 Ibid.; at footnote 48 to chapter 1, citing UN/ECLA, the Latin American Common Market, New York (1959).

8 MacLeish, W., Economic Integration in Latin America: LAFTA. New York, Vision, Inc. (1963), pp. 5, 6. [Cited hereinafter as Vision Report].

9 The Latin American Integration Process in 1984, p. 19. Inter-American Development Bank, Washington, D.C. and Latin American Integration Association, Buenos Aires. (No publication date is given). [Cited as LAIA-1984 hereinafter].

10 Puyana, supra, note 6, p.24.

11 Ibid.; p.3.

12 Treaty of Cartagena, May 26, 1969, reprinted in 8 International Legal Materials. Translated by Helen L. Clagett from Spanish text provided by the

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Instituto Colombiano de Comercio Exterior, Bogota, Colombia. [Bolivia, Chile, Colombia, Ecuador, and Peru signed the Agreement on May 26, 1969. Venezuela took part in the negotiations, but did not sign the Agreement until 1973.] [The Permanent Executive Committee of LAFTA approved the agreement on July 19, 1969, in accordance with Article 110 of the Montevideo Treaty].

13 See, supra, note 9, at p.19.

14 R. Radway, Venezuela Revisted: Foreign Investment, Technology and Related Issues. Vanderbilt Journal of Transnational Law, Vol. 15 No. 1, pp. 14-16 (Winter 1982).

15 Junta del Acuerdo de Cartagena, Mecanismos de la Integración Andina. Lima, Peru (1977), pp. 51-61.

16 Radway, supra, note 14, p.12. Radway has also presented a proposal to modify Decision 24 in "Transfer of Technology to Colombia", University of Miami J. of International Law, Vol 12, No. 2, pp. 321-341 (Spring 1980).

17 The ineffectiveness of LAFTA led to its transformation into the Latin American Integration Association (LAIA). The treaty creating LAIA was signed at Montevideo in 1980, and came into effect in 1982. The eleven countries that originally formed LAFTA are the same constituents of LAIA. LAIA-1984, supra, note 9, at p.19.

18 Ibid., p. 100.

19 Ibid., p. 100.

20 Morawetz, supra, Chapter 1, note 6, and Puyana, supra, note 6.

21 The LACAC "Estatuto" (Statute of Incorporation) was signed in Mexico City, December 14, 1973. The original signatories were: Argentina, Brazil, Colombia, Costa Rica, Chile, Dominican Republic, El Salvador, Guatemala,
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Honduras, Jamaica, Mexico, Nicaragua, Panama, Uruguay and Venezuela. Later on Bolivia, Cuba, Ecuador, Paraguay and Peru joined LACAC. [The Spanish acronym for the Latin American Civil Aviation Commission is CLAC, but will not be used here].

22 LACAC Statute, Article 4. (Translation from the Spanish by S. Ospina).

23 LACAC, Tenth Anniversary Special Report, Dec. 13, 1983, pp. 3-6. [Cited as Special Report hereinafter].

24 J. C. Bogolasky, Report on LACAC, Annals of Air & Space Law, Vol. IX, pp. 507-511 (1984); Vol. XI, pp.363-375 (1986).

25 Vision Report, <u>supra</u>, note 8, p.26.

26 LACAC, Second Meeting Report (Montevideo, December 1-7, 1976), Appendix 2, p.2, No. 6.

27 Ibid.; p. 1, No. 4.

28 World Air Transport Statistics, IATA, pp. 28-31, (June 1987).

29 The lack of adequate data/statistics has been mentioned in nearly every LACAC report, since 1974 to 1983. It should be noted that inter-regional traffic decreased in the early 1980s in part due to the Argentine-British conflict over the Malvinas/Falkland Islands. (<u>See</u> LACAC Special Report, <u>supra</u>, note 23, p. 16).

30 Information supplied by the airlines of these countries.

31 <u>See</u> LACAC Special Report, <u>supra</u>, note 23, pp. 3-6; Bogolaski, <u>supra</u>, note 24, pp. 507-511, (1984).

32 Convention for the Unification of Certain Rules Relating to International Carriage by Air Signed at Warsaw, October 1929). Shawcross
(footnote continued)

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publication, Issue 19, pp. A 17-31 (1985). [Cited as The Warsaw System hereinafter].

33 In this respect, Article 12 of the Chicago Convention states that "[a]ircraft have the nationality of the State in which they are registered. Further, "An aircraft cannot be validly registered in more than one State, but its registration may be changed from one State to another." One purpose of assigning a "nationality" to an aircraft is to be able to assign responsibility for that aircraft to the country of registration. Chicago Convention, Articles 17, 18. Convention on International Civil Aviation, signed at Chicago, 1944, entered into force in 1947. [Cited herein after as it is commonly known: the Chicago Convention].

34 See note 40. See World Air Transport Statistics, supra, note 28, pp. 53-97.

35 LACAC Special Report, supra, note 33, pp. 13-17.

36 LACAC, Special Report, supra, note 23 pp. 13-17.

37 For example, some of the airfares between the capitals of ANCOM countries, and between these cities and New York and Paris are given below:

CITIES FROM (return trips)	TO	DISTANCE (miles)	RATES US $
BOGOTA	Caracas (Ven.)	638	$276
	Quito (Ec.)	450	207
	La Paz (Bol.)	2215	844
	Lima (Peru)	1177	509
	New York (USA)	2490	772
	Paris (Fr).	5369	1692
CARACAS	La Paz	2304	730
	Lima	1713	684
	Quito	1085	409

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LA PAZ	Lima	669	282
	Quito	1499	636
	New York	4146	1056
	Paris	8539	2288
LIMA	Quito	830	636

(Air fares for comparable distances (eg., New York-Paris are as low as $450 -- and as high as $1500).

(Information obtained from U.S. travel agencies, August 1987).

38 LACAC, Special Report, supra, note 23; Bogolaski, supra note 24; AWST, August 31, 1987, pp. 40 ff.

39 Bogolaski, J.G., AASL, Vol. XI, pp. 363-375 (1986).

40 AWST, August 31, 1987, p. 59.

41 See Puyana, supra, note 6.

42 Preamble, ITU Convention, supra, note 3.

43 Ibid.

CHAPTER THREE

THE ANDEAN SATELLITE: PROJECT CONDOR

A) PROJECT CONDOR'S CONTEXT

Project Condor is the name given to the Andean Community's proposed regional satellite communications system, which has been under consideration for a number of years by ASETA.

CONDOR's purpose would be to meet the communications needs of Bolivia, Colombia, Ecuador Peru and Venezuela.

ASETA is the acronym for the Asociación de Empresas Estatales de Telecomunicaciones del Acuerdo Subregional Andino, comprised of ENTEL-Bolivia, TELECOM-Colombia, IETEL-Ecuador, ENTEL-Peru and CANTV-Venezuela -- the governmental entities authorized in their respective countries to provide public international telecommunications.[1]

Project CONDOR is the outgrowth of regional integration efforts and of the availability of new communication technologies. By the early 1970s, the Latin American Free Trade Association, the Cartagena Agreement, the Latin American Civil Aviation

Commission, inter alia, had been established to increase trade and foment regional economic growth and cooperation. Mindful of the importance of telecommunications and their potential in furthering their integration efforts, the Latin Americans began paying considerable attention to the application of new technologies in their region.

Hence, it was logical for some of the LAFTA countries, and later the ANCOM countries, to establish an association to study the need for a regional satellite system. Thus, ASETA was established in January 1974, as a result of the First Meeting of Experts in Communications and Transportation of the Andean Pact. A second meeting of the same Experts was held in May 1974; from that meeting, and a concurrent meeting of the Ministers of Communications emerged the Association as well as one of the fundamental recommendations regarding ASETA, Recommendation MC-11.[2]

A short survey of what was happening globally in satellite communications serves as a context to ASETA's creation.

The decade of the 1970s was an important one for the evolution (some might say revolution) in communications by satellite. By 1973, INTELSAT was operating under permanent agreements, the number of countries it served had grown from an initial 15 in 1965 to 102 countries in 1975; the number of pathways (earth station to earth station) available increased from one in 1965 to 406 in 1975. Concomitantly, the charges for utilizing INTELSAT'S services were one fourth as high as in 1965.[3] Satellite communications held great promise in drawing together the countries of the world, making it possible for people everywhere to watch events of global interest, like the lunar landing on July 20, 1969.

By 1970, several groups of countries were discussing the possibility of having their own regional or national satellite systems. India and Indonesia planned and actually launched their own satellite systems by the end of the 1970s. The Latin American countries were also discussing the feasibility of an educational television satellite system, and from 1970 to 1975, at least two feasibility studies were conducted on behalf of the Latin American countries.[4]

In regard to economic integration efforts, by 1974, the Montevideo Treaty that established the Latin American Free Trade Association (LAFTA) and the 1969 Cartagena Agreement creating ANCOM[5] were in full force, generating much enthusiasm and interest in the member countries and abroad.[6] Several regional associations to promote trade and transportation (e.g. the Latin American Civil Aviation Commission (LACAC) also emerged.[7]

It was only natural and logical, therefore, that an association be formed to foment telecommunications between the ANCOM countries. Hence, in 1974, the Asociacion de Empresas Estales de Telecomunicaciones del Acuerdo Subregional Andino (ASETA) was established. ASETA is based on a fundamental principle, Recommendation MC-11.

This Recommendation, in essence, states that an imperative need exists to exchange experiences and information, to strengthen the ties between the governmental entities in charge of providing public telecommunications services in the ANCOM countries; this exchange would contribute to adopting common criteria which would constitute one of the basic principles ["pillars" in the original Spanish] of integration of the ANCOM countries, in accordance with the objectives of the Cartagena Agreement.

After having studied the ANCOM countries' needs, the First Meeting of the Ministers of Communications made several other recommendations:

1) the establishment, as soon as possible, of an Association comprised of the governmental entities in charge of <u>public international telecommunications services</u> [emphasis added], with the following goals and objectives:

a) to provide efficient and economical service within the entire ANCOM region;

b) to establish common criteria, within and outside the ANCOM countries, for the management of these services;

c) to promote the adoption of a common position vis à vis the international [telecommunications] equipment market;

d) to adopt common criteria and positions in international organizations and meetings;

e) to promote technical and administrative coordination, and the exchange of information.

The Ministers of Communications also decided to increase the number of scholarships and exchange programs for the training of telecommunications personnel, not only in the technology, but also in the efficient management of telecommunications services and equipment. They also recommended the establishment of a Register of telecommunications specialists, who could be consulted.[8]

These recommendations and other resolutions presented in 1974 served as a basis for ASETA's establishment. The Organization, as well as its By-Laws, Work Plan and budget were formally approved and recognized by the respective governments in June 1974. The Association is registered in accordance with the laws of Ecuador, where it has its headquarters.[9]

ASETA has been the beneficiary of a number of feasibility studies over the last ten years, to help it decide whether or not, and when, to launch the CONDOR satellite.

The results and recommendations of some of these studies will be commented on next. It should be noted, however, that many pertinent documents are not generally available. Thus, some of the conclusions drawn are not easily substantiated, and may be "educated guesses" at best.

The Latin American integration efforts of the 1960s were aimed at regional economic cooperation and trade enhancement and encompassed most of the Latin American countries. One of the objectives of the Cartagena Agreement of 1969[10] was to further the subregional integration efforts of the member countries. Although these efforts tended to be primarily of an economic nature, they also included closer cooperation in the fields of education, communications, culture, and science to enhance their common heritage.

The ANCOM countries share many characteristics: their Spanish heritage, a common language, similar educational systems (adopted from the European settlers), and at least in principle, the values of the Catholic Church. Despite the superficial similarities, however, disparities still exist in several respects: the level of industrial development and economic growth, availability of and access to educational systems (resulting in literacy rates of various degrees); the assimilation of large indigenous populations, the movement to urban centers by large numbers of rural dwellers.[11]

In order to enhance their commonality, the ANCOM countries entered into an agreement, aimed at their educational, scientific and cultural integration. The "Andres Bello" Agreement was signed by the ANCOM members (including Chile), at Bogota, January 1970.[12] The principal integration objectives of this agreement were to be accomplished by instituting several measures, inter alia:

- to enhance and expand the means of communication between the countries, resulting in a greater exchange of information;[13]

- within the existing legal framework, to safeguard against the corruption of youth by the mass media (TV, cinema, radio and printed matter);[14]

- to renew efforts, in cooperation with other international organizations and nations, to study the feasibility of education by satellite; should the results of this research be positive, they should be implemented.[15]

The last three articles cited of the Andres Bello Agreement served as the "cornerstone", in some respects, of the proposed regional satellite system for the Latin American countries. The Articles speak of increasing cooperative educational efforts and enhancing communications - both of which could be accomplished by using satellites.[16]

The Latin Americans thus joined other countries interested in Educational Television Satellites (ETV) since ETV appeared to be one way of providing education and other social benefits to huge populations scattered over a large and otherwise inaccessible territory.

By the late 1960s India, Canada and the United States were contemplating experimental programs to be transmitted by satellite. One goal common to these experimental programs was to deliver television programs to remote and /or sparsely populated regions. Community reception centers would receive the satellite signal, which would be redistributed by either microwave or high frequency radio.[17]

B) FEASIBILITY STUDIES FOR EDUCATIONAL TELEVISION VIA SATELLITE (ETV)

Given ETV's great potential, Argentina carried out an initial study and Draft Plan for a ". . . national and regional satellite TV system for Argentina and other South American countries . . . [s]ince there is no doubt now about the technological feasibility of implementing educational TV systems using broadcast satellites, . . . "[18] The report concluded that, inter alia,

> "It should be recognized from the start that the [ETV] system can only be proposed as an answer to very clear requirements which fulfill well identified needs in the fields of education and culture.
>
> In addition, [f]irst priority should be given to the formulation of a clear national policy on the approach to follow with regard to ETV . . . "[19]

It also recognized the necessity of defining national and regional educational needs, technical-economic capabilities and limitations, manpower and management requirements to operate the system, and to define the legal aspects of applying this kind of system.[20]

The Argentinians recognized the necessity of carrying out studies to define policies ". . . for the development of a national and/or regional plan for [ETV] via satellite for education, cultural and general welfare, integrating the human and material capabilities already available."[21] They further recognized the need to establish an infrastructure at an early stage: ground and relay stations, receivers, and to train personnel. Once the infrastructure was in place, the plan called for the development of the space segment.[22] The Draft Plan envisioned an operational ETV satellite system by 1975.

This study served as a basis for a subsequent study carried out between 1972 and 1975 by a UNESCO/ITU team of experts, funded by the UNDP at the request of several of the LAFTA countries (Argentina, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay and Venezuela).

Sommerlad gives a good account of the objectives of the UNESCO/ITU study, which included

> " . . . the educational applications of broadcasting, both in school and out of school, curriculum revision, program content, television production and training, transmission and distribution of broadcasts, overall economics and financing and legal and organizational aspects of the tele-education system. It compares costs of a satellite with alternative methods of program distribution."[23]

A draft version of the report was presented in 1974 to the countries which had requested the study; apparently the preliminary draft needed considerable revisions, and a final report was due in 1975.[24] Unfortunately, the conclusions arrived at -- whether pro or against the ETV Satellite system -- or recommendations made are not available to the general public.[25]

During the Regional Seminar held in Mexico City in September 1975, the draft report was discussed in general terms.[26] One goal of the regional ETV was to reach 95% of the population at costs not higher than 5% of the participating countries' educational budget; it would deliver 20,000 hours a year of educational television. Some preconditions or prerequisites on which this regional ETV system was based were that the system had to be the property of the participating countries; that the educational programs, and the ancillary hardware (TV receivers?) had to be produced and manufactured within the region; that ETV system be fully integrated into existing educational systems.[27] It was hoped that receiver units would be standardized throughout the region, and that the ETV delivery would be in more than just the Spanish language, since many existing indigenous populations do not speak Spanish.[28] (The discussions, as reported, did not go into detail of how ETV delivery to isolated indigenous groups or cultures would be accomplished. Many of the indigenous communities speak only their own language, they have no electricity and access to their communities can be extremely hazardous).[29]

The UNESCO report apparently did make some cost estimates of the ETV system: it concluded that tele-education via satellite would cost about US $500 million (1974 dollars), while microwave transmission would be nearly twice as expensive. The earth segment of the ETV system represented the greater part of its cost.[30] That a regional ETV system presented numerous difficulties (political, legal, educational, cultural and social issues would have to be studied and further analyzed) was also discussed, and it was concluded that these issues needed to be addressed, if not resolved, prior to instituting the system.[31] Obviously they have not been resolved (if indeed they have a solution), for nearly twenty years later Latin America still awaits its regional satellite system.

The potential for ETV for Latin America had several drawbacks, aside from its cost:

o Lack of clearly defined purposes or goals, other than broadly stated objectives of wanting to combat illiteracy and improve the education and general welfare. The means of accomplishing these goals were equally broadly stated.

o Lack of existing infrastructure and TV sets - i.e. community reception centers were (and remain) few and far between.

o LAFTA's prerequisites that the programs and the receiving equipment (TV sets?) be produced and manufactured within the region.

o Programming that would be acceptable to all the Ministries of Education of the countries involved.

o Programs that would be acceptable to the viewers - i.e. many indigenous groups would want programs in their language, since not all of them speak Spanish. Issues of linguistic, cultural and social imperialism or sovereignty would arise, and these are practically impossible to resolve.

o The ETV project was premised on the benefits to be obtained from broadcasting satellites (BSS) whose signals are intended for direct reception by the general public. If the ETV broadcasts were to be geared for the indigenous, rural population, these people would have to be equipped with the appropriate receivers first. This was a costly prospect, as it involved developing practically the entire infrastructure, including putting electricity in remote rural areas. Without meeting this basic requirement the whole intention of educating the rural masses would be defeated. (Ten years later many rural communities still have no electricity, telephones, let alone televisions or earth stations).

One major shortcoming of broadcasting satellites, however, is that they can be used only for television or radio services; they are not adequate for telephony (telephone, telex, data transmission). On the other hand, fixed satellite services (FSS) can provide television in addition to telephony services, and are thus much more versatile, and cost-effective.[32]

Given the monumental problems and costs associated with the ETV satellite, it came as no surprise that the Latin American countries did not pursue this alternative. Hence, at the Second Regional Meeting of the Regional Committee on Tele-education held in Caracas in November 1977, it was decided to "indefinitely postpone" the ETV system's implementation.[33]

While the Argentinian and UNESCO/ITU/UNDP studies focussed on the region's educational needs and potential for an ETV satellite system, they also included several suggestions on increasing the LAFTA countries' satellite capabilities; these countries wanted to transmit, and not just receive TV programs.[34] By 1975 most of the LAFTA countries were members of INTELSAT, which further whetted their appetite for a regional ETV satellite system, transmitting locally produced programs. The ETV studies and reports served as a basis for the ANCOM countries' proposal for their own subregional satellite system, and in 1976 they undertook a feasibility study (one of many such studies) which was given the unfortunate acronym of "SATAN" (for Satélite Andino, or Andean Satellite).[35]

C) **THE "SATAN" STUDY**

The "SATAN" study was conducted by ENTEL-Chile, pursuant to an ASETA meeting in September 1976. This study aimed at providing an analytical framework, a methodology for the project's economic evaluation (or appraisal), rather than to arrive at any final conclusions.

The study was based on economic factors which tend to be variable over time: demand for service, tariffs, the network structure, etc. Some of the major conclusions follow.

a) Demand for Services: At the time the study was undertaken (between September 1976 and February 1977) statistical data on demand by country was not available. Therefore, the demand for services was estimated, the underlying assumption being that even an imprecise estimate would allow for the determination of future demand.

b) Tariffs: four different tariffications were used in the analysis, all based on the cost of leasing transponder capacity from INTELSAT. One basic premise for calculating the tariffs was the cost of leasing from INTELSAT, which would decrease in the same ratio as the cost of leasing channels.

c) Rate of return estimates which were calculated at 15%, were based on the four alternative tariffications.

d) Project costs were broken down into two parts: 1) the cost of planning and organizing the project: research and development, construction and launch of the satellite, and a tracking, telemetry, command and monitoring station ("TTCM"). 2) The second group of costs were those associated with operating the whole system: the TTCM station, manpower and management.

After analyzing the various alternatives and associated costs, the report concluded that regardless of the alternative utilized, the project would produce losses. From an economic viewpoint, ENTEL-Chile concluded that the "SATAN" project was not viable.

In its analysis of alternative tariff structures as the basis for the economic viability of the satellite the only difference between them was the amount of loss that would be incurred. Only one alternative -- that of having a twelve transponder satellite, at an invariable lease cost of US $1 million (1976 dollars) annually and without any spare or spare capacity -- would produce the fewest losses.[36]

These results should be borne in mind, since ten years after the "SATAN" study, the ASETA members are still debating several issues raised by the Chilean report:

o What is the actual traffic within the region?

o How much transponder capacity does each country require for domestic, regional and international use? Has the need increased dramatically since 1977?

o Would it be less expensive - more economical - to continue leasing spare transponder capacity from INTELSAT, or from another separate system, such as PANAMSAT? (This is a new alternative; however, PANAMSAT's system will not be operational for another few months, so the costs of this alternative are unknown. Should PANAMSAT's launch be successful, this might induce other countries, in addition to Peru, to utilize PANAMSAT's services. This will be discussed in more detail, in Chapter 8).

o Even though INTELSAT's space segment utilization charge has decreased to nearly half in the last ten years, the cost of leasing a transponder remains relatively high - about $800,000 to over US $1 million, depending on the transponder and other factors. (e.g. pre-emptibility, insurance, etc.).[37]

By the time the "SATAN" report was published, Chile was on the verge of leaving the Andean Pact and ASETA.[38] There is no reason, however, to doubt the validity of ENTEL-Chile's study or its conclusions, especially since the question of the economic viability of a regional satellite has yet to be answered in a satisfactory manner. While the 1975 UNESCO study estimated the cost of an educational TV Satellite system at US $ 500 million, more recent studies indicate that the space segment alone will cost at least US $209 million.[39] This seems to be a conservative estimate of the cost, especially in view of the limited launch capabilities since the shuttle disaster in 1986, the grounding of the ARIANE launchers later on, and the increased cost of insurance.[40]

In early 1977, at the same time that Chile's ENTEL produced its analysis of the economic viability of a regional satellite system (utilizing transponders leased by INTELSAT), ASETA's Board of Directors decided to undertake its own feasibility study of a system with its own satellite: Project CONDOR thus replaced "SATAN".

D) PROJECT CONDOR AND THE CAL/saTEL STUDY

Project CONDOR was proposed as a possible alternative to the Colombian domestic satellite project, "SATCOL", which was already under consideration in 1976.[41] In March 1977, ASETA members agreed to contract with a Canadian firm, Canadian Astronautics Limited/saTel Consultants Ltd., (CAL/saTEL) to undertake a feasibility study of the new Project CONDOR.

The Canadian report, presented to ASETA in October 1977, included ". . . the results of technical studies, cost analyses and trade-off comparisons, ownership and organization, as well as an analysis of economic viability and tariff considerations."[42]

Based on the traffic data provided by ASETA (which according to ENTEL-Chile's prior report were merely estimates) the Canadians studied several options:

o Three options involved procurement, launch, TTCM responsibility, etc. (i.e. ownership and operation of the space segment) to be undertaken by ASETA through a jointly-owned operating company.

o The other options involved long-term transponder or satellite lease arrangements, either from INTELSAT or ". . . a supplier of a dedicated satellite managed by a jointly-owned operating company . . ."[43], (In the Executive Summary there is no indication as to who would have been the "supplier" of this satellite, nor what other arrangements and negotiations would have been involved under this option). Five of the options would have included both telephony and broadcast (TV and radio) possibilities, while one option alone was designed only for telephone via leased capacity.

The Canadians envisioned a system, to be fully operational by 1982 or 1983, with a projected 10-year life span. The main features included:

- The entire space segment would consist of three 12-transponder satellites, one in orbit and operational; one "spare" in orbit, and the third satellite (a replacement satellite) on earth.
- Each transponder would have capacity for one television channel, or approximately 1000 telephone circuits.
- On the first satellite, 6 transponders would be used for national long distance as well as

for regional telephone, telex and data transmission; the other 6 transponders would be utilized for television, either educational or commercial. The "spare" satellite would or could be utilized for the latter purpose as well.

- The satellites would operate on the 4/6 GHz band ("C" band), configured to cover all the ANCOM countries, including Chile. Thus, the satellite would meet the domestic, intra-regional and international traffic requirements of ANCOM.

- The space segment costs, including the TTCM station, were estimated at US$ 50 million (1977 dollars), and would have been shared by the original six ASETA members.

- The terrestrial segment (e.g. earth stations) would cost approximately another $50 million; these expenses would have been prorated by country, according to the type and number of earth stations utilized. Furthermore, the construction and operation of the earth segment would be the responsibility of each country. Based on the estimated demand, CAL/saTEL proposed the following number of earth stations:

Bolivia	109
Colombia	(no number specified)
Ecuador	31
Peru	18
Venezuela	25
(Chile)	(35)

Two types of earth stations were considered:

- Standard Type A antennas (eleven meter diameter), with the necessary channels for telephony service, and with TV receive and transmit capability.

- Standard Type B (smaller diameter, i.e. 5 to 6 meters), but only capable of receiving television signals (TV receive only or "TVRO").

According to the ASETA Board Meeting minutes of October 1977 the Canadian study "showed" or "demonstrated" the technical-economic viability of the regional system. However, prior to making any firm commitment, the ASETA members decided to study the report carefully and submit their recommendations to their respective ministries for action.[44]

At that same meeting IETEL-Ecuador urged ASETA to begin the advance notification process with the International Frequency Registration Board (IFRB) of the ITU and to "reserve" the necessary orbital positions for the CONDOR spacecraft.[45]

Part of the urgency to go ahead with the IFRB notification arose from the Equatorial countries' claims to sovereign rights over parts of the geostationary orbit. This claim was set forth in the "Bogota Declaration" of 1976 and signed by, inter alia, Ecuador and Colombia, the two "Equatorial" countries of ANCOM.[46] Colombia's SATCOL, a domestic satellite system under consideration at the time, was receiving strong political support. Thus, reserving orbital slots, and launching a satellite (whether domestic or regional) would insure that the Equatorial countries' claims would be heeded - at least the rest of the telecommunications world would be put on notice to their claim.

Furthermore, in 1977, the ITU had convened a World Administrative Radio Conference on Broadcasting Satellite Services (the WARC-BSS), to allocate the radio frequencies for television broadcasting (those which the ETV satellite system which UNESCO/ITU had studied between 1972 and 1977 would have utilized).[47]

Hence, in some respects, 1977 was a crucial year for the formulation and consolidation of a plan for either a domestic or a regional satellite system, and to begin its implementation. Three alternatives or options were available to the Andean countries: the ETV satellite, SATCOL, and/or CONDOR. Each system presented its own advantages and drawbacks and had different costs associated with the construction both of the space segment and the necessary terrestrial networks. The countries faced another difficulty: that of financing the system from its inception to its operation. In considering the number of options available, differences in prices and over-all costs, and the many political-economic issues that had to be resolved among the ANCOM countries themselves, it is little wonder that they found it difficult to make a decision to commit themselves to one alternative over the others.

The three systems under consideration had one common but crucial point: the demand for, and existing traffic which would justify any of the satellite systems were not clearly determined. All the feasibility studies were based on estimates (or perhaps more accurately, on "guesstimates"). Depending on the estimates used and projected for the future, the cost of the satellite systems showed considerable variation. A comparison of the costs estimated by the studies reveal the following:

1) ENTEL-Chile's economic projections on "SATAN" were negative; they showed that it did not matter whether the transponders were leased or bought, or whether a satellite was dedicated only to ANCOM communications. The results of the economic projections showed varying degrees of loss, and only one alternative showed a slight financial gain. ENTEL's economic study was based on demand estimates supplied by ASETA, since none of the countries had reliable statistics on traffic or demand.[48]

2) In regard to the massive ETV Satellite project (again, based on estimates for its demand and number of educational television hours that it would generate), UNESCO/ITU put the cost of the space segment alone at US $500 million, with the earth segment or infrastructure requiring a similar investment. It concluded, however, that the $500 million represented half of what it would cost to have a comparable microwave system. How many

satellites were to be included in the space segment is not mentioned in Sommerlad's report.[49]

3) In 1978 an assessment of CAL/saTEL's report was made, which raised many other points which were either not addressed, or not sufficiently, and which required further study:

- Utilization of new technologies which would allow multiple access, and demand assigned access to telephone circuits, rather than having a single purpose circuit;

- Community reception of ETV, and its redistribution by small, low power retransmitters or by cable;

- The use of smaller earth stations, if a more powerful satellite signal were used in the first instance.

- Appropriate telecommunications (telephony and TV) for ~~rural~~, sparsely populated areas, taking into account existing population centers and their need for certain services (e.g. telex); further taking into account the fact that most traffic was (and is) generated in larger cities. Hence, the demand assigned telephone circuits suggested above could benefit both the "thin route" users and more populated centers.

- The fact that the majority of the population in the ANCOM countries is rural should not be overlooked, especially in assessing the need for (and existing access to) telecommunications services, and the kind of system that should be implemented.

- A multi-purpose satellite system should be considered, while instituting telephone and television services first. Since data transmission requirements (especially in rural areas) were minimal, these needs could be met at a future time. In the meanwhile, the transponder capacity could be put to more remunerative use.

- The possibility of having regional commercial television broadcasts, which could help defray the costs of their transmission, and would also provide some financial support to the educational TV programs as the Ministries of Education could rent transponders for their ETV.[50]

The recommendations of CAL/saTEL raise even more basic issues: in the first place, what was the necessity of having three spacecraft (even if the one on earth was not operational), equipped with 12 transponders each, when this would produce more than overcapacity? The demand for services and actual traffic were estimated (absent reliable data), and it is unlikely that all twelve transponders - let alone 24 - would be fully utilized.

The CAL/saTEL report further proposed that each country install two types of earth stations, the number of which varied according to estimated demand. According to CAL/saTEL's estimates, Bolivia (with a population of about 5 million) should have acquired 109 (!) earth stations. [This extremely high number could be a typographical error].

Ecuador, the smallest country, would acquire 31, whereas Venezuela, one of the larger and more populated countries, would have been able to meet its needs with only 25 earth stations. (No estimates were made for Colombia, the greatest telecommunications user in ANCOM, and also the most populated country -- about 25 million inhabitants in 1977).

The Canadians were recommending to the two poorest countries to make the largest investment in earth stations alone. Admittedly, all these countries were seeking to bring telephony to rural areas; even so, the number of earth stations suggested appears somewhat unrealistic. A reasonable number, however, could be established if actual demand and traffic figures were available; future demand could be projected, based on statistics and trends established in previous years. Apparently ASETA was not able to come up with the figures in 1977.

The 1977 meetings on ETV and on Project CONDOR resulted in the "indefinite postponement" of the first project, and in "further studies" of the second one. Between 1978 and 1982 interest in a regional system dwindled, or else was sidetracked by the Colombian SATCOL project. SATCOL was to be used for domestic purposes, although the Colombians had offered ASETA in 1977 to "use" Colombia's advance notification to the IFRB for CONDOR. Since SATCOL was not intended to provide regional coverage (except as incidental to national coverage), this project will not be extensively considered here.

SATCOL stirred up much political interest, and several international corporations studied and analyzed the Colombian proposal. The SATCOL project had gone as far as requesting international bids for the spacecraft, when a new government took office in 1982. Within a few months, the requests for bids were cancelled, bringing the SATCOL project to a halt.[51]

E. PROJECT CONDOR'S REBIRTH

In 1982, however, Peru suggested at an ASETA meeting that Project CONDOR be "revived".[52]

It was proposed that the new project (or "revived" Condor) study the feasibility of a regional television satellite system. At the same time the research would determine the need to establish an organization to manage, coordinate and control the system. It was also suggested that ASETA take an active role in the coordination process with the ANCOM countries and with INTELSAT. The idea of the regional TV satellite was not warmly accepted; instead, it was suggested that ASETA form a working group of ANCOM experts to further study CONDOR's feasibility as well as to establish an organization to own and operate the satellite.

The possibility of leasing INTELSAT transponders for domestic purposes was also discussed; these leases would not obviate the need for a regional satellite system, since at that time INTELSAT was not leasing transponders for regional communications.

In a subsequent meeting held in Bolivia in 1983, the idea of a shared TV broadcasting system utilizing INTELSAT transponder capacity was discussed. The results of the discussions with INTELSAT were to be presented at a subsequent meeting. In the meantime, however, CONDOR's use for TV programs was also to be studied. The idea was that by 1990 more than half of the CONDOR's transponders (11 of 18) were to be used for television transmission. (Whether the transmissions were to be national or regional is not stated).[53]

By 1984, the ANCOM countries were considering not only the regional satellite, but also leasing INTELSAT transponders on a shared basis for TV, telephony and intra-regional communications. At the same time, the demand for traffic, especially the use of satellites required by institutional (governmental) users, was also to be assessed. [This is the first time that "traffic assessment" is mentioned in the ASETA Summary].

ASETA also decided to notify the IFRB of its intentions to reserve three orbital positions in Colombia's name, based on Colombia's special status as an "Equatorial" country.[54]

At the third meeting of the ANCOM Ministers of Comunications, Transport and Public Works, held in Cartagena, Colombia in November 1984, several resolutions were adopted regarding the regional satellite system. In the first instance, it was considered "indispensable" to continue working on establishing the regional satellite system. Secondly, the INTELSAT shared leases were to be negotiated. This would provide the transponder capacity required by each member country, and would also give ASETA practical experience in managing a satellite system.

Another key resolution was that each country was to determine its satellite requirements for TV, telephony and other telecommunications. ASETA was to establish the method by which the countries would make their own determination.

The Ministers also decided that ASETA should begin exploring the design and purchase of the space segment.[55]

F) THE INTELSAT TRANSPONDER LEASE REPORT

In December 1984, INTELSAT produced a report on the utilization of INTELSAT's space segment to meet the ANCOM countries' national and regional TV and telecommunications needs. INTELSAT's study concluded that shared leasing of transponders would provide ASETA with a number of significant benefits, inter alia:

- Regional communications needs would be met by making more efficient use of existing capacity; this capacity could be expanded, or modified, according to national and regional needs.
- New technological services and other innovations, as well as the transfer of technology would be more easily available to the ANCOM countries.
- The shared leasing arrangement would provide the necessary training and on-the-job experience to ASETA's technical and management personnel, giving them first-hand experience in most phases of operating a satellite system.[56]

All the above, as well as the lease of six 36 MHz transponders (increasing to 17 by 1990) could be accomplished at a cost of under U.S. $1 million a year per transponder (about $831,000, to be more precise).

The INTELSAT Transponder Lease Report took into account increased demand and traffic for 1985-1990 based on 1983 figures provided by ASETA. Similarly, it considered the requirements for television broadcasting. In regard to the latter, the Report concluded that three TV channels could utilize the same 72 MHz transponder.

Additional savings could be gained by shared leasing for national telephony and regional TV. (Colombia, Peru and Venezuela were then each leasing a transponder for domestic services).[57] Another cost-saving feature was the suggested use of INTELSAT's new VISTA services, for thin routes. (Ecuador-Galapagos Islands).[58]

Another advantage to leasing transponders from INTELSAT was that the earth stations then in operation could be utilized, and additional ones of small diameters installed. At least part of the earth segment and space segment were in place. As the country's national requirements increased (e.g. the provision of TV and telephony to rural areas), each could acquire more earth stations according to its needs. In summary, it was calculated that shared leasing could result in: a) savings of up to US $1.5 million a year on eight leased television channel bandwidths; b) savings of US $400,000 for single-channel per carrier (SCPC) and FM; c) greater availability of FDM/FM bandwidth (Frequency Division Multiplex/Frequency Modulation).[59]

The Transponder Lease Report also analyzed the economic aspects of having regional television transmission and reception, concluding that from a technical and economic viewpoint shared capacity presented certain benefits. However, the Report did not address legal, cultural or political obstacles that could arise from regional television broadcasts.[60]

At least as conceived and analyzed by ASETA, leasing INTELSAT capacity and sharing it on a regional basis could have provided the ANCOM countries with the regional telecommunications system they wanted, without any lengthy delay, and without the risk of having a satellite system they might be unprepared to operate. INTELSAT is a well-established and reliable enterprise, from whom three of the ANCOM countries (Colombia, Peru and Venezuela) were already leasing transponder capacity for domestic services (telephony and/or TV).

The disadvantages to a shared lease arrangement were relatively few, but of significance to ANCOM. To begin with, the transponders leased by INTELSAT are "pre-emptible", i.e., they may be utilized by INTELSAT for other purposes should the necessity arise. However, this rarely happens.[61]

Another more serious drawback to shared leasing, however, was that not all the transponders would be on the same satellite, nor would each satellite provide the same or required coverage. Only one satellite, INTELSAT VB, which was to be available in early 1986 would have been able to provide coverage for all ASETA countries from its 319.5° E. location.[62] (This satellite, now called VA (IBS) is scheduled for launch in 1988, and is to be located at 332.5° E.). Hence, it would have been technically more difficult and less economical to configure a regional system based on the availability of the transponders on different satellites.

Another shortcoming was that, although technically and economically the ANCOM countries stood much to gain by sharing leased capacity from INTELSAT, they would still not be the owners or operators of their own dedicated satellite. For political and cultural reasons, it is especially important to believe and know that a country or group of countries has control over its communications. This would not be the case with INTELSAT leased capacity, so that the ANCOM would remain dependent on INTELSAT for domestic, regional and international telecommunications.

In addition, even though INTELSAT leases and is willing to sell transponders for domestic services, INTELSAT has not yet leased them for regional purposes. Other existing regional consortia (EUTELSAT and ARABSAT) each have their own space segment. The Palapa system differs from these two in that it is a national system which leases (but does not sell) transponder capacity to neighboring countries.

Hence, ASETA's proposed shared leased system would have been unique. Furthermore, it would have had to be approved under Article III(d) of the INTELSAT Agreement.[63]

So far no administration has seemed to request INTELSAT's authorization to use the international consortium's space segment for regional telecommunications. To date the only administration which has requested coordination for "transborder" services is the United States. The USA's transborder services differ from those ASETA proposed in that they use domestic satellites and the services provided are ". . . merely incidental to domestic [U.S.] services."[64] This is discussed in greater length in Chapter 8, <u>infra</u>.

ASETA decided in 1985 to "develop" the shared leased capacity phase of the regional communications program, beginning with the shared TV channel leases. The shared telephony and regional services were to be implemented later.

Simultaneously, ASETA sought to contract specialized consultants to undertake a definitive feasibility study of Project CONDOR, and to begin preparing the bid documents for the space segment as well as the launch vehicle.

The Board of Directors believed it was "indispensable" for the ASETA members to participate in the decision-making process, and to achieve this goal, they decided to establish the "Comision Andina de Telecomunicaciones por Satelite" (CATSAT), the Andean Commission for Telecommunications by Satellite.

CATSAT, comprised of five representatives (one from each member administration), is supposed to meet as often as required until the formation of the "Empresa Multinacional Andina" (the Andean Multinational Corporation or Enterprise). CATSAT's objectives, broadly stated, include:

- o the implementation of Project CONDOR;
- o to establish policies regarding negotiations with INTELSAT and the IFRB, consultants, sources of financing, and other agreements entered into;
- o to create a technical advisory group, composed of five experts from the ANCOM countries, who should be very experienced in technical and economic matters relating to satellite telecommunciations and who would study traffic demand, both national and regional.[65]

It would seem that CATSAT would have even less power or authority than ASETA; the purpose of its creation, and the means by which it is supposed to accomplish its goals (to implement Project CONDOR) are even less clearly defined than ASETA's.

It does not seem too logical to have yet another group of five experts which is supposed to undertake such a vast project. It would have been better to simply increase ASETA personnel by the five experts, rather than establish yet another separate "toothless" technical group. Further, since ASETA's General Secretariat and Board of Directos have been negotiating with the ITU and INTELSAT for years, they have acquired much experience in satellite telecommunications - not only technically, but also at a personal level. Moreover, ASETA was well aware of its limitations, and of the need to establish an organization to actually operate and manage the satellite system. "CATSAT" does not seem to have been the solution to this need. However, as happens in many instances, when an impasse is reached or when a difficult decision should be taken, a commission is established to study the problem. It is possible that such a situation led to CATSAT's creation. CATSAT's creation seems to merely add another layer of bureaucracy to an organization that seems top heavy already. It should be recalled that ASETA's General Secretariat members must answer to:

- ASETA's Board of Directors;
- their respective Ministries of Communications and/or Transportation;
- The Board of Governors of the Cartagena Agreement.

This means that at least fifteen people must arrive at a consensus in order to take any action. The probability of fifteen individuals reaching a majority agreement is further reduced by the voting requirements of ASETA and CATSAT - they each require a maxi-majority of four out of five votes. With such stringent requirements for the approval of any substantive or decisive action it is little wonder that Project CONDOR becomes the frequent subject of yet another feasibility study.

This is precisely what happened in 1985. This time, after ASETA shopped around for funds, the European Community granted it a non-reimbursable credit (alleged to be worth around two million ECUS, or U.S. $400,000) and undertook the first part of a feasibility study of Project CONDOR. (The United States Trade Development Program (TDP) was willing to allocate U.S. $750,000 for the second part of the study, once the Europeans had concluded their part of the study).[66]

G) THE ESCO REPORT

The European Satellite Consulting Organization (ESCO) Report was given to ASETA in September 1986.[67] Like the previous feasibility studies, ESCO's report focussed on the technical and economic aspects of a dedicated regional satellite system. ESCO's study differed from the previous ones in that it was able to compare three distinct alternatives;

1) the satellite system wholly owned and operated by the ANCOM countries;

2) the shared leased transponder capacity and continued reliance and dependence on INTELSAT for domestic, regional and international services;

3) acquisition of transponder space (through purchase or lease) from PANAMSAT.

The third alternative -- utilization of a separate system -- had not been available prior to the USA's 1984 decision that such separate systems were in the "national interest."[68] However, even though PANAMSAT has been authorized to provide services, and to launch its space segment, its actual value and utility will be ascertainable only after its being placed into service. ESCO was cognizant, therefore, of the uncertainty of considering PANAMSAT as a viable alternative.

ESCO's estimation of transponder requirements (presumably based on ASETA-supplied estimated data) was that between 1986 and 1990, ASETA could use ten transponders, to be leased either from INTELSAT or from PANAMSAT.

Sometime in 1992, the first CONDOR spacecraft would be launched, followed by a second (in orbit spare) satellite in 1995. By year 2000, the ANCOM countries would have 24 transponders of their own (twelve on each of the satellites).

ESCO also studied three types of television services:

- Exchange of programs (presumably inter-regionally but no specification as to whether private or government, educational or commercial).
- Private television for broadcast to major towns. (No mention is made as to whether these would be national or regional broadcasts).
- Government TV broadcasts to major towns, and for rural reception (TVRO).

As to telephony, telex and other data transmission requirements, and how they would be met, the Report (or at least the part thereof made available to this author) does not include any data or recommendations.

An underlying assumption seems to be that at least 6 transponders are required between 1986 and 1990, with the need increasing to 12 by 1992, and to 24 by 2000. The need or demand would increase simultaneously with the supply.

However, there is no further indication as to the use that would be made of all the channels available. And 24 transponders can supply many channels.

The ESCO Report concludes, after comparing costs and technical requirements, that despite the higher cost, and higher risk associated with all phases of Project CONDOR, that a dedicated satellite system of their own is the best solution for the ANCOM countries.[69]

As to costs, ESCO states that CONDOR's "... higher absolute cost can be offset when the potential revenues based on the requirements listed in task 100 are taken into account . . . ."[70] The Report continues:

> Moreover, the CONDOR configuration offers a certain number of unic [sic] advantages, namely:
>
> - the andean [sic] countries would be completely independant [sic] from any changes in policy by an external satellite organization.
>
> - the CONDOR system would be the most effective to acquire expertise in both satellite and telecommunications system [sic].
>
> In case of a rather lower demand for satellite services, the conclusions of the study would be rather different. Obviously such a situation could not be taken into account in the ESCO study once the result of task 100 have been set. Nevertheless, it can be expected that the cost of the system would be similar while the revenue would decrease significantly. This fact could lead to the conclusion that a transponder purchase configuration would be more attractive. ESCO dont [sic] share this opinion because:
>
> - the effect of a pessimistic evolution would result in a lower increase

of the service requirement but at a later date than in our study the same capacity would be required.

- A possible over capacity in orbit could be avoided if a different strategy in the implementation schedule is adopted.

Finally, ESCO point [sic] out that, up to now, all regional satellite systems are based on satellite [sic] owned by that region in order to optimize their network. Even for national domestic service, there is no example of such systems without a national satellite when more than 5 transponders are required.

ESCO feels that only a CONDOR configuation can guarantee the possible [sic] of future aspiration [sic] of the Andean subregion.[71]

In regard to PANAMSAT, the new and third alternative, ESCO stated that:

"PANAMSAT can offer the smoothest transition [to a regionally owned satellite] because the use of the spot beam would involve a fully compatible earth segment. Nevertheless the design of PANAMSAT spot beams cannot offer the evolution towards a regional service in the future. There is also some uncertainty of commitment prior to a succefull [sic] first launch and regarding the take up of capacity by other clients.[72]

Indeed, PANAMSAT's future satellite and operations will be determinable only upon the successful completion of the launch, and once it begins providing services to its clients. So far PANAMSAT has one correspondent - Peru.

ESCO further concluded that shared leased capacity from INTELSAT (though more economical by over $150 million dollars)[73] had the "... desadvantage [sic] of imposing an overdimensioned earth segment for the transition phase . . ." and INTELSAT may not be able to have the necessary transponders available.[74] (ESCO does not explain or elaborate on the "overdimensioning" of the earth segment, nor does it mention the possibility that the space segment it proposes (24 transponders) might also be "overdimensioned").

One conclusion that can be drawn from ESCO's report is that, like the CAL/saTEL study of 1977, the recommendations are for unrealistically "overdimensioned" space and earth segments.

While the earth segment may be costly to acquire and install, at least it can be modified and tailored to the countries' requirements: either fewer or more earth stations of different types can be used. However, once a satellite is launched, it is much more difficult, if not impossible, to alter the configurations of the beams, their footprint, their intended purpose.

In the eight year period between these studies, reliable ascertainment of traffic demand and transponder requirements has not been carried out by ASETA. Now, as then, 24 transponders (even if use is projected to year 2000) would result in overcapacity.

A realistic "dimensioning" of the earth segment is not possible until the ASETA members decide what services they want to implement. If their goal is to broadcast TV programs to/from major cities in the ANCOM region, one type of earth station would be required. Should national, rural TV together with rural telephony be their objectives, then other types of earth stations will be necessary.

On the positive side, the ESCO Report recommends "volume" purchase of earth stations, since this would be more economical to the ASETA countries - provided they agree on the same standards. As to contracting for the many services involved in acquiring a satellite system, from its launch to its operation, the European report provides some good guidelines, but states that essentially all the negotiations are up to "TELANDSAT", presumably ESCO's acronym for the operational unit of the CONDOR satellite system which has yet to be established.

The ESCO study is the first to mention legal issues which will have to be considered in both establishing and operating "TELANDSAT". It does not go into detail or depth on the legal considerations, however. The report merely states that the ASETA governments "... must find together the best way for the Agreement for TELANDSAT"..., for which different possibilities exist and that the "...Body Corporate [sic] could be organized in the following manners [sic]..."

> "Agreement on the Base [sic] of Civil laws
>
> [which might lead to conflicts between public and private law] "Agreement for an international enterprise established by the governments and the telecom companies would be shareholders..."
>
> "Agreement for an International Organization
>
> This solution means the establishment of a really international organization for satellite communications with an internationally staffed executive organ. . . The form of an international organization [similar to EUTELSAT or INTELSAT] seems to be the favorite form for TELANDSAT(I)..."[75]

Elaborating on the organizational structure recommended, ESCO states that it would require "an agreement in which the governments are represented in the institution of assembly of parties and the telecoms companies theirselves [sic] in Director Board [sic] and by delegating staff to the executive organ."76

In ESCO's estimation TELANDSAT(I)'s scope of activities would include the space segment as well as ". . . equipment, financial involvement, staff and authority transfer . . . the management of this international organization has to take into account a series of concerns referring to individual contributions."77 The countries that could not provide equal funding (Bolivia and Ecuador) could contribute staff, materials or real estate) to avoid overburdening the bigger countries' financial resources. The Report recommends that "... a participation on the basis of the utilization of the system seems to offer the best equity for all partners."78

Other activities that would come within the scope of TELANDSAT's purview include, inter alia,

o coordination of operation and use of the space segment in the transition from INTELSAT to regional management;

o management of all operations and maintenance of the space segment;

o promotion of the integration of the national networks and of the services to be offered in the ANCOM countries;

o negotiating and entering into national and international contracts for all phases of the space segment, from launch to orbit testing).[79]

In order to accomplish the above, TELANDSAT would be endowed with legal personality, giving it the right to enter into contracts and other agreements, with states and international organizations (presumably corporations as well as multi-lateral agencies).

It would also have the right to hold and dispose of property, and to be a party to legal proceedings.[80] The organization's liability would be limited (i.e. "... no party [or country] would be individually liable for acts and obligations of [the entity] except where such liability results from a treaty to which that party and a state claiming compensation are parties."[81]

The ESCO Report goes into considerable detail on the organizational structure, staffing, and responsibilities of TELANDSAT. Most of the recommendations are based on the European experience with EUTELSAT's creation and establishment and, where pertinent, with INTELSAT's. For example, TELANDSAT (like EUTELSAT) would consist of three organs:

o the Assembly of Parties: 5 members, each with one vote.

o The Board of Signatories - voting participation based on investment share, but none to exceed 33%.

o The Executive Organ, headed by a Director General.[82]

There are, however, additional or different considerations to be taken into account by ASETA. The main one is that TELANDSDAT would be operated and managed by only five countries, with financial investment shares limited to the ANCOM countries. EUTELSAT, on the other hand, has 20 signatory members, most of them in a more advantageous financial position than any of the ANCOM countries. Hence, financial considerations (investment shares and other contributions) will be important factors in the actual development of TELANDSAT, and the length of its "interim" period of operations. Where the necessary start-up funds would be obtained is not clearly addressed in the ESCO Report.

In essence TELANDSAT would function on an "interim" basis providing the institutional structure and experience necessary to the establishment of a permanent multi-administration enterprise.[83] The permanent entity would operate and manage the space and earth segments. Whether it would own the space segment depends on the choice and decision of the ANCOM countries to purchase their own satellite, transponders from either INTELSAT or PANAMSAT, or to lease and share transponder capacity.

To briefly recapitulate, the ESCO Report's recommendations on the organizational aspects of TELANDSAT are perhaps the most logical aspect of the Report. Furthermore, if EUTELSAT's Convention and Operating Agreement, on which TELANDSAT seems to be patterned, were slightly modified to meet the requirements of five (rather than 20) participants, the ANCOM countries would have at hand the necessary organizational guidelines to begin operations.

The technical and economic aspects of ESCO's recommendations, however, need further study, clarification and data before being accepted. The data would have to be provided by ASETA; once it were available, as well as once the ANCOM countries decide how much transponder capacity they would require and utilize for what services, the technical design of the regional satellite system would be facilitated. Similarly, once there is clarity on the technical requirements, the cost of the total system would be easier to establish, and prorate among the users.

Although the ESCO Report suggests basic legal considerations in regard to the organization of the operating entity,[84] there are still many legal questions and issues pertaining to national, regional and international legal aspects of the proposed regional satellite system that have to be addressed.

CONCLUSION:

For the past decade the feasibility of regional satellite system for the ANCOM countries has been pondered and studied by Europeans, North and South Americans, as well as by international organizations.

The studies have looked at the technical and economic issues, but have not addressed the legal or political issues involved in establishing a regional communication system. Furthermore, the question of how the space segment would be financed remains unanswered.

The lack of clear answers or realistic recommendations stems from various factors. In the first place, the proverbial "which comes first - the chicken or the egg?" situation seems pervasive.

In order to design an appropriately dimensioned system, reliable data and statistics are required. Investments of time and money are needed in order to obtain these; so far, ASETA has not been able to supply them, stating as recently as July 1987, that it had to update its statistics.[85]

Secondly, the countries need to agree on the objectives and utilization of the proposed system.

Once the data and goals are established, other pertinent issues will be easier to resolve. These relate to technical, economic, financial and legal considerations. Underlying these, however, are political factors which also need to be addressed, even though they may not have an easy solution.

The following sections attempt to point out, although not necessarily answer some of the questions raised by previous feasibility studies.

1 ASETA, Document ASETA-015, "Antecedentes y Principales Disposiciones que Rigen La Asociación, (November 1975). ("History and Main Principles that Govern the Association") [Cited as ASETA Principles hereinafter]. (English version by S. Ospina).
The acronyms stand for:
1) ENTEL-Bolivia: Empresa Nacional de Telecomunicaciones S.A.M.,
2) TELECOM-Colombia: Empresa Nacional de Telecomunicaciones, S.A.;
3) IETEL-Ecuador: Instituto Ecuatoriano de Telecomunicaciones;
4) ENTEL-Peru: Empresa Nacional de Telecomunicaciones del Peru;
5) CANTV-Venezuela: Compañía Anónima Nacional de Telefonos de Venezuela. [Chile was a founding member, but withdrew in 1977].

2 Ibid.

3 INTELSAT Report 1986-1987, back cover. In 1965 utilization charges were US $32,000; by 1975 they were $8,460.

4 See Introduction, <u>supra</u>, for notes on these developments.

5 Montevideo Treaty, <u>supra</u>, Chapter 2, note 5; Cartagena Agreement, <u>supra</u>, Chapter 2, note 12.

6 Several books and numerous articles on LAFTA and ANCOM were written between 1970 and 1976. Among these are Morawetz' Case Study (<u>supra</u>, Chapter 1, note 6); The Andean Common Market: Management Implications of Application of Technology Legislation. Fernando Robles, Ed., New York, Council of the Americas (1976).
After 1976, it seems that either interest in or expectations regarding Latin America declined and few writings appeared subsequently on the subject. The exception is Puyana's 1982 book (<u>supra</u>, Chapter 2, note 6,) which is the seminal publication on the Andean Community.

7 See, LACAC <u>supra</u>, Chapter 2, note 21.

8 ASETA Principles, <u>supra</u>, note 1, Recommendation
(footnote continued)

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MC-17, pp. 2-3. The telecommunications specialists Registry was to be initiated by the Board of Governors of the Cartagena Agreement, and subsequently kept up to date by ASETA, once this organization was formally established.

9 Revista Oficial (R.O.), Quito, Ecuador, Decree No. 479, June 11, 1975, approving the By-Laws of ASETA adopted in Lima, Peru, July 1974.

10 See Cartagena Agreement, supra, Chapter 2, note 12.

11 Cf. Burns, supra, chapter 1, note 1.

12 Convenio Andrés Bello de Integración Educativa, Cientifica y Cultural de los Países de la Región Andina. Bogota, Colombia, January 31, 1970. (So named in honor of Andrés Bello (1781-1865), Venezuelan-born author, poet and drafter of the civil code of Chile, which was later adopted by Colombia and Ecuador).

13 Ibid.; Article 10.

14 Ibid.; Article 30.

15 Ibid.; Article 31.

16 Beginning in 1967, NASA undertook a joint study with India on a satellite TV system, to be used for rural education. In 1974 NASA launched its experimental ATS(6) satellite, which could transmit TV programs directly to the Indian community reception centers. Thus began the Indian "SITE" (Satellite Instruction Television Experiment) (See Sommerlad, E. Lloyd, Communications Satellites - A Review of Present Systems and Future Broadcasting Applications. UN/UNESCO Regional Seminar for Latin America on Satellite Broadcasting Systems for Education and Development, Mexico, 2-11 September 1975. UN/UNESCO Doc.Com.75/CONF.703/2, Paris, 1 July 1975.

17 Ibid.; p.5.

18 Comisión Nacional de Investigaciones Espaciales, Buenos Aires, Argentina: [ETV] Satellites - Survey of Background Information and Draft Plan. (Summary in English originally). (No publication date, but prior to 1971. Sommerlad, supra, note 16, gives 1969 as the date of the study).

19 Ibid.

20 Ibid.; "Draft Plan", §§ 1.1 - 1.3.

21 Ibid.; § 3.1

22 Ibid.; § 3.3.

23 Sommerlad, supra, note 16, p.10.

24 Ibid.; p.10.

25 In this author's quest for a copy of the Report cited at fn. 34, infra, I was told by ITU, UNESCO and UNDP personnel that I really was not interested in this "prehistoric" document, in spite of my affirmations that I was. The end result was that I was unable to see it, much less read it, to draw my own conclusions. One conclusion that I do draw is, that, after years of study, with a large expenditure of manpower and money, the conclusions and/or recommendations must have been quite "sensitive", for they are rarely alluded to or mentioned in the literature on other regional satellite systems.

26 Report of the Joint United Nations/UNESCO Regional Seminar for Latin America on Satellite Broadcasting Systems for Education and Development, Mexico, 2-11 September 1975. (Document not numbered or otherwise indexed). [Cited as Joint Report hereinafter].

27 Ibid.; p. 11. Comments by Mr. Castañeda of UNESCO.

28 Ibid; pp. 12, 13.

29 Numerous priests, oil prospectors and engineers have been killed by indigenous tribes, in their

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attempt to protect their way of life from encroachment by the Church and the large oil corporations.

30 See Joint Report, supra, note 26, pp. 12, 14.

31 Ibid, pp. 14-17.

32 The Radio Regulations of the International Telecommunication Union give the following definitions for fixed and broadcast satellite services.:

Sec. 3.3 Fixed-Satellite Service [FSS]: A radio communication service between earth stations at specified fixed points when one or more satellites are used; in some cases this service includes satellite-to-satellite links, which may also be effected in the inter-satellite service; the fixed-satellite service may also include feeder links for other space radiocommunication services.

Sec. 3.18 Broadcasting-Satellite Service [BSS]: A radio communication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public.

In the broadcasting satellite service the term "direct reception" shall encompass both individual reception and community reception. (ITU Radio Regulations, Chapter 1, Article 1, §§ 3.3 and 3.18 respectively). Geneva, ITU, 1982.

33 Angel Velasquez Abarça, Estudios de Factibilidad Sobre Un Sistema Regional de Satelite Para Los Paises Andinos. Insto. Geofisico del Peru, Direccion de Investigacion Cientifica, Proyectos Especiales. Doc. IGP-04/DICPE-78 (Lima, February 1978), p.4.

34 Feasibility Study of a Regional System for [ETV] in Latin America. Final Report (Technical). FMR/COM/RPC/75/207/UNDP (Restricted); UNAP/RLA/71/223. The report, including technical charts and annexes, allegedly is over 1500 pages long.

The 1970s gave rise to the New World Economic Order, and the subsequent New World Information Order. The latter sought to redress the imbalance
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of information flow. Hence, transmission capability became very important, since many of the LDCs were tired of being passive receivers only. In this respect, see Many Voices, One World. Report by the International Commission for the Study of Communication Problems. London, Kogan Page/New York, UNIPUB/Paris, UNESCO. (1980). [The MacBride Commission Report].

35 Satelite Andino (SATAN). Una Metodologia de Evaluacion Economica. ENTEL-Chile, Secretaria General, Oficina de Ingenieria Economica (Doc. OIE-54), 1957).

36 Ibid.; p.8.

37 Verbal communication with INTELSAT personnel. (INTELSAT produced a report on shared leased transponder capacity for the ANCOM countries in 1984. See, note 56 infra).

38 Chile formally resigned (or was excluded) from ASETA at the March 1977 meeting of the ASETA Board of Directors.

39 Study undertaken by the European Community, funded by a non-reimbursable credit in the amount of US $400,000. The second part of the study - the technical design of the system -- has yet to be undertaken. The European Community offered ASETA funds for this second study, and the United Sates Trade Development Program (TDP) also had funds available for the study in 1986.

40 AWST, September 7, 1987, pp. 59-65, p.61 in particular.

On the one hand, the trend in the United Sates seems to be for the satellite builders and sellers to offer their clients a "package deal" which includes launch services and insurance. While the package may appear to be less expensive and attractive and may facilitate negotiations for insurance, there may be an additional hidden premium for the satellite manufacturers' services. On the other hand, other countries (China, the Soviet Union and Japan) are seeking to penetrate that launch

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market and may well offer their clients very competitive terms. Whether these conditions will be acceptable to the Western countries remains to be seen, since highly sensitive issues (aside from competition and costs) are involved.

In recent months (Spring 1987) AWST has published numerous articles on the Chinese and Russian launch capability and market.

41 Minutes of ASETA's 4th Meeting of the Board of Directors, Caracas, September 1976. Annex No. 1 of ASETA, Sistema Andino de Telecomunicaciones por Satelite: Proyecto CONDOR. (Summary of the Project in Spanish, drafted by TELECOM Colombia, Office of International Affairs. (1986). [This project summary includes pertinent parts of the minutes of ASETA's Board of Directors. All cites to these, except where otherwise noted, are taken from this summary. English rendition of the Spanish versions by S. Ospina.] [Cited as ASETA Summary hereinafter].

42 ASETA Summary, Annex No. 4. Executive Summary, CAL/SaTel Ltd. study. (Neither the entire Executive Summary nor the longer report was available to this author. The conclusions drawn by ASETA, therefore, are not verifiable.) [The excerpt from the Executive Summary is not dated or paginated]. [English original].

43 Ibid.

44 Dr. Angel Velásquez Abarca, of the Geophysics Institute of Peru, and a participant in ASETA's technical activities wrote an assessment on the CAL/saTEL report, in which he provides many valuable insights and commentaries: Estudios de Factibilidad Sobre Un Sistema Regional de Satélite Para Los Países Andinos. Insto. Geofísico del Peru, Dirección de Investigación Científica, Proyectos Especiales. Doc. IGP-04/DICPE-78 (Lima, February 1978).

45 ASETA Summary, _supra_, note 31, Annex No. 3. (6th Meeting of the B/D, Venezuela).

46 At a meeting held in Bogota, Colombia in December 1976, eight Equatorial countries -- countries which are traversed by the Equator -- (Brazil, Colombia, Congo, Ecuador, Indonesia, Kenya, Uganda and Zaire) issued a statement in which they claimed sovereignty over the segment of the geostationary orbit (GSO) which lies above their respective territory. The other segments of the orbital arc, beyond the national jurisdiction of the Equatorial countries, were to be considered the "common heritage of mankind." The competent international agencies could regulate their use and exploitation for the benefit of mankind.

The complete text in English of the Bogota Declaration appears in 6 Journal of Space Law 2: 193-197 (1978).

47 See, supra notes, 7, 9, 16, 22 on this study.

48 ENTEL-Chile document supra, note 35.

A fourth satellite project for the domestic use of Brazil was also under study. However, the Brazilian system was beyond the ambit of the ANCOM countries. Since it was (and is) intended to be for purely domestic communications purposes, it was not a viable alternative to the ANCOM Satellite.

49 See Sommerlad, supra, note 16.

50 Velasquez, supra, note 33, pp. 7-15.

51 The SATCOL project presents interesting legal and political issues, especially in regard to establishing sovereign claims over the "Colombian" segment of the geostationary orbit. It is beyond the ambit of this thesis, which is on the proposed regional system, to analyze in depth a proposal for a national system.

52 ASETA Meeting, Lima, Peru January 1982.

53 ASETA, XV Meeting of the Board of Directors (B/D); Bolivia, Nov. 1983.

54 ASETA. XVI Meeting of the B/D, Bogota, September 1984.

55 Third Meeting of the Ministers of Communications, Cartagena, Nov. 1984. ASETA Summary, <u>supra</u>, note 41.

56 INTELSAT Report on Transponder Leasing for the Regional ASETA System; Dec. 1984, (place of publication not stated), pp. 1-3. [Cited as Transponder Lease Report hereafter].

57 Ibid.; Table 22, Leasing Charges for National Telephony and International TV for ASETA Members, p.32.

58 The VISTA services now offered by INTELSAT use small Standard D-1 earth stations, and are designed to provide basic telephone services to communities with few if any, telecommunications services, and which require few circuits. VISTA also uses Demand Assigned Multiple Access (DAMA) which permits more channels per transponder, reducing the number of satellite trunks required. (INTELSAT, Bridging the Gap II, p.14, Washington, D.C.). ENTEL-Peru in 1977 suggested utilizing DAMA to achieve greater efficiency -- at lower cost -- in rural telecommunications within ANCOM. (See Velasquez, <u>supra</u>, note 33).

59 ASETA Doc. No. 105, October 1983 (Technical-Economic Aspects of Shared INTELSAT Leased Capacity for the Regional Andean Satellite System). (Original in Spanish; English version by S. Ospina).

60 Ibid.; p.30-32.

61 Conversation with INTELSAT personnel, 1987.

62 Transponder Lease Report, Table 23: "Possible Transponder Assignments to Meet ASETA Demands", p.33.

63 Chapter 8, <u>infra</u>, analyzes the possibility of utilizing INTELSAT's space segment for regional telecommunications, as provided in Article III of the INTELSAT Agreement.

64 <u>Transborder Satellite Video Services</u>, 88 F.C.C.2d 261-289(1981) at 268.

65 ASETA Summary, VII Meeting of ASETA's Board of Directors, Quito, April 1985.

66 Ibid.; XIX Meeting of the B/D, Caracas, Dec. 1985.

67 A copy of parts of the ESCO 1986 Report was made available to this author. However, it is difficult to draw conclusions from these parts, as they contain no statistical data or clear definitions of the tasks ESCO set out for itself. [Cited as ESCO Report hereinafter].

68 In 1984 President Reagan determined that satellite systems separate from INTELSAT were in the "national interest". The Federal Communications Commission authorized them in its Report and Order, In the Matter of Establishment of Satellite Systems Providing International Communications, 101 F.C.C.2d 1046 (September 3, 1985). See, infra, Chapter 8, for commentary on the separate systems.

The Pan American Satellite Corporation (PANAMSAT) is a private American corporation established in 1984. It aims to provide non-common carrier services to/from Latin America. It applied to the Federal Communications Commission (FCC) for the authority to construct, launch and operate a subregional satellite system to meet telecommunications requirements of countries in the Caribbean and Andean regions. It is the first of the authorized separate systems to have the requisite foreign correspondent - (Peru) - but has only one so far. Its satellite is scheduled for launch in the late Spring of 1988.

69 ESCO Report, Section A, "Conclusion".

70 ESCO Report, Chapter II, Section 1. ("Choice of a Configuration"). [The task 100 requirements are not included in the copy of the report].

71 Ibid. Verbatim.

72 Ibid. Verbatim.

73 See ASETA Doc. 105, supra, note 59, and accompanying text.

74 ESCO Report, Chapter II, Section 1.

75 Ibid., Section 3.2.2.

76 Ibid., Section 3.2.4.

77 Ibid., Section 3.24.

78 Ibid., Section 3.2.4.

79 Ibid., Section 3.3.1.

80 Ibid., Section 3.3.2.

81 Ibid., Section 3.3.6.

82 Ibid., Section 3.3.8.

83 Ibid., Section 3.3.

84 <u>See</u>, <u>supra</u>, note 70.

85 EL TIEMPO, Bogota, Colombia, July 10, 1987.

CHAPTER 4

PROJECT CONDOR AND ASETA: INSTITUTIONAL CONSIDERATIONS

The Articles of Incorporation and By-laws of any organization are fundamental to its structure and function since they set forth the powers and limitations of the entity. They are basic to achieving an understanding of how the organization operates.

The Asociación de Empresas Estatales de Telecomunicaciones del Acuerdo Subregional Andino (ASETA), (the Association of Governmental Telecommunications Entities of the Andean Subregional Agreement.)[1] was established in 1974, an outgrowth of the First Meeting of Experts in Communications and Transportation of the Andean Pact. ASETA's members, as was noted in Chapter 3, *supra*, consist of the governmental entities which provide public international telecommunications in Bolivia, Colombia, Ecuador, Peru and Venezuela. Although "public international telecommunications" is not defined in the ASETA Articles of Incorporation or By-laws, membership in the association is limited to the entities that provide international telephony services, to the exclusion of those that provide radio or television broadcast services. These are ENTEL-Bolivia, TELECOM-Colombia, IETEL-Ecuador, ENTEL-Peru, and CANTV-Venezuela. Although in principle they are autonomous governmental agencies, they are dependent on the respective Ministries of Communications and/or Transport.

ASETA's present structure and function, however, do not adequately meet the requirements for an entity that is to own (or lease) and operate a multi-purpose regional satellite system.

A detailed look at its Articles of Incorporation and By-Laws will be helpful in understanding its present limitations, and in making recommendations for the organization that will be in charge of the CONDOR.

A) <u>ASETA's ARTICLES OF INCORPORATION</u>

The <u>Preamble</u> to ASETA's Articles of Incorporation reiterates the recommendations adopted during the First Meeting of Ministers of Communications, May 1974, when it was resolved to form the not-for-profit association. The Articles are divided into eleven chapters, but only the more important and pertinent provisions of the Articles will be discussed.

Chapter 1 provides for the name, (ASETA) nature, (a non-profit organization) and domicile of the new association. The domicile, in Quito, Ecuador, may be changed to any other city in ANCOM by the Board of Directors, but only upon absolute majority vote by the members.[2]

The second Chapter states ASETA's goals and objectives, which are, <u>inter alia:</u>

o to study, propose, and recommend to its members specific policies and means by which to achieve greater cooperation and understanding, to facilitate the development and more efficient use of telecommunications, leading to the greater integration of the ANCOM countries;

o to encourage technical cooperation, gathering and exchange of technical, financial and economic information between members and to maintain the Register of telecommunications specialists;

o to establish and defend common policies not only within ANCOM countries, but also abroad;

o to enhance the most economical and efficient services, within the region and at the international level;

o to coordinate the international inter-connections [sic] projected by its members and which are related to the ANCOM countries;

o to adopt a common policy regarding the purchase of telecommunications equipment and supplies and, where possible, to promote joint trade with the same organizations;

o to recommend and encourage the adoption of common policies and criteria by ASETA in international fora (meetings and organizations).

Thus, ASETA may

o represent, upon request to do so, the interests of its members in negotiations or agreements;

o propose to hold conferences or meetings on subjects of interest to its members;

o coordinate the association's activities with other organizations (such as the International Telecommunication Union (ITU), or the Conferencia Interamericana de Telecomunicaciones (CITEL), to avoid duplication of efforts and to obtain better results;

o to undertake whatever other action may be necessary for the achievement of its objectives, and for the benefit of its members.[3]

Chapter III talks of the Rights and Duties of ASETA members. The members are <u>governmental entities</u> of the ANCOM countries which provide <u>public international telecommunications services</u> [emphasis added but no definition provided], and signatories to these agreements.

"Governmental entity" is defined as one established directly by the Government of the country, or by another governmental body, or whose capital is majority-owned by the government or governmental organization. Should several national organizations provide this type of telecommunications service, only one of them - as designated by the government or its telecommunications administration - will be accepted as a member of ASETA.[4]

The rights of ASETA members are somewhat limited: they may elect and be elected to the positions contemplated in the Articles of

Incorporation or by the Board of Directors; they may vote at the Board of Directors meetings, make proposals, and participate in the deliberations during meetings, so long as these activities are in accordance with the procedures stated in the By-Laws.[5]

The members have the following duties or obligations: to uphold the Association's rules and regulations, so long as they do not conflict with the laws or legislation of their respective country.

They must pay dues promptly, carry out the activities and tasks assigned to them by the Board of Directors, and work toward the achievement of the organization's objectives.[6]

Being a member of ASETA does not preclude the government entity representing the respective country from entering into agreements with other such entities in non-ANCOM nations. The official entity may enter in bilateral or multilateral agreements or contracts as may be necessary for its development, and so long as these are not contrary to ASETA's goals, as stated in its Articles of Incorporation (A/I).[7]

ASETA is comprised of two bodies: the Board of Directors (B/D) and the General Secretariat (GS). There is no indication, however, of how many Directors are on the Board; it is merely stated that the B/D is the "supreme organ", composed of representatives from each member country.[8] The quorum and voting requirements state that at least four members must be present.[9]

The B/D, in its Ordinary meetings, held twice a year, formulates the general policy of the Association, approves the budget as well as the audit of the accounts; it approves any amendments made to the A/I or By-Laws, and appoints the Secretary-General.[10] Extraordinary meetings of the B/D may be convened at the request of the Secretary-General or a member country, but these meetings require the approval of the majority of the members.[11]

The General Secretariat (GS) is responsible for coordinating and implementing the B/D's recommendations and resolutions. It is also responsible for the day-to-day management of the Association, from bookkeeping, hiring the necessary personnel, to submitting an annual report on ASETA's activities. Perhaps its most important responsibility is that it is the legal representative of ASETA, and as such, it must act pursuant to the organization's objectives and implement the B/D's agreements.[12]

The Secretary-General is appointed by the B/D for a three-year term, and may be reelected.[13]

The three remaining chapters of ASETA's Articles of Incorporation relate to its financial assets and the dissolution of the organization (which can occur only upon the B/D's calling an Extraordinary meeting).

B) ASETA's ORGANIZATION RULES

These reiterate and detail the structure and functions of the General Secretariat, which is comprised of two principal departments: the Technical and the Administrative. Sub-divisions may be created, but only when either of these departments requires "specialized supervision."[14]

1) The Technical Department consists of three principal divisions: the Coordination, Technical-Economic and the "Integration" units.

a) The <u>Coordination Division</u> is responsible for gathering and exchanging information, producing reports, maintaining an up-to-date file of telecommunications specialists and on new technologies, establishing exchange programs, including those related to training.[15]

b) The General Secretariat's <u>Technical-Economic Division</u> has the following responsibilities:

- o to undertake technical-economic research, with the aim of providing the most efficient and economic telecommunications services to the ANCOM countries;

- o to do traffic and tariff studies, including traffic patterns, routes, and their interconnectivity;

- o to measure the quality of international services, and make recommendations for their improvement;

- o to study and recommend the appropriate new technologies and services.

One of the more important duties of this department is its coordination with the Board of Governors of the Cartagena Agreement (which is distinct from ASETA's Board), in formulating policies for the purchase of telecommunications equipment; these policies will also take into account ANCOM's industrial development programs.[16]

In other words, based on its studies, ASETA's Board of Directors should be able to suggest to the ANCOM Board of Governors what equipment is required by the member countries, so that (theoretically, at least) the countries would acquire (or manufacture) compatible and efficient equipment. Since the ANCOM countries are planning a regional satellite communications system it would be helpful, if not essential, for them to have compatible infrastructures.

c) The "Integration Division" is essentially the policy-making unit of ASETA. It is charged with establishing common commercial policies, and with defending ASETA's interests in the international telecommunications markets. Further, it is responsible for representing ASETA members' interests and for proposing common policies in its dealings with international organizations (ITU, INTELSAT, etc.) and at international meetings. The latter, however, is not done directly by this Division but by the "pertinent entities."[17]

2) The Administrative Department provides the necessary support services, including scheduling and organizing meetings and conferences, that are needed for the organization's smooth functioning.[18]

C) **ASETA's BY-LAWS**

ASETA's By-Laws, like the Articles of Incorporation, were approved during the Incorporation meeting held in June, 1974, in Lima, and were formally adopted by the Board of Directors in November 1974.[19]

The By-Laws restate in greater detail the main points of the Articles of Incorporation and set forth the procedures and time limitations for convening meetings.

o The By-Laws, Art.3, state that in the event a national telecommunications entity decides to change its representative to ASETA, the new entity so designated must accept and uphold, without reservations, the By-Laws, rules and regulations of ASETA. (The Articles of Incorporation merely state that the national telecommunications entity will designate its representative). Both documents provide that only official, governmental representatives may be designated to ASETA. This seems to preclude private corporations or their representatives, unless these are majority owned by the State.[20]

In regard to voting and quorum requirements, at least a four vote majority is required in both instances. The Articles of Incorporation have the same provision for the adoption of the B/D's decisions.[21] As noted earlier, when these statutes were adopted, ASETA had six members, but now it has only five. Unless they have been amended since 1975, the documents are silent on voting/quorum requirements in case a member is absent or cannot attend a meeting.[22]

ASETA members are required to meet twice yearly (theoretically in March and September). Extraordinary meetings may be convened at the request of any member country to the Secretary-General.

Two months' notice must be given by the Secretary-General to convene an Ordinary meeting. In turn, members are required to give 10 days' written notice, whether or not they plan to attend the Ordinary meeting. In the case of an Extraordinary meeting, it must be convened within 30 days from when it was requested and if agreed to by four members. Written notice of their attendance or not must be given 5 days prior to the meeting.[23] Presumably, if two or more members cannot attend an Ordinary meeting it would be cancelled, since the presence of fewer than four would not constitute a quorum.

As to the Extraordinary meetings, at least four members must agree to hold it, and "silence" (i.e. no response within 10 days of its having been requested) is deemed non-acceptance.[24]

In regard to ASETA's financial assets and budget, the Secretary-General is responsible for establishing and managing these. Each member State makes a yearly contribution to ASETA, although no specific amount or currency is stated in the A/I or By-laws.[25]

In the event that contributions or other payments are offered or made to ASETA, the Secretary-General is required to notify the members, so that they may render a decision on such offers during the next Ordinary meeting.[26]

ASETA's Articles of Incorporation and By-Laws provide this organization with the power to advise and consult, exchange information with other similar entities, to conduct tariff and traffic studies, and try to implement common policies. The power of its members to make decisions on matters of substance, however, appears to be limited: these decisions seem to be left to the national telecommunications administration, if not to the respective Ministries of Communications, on whom they all depend.

There are several other factors that seem to limit ASETA's decision-making power and authority:

o Its status as a non-profit organization, with goals of establishing common policies and furthering integration efforts among the ANCOM countries. It is not a commercial enterprise, nor is it empowered to operate the <u>terrestrial</u> and/or national telecommunications segment of the member countries. Its mandate is to concern itself with <u>public international telecommunications</u>. [Emphasis added]. At best, ASETA can suggest that its members adopt certain policies in international meetings, and in regard to the purchase of equipment. But ASETA cannot interfere in national choices. Sooner or later, however, the national telecommunications networks will have to expand and the hardware should be compatible in all ASETA countries, thus to provide regional telecommunications.

o Its present structure and objectives will require the establishment of another organization to develop, construct and operate a space segment and the concomitant terrestrial support systems. In this respect, the Articles merely state that telecommunications between ANCOM countries and others should be efficient and economical. Whether the proposed satellite system would meet these criteria is open to question, and this issue will be addressed below.

o There is no indication as to how - or by whom - the Board of Directors is appointed or chosen, if the Directors serve for a fixed term or indefinitely. If they are appointed by their respective Ministries, and serve at pleasure, this could lead to discontinuity in their achieving the organization's goals. Each time a new minister is appointed, he or she would want to appoint someone with a similar philosophy to promote his or her country's objectives.

o Presumably there are only five Directors on the Board, one from each Administration. Since a majority of four is required for quorum and voting purposes, this effectively can stalemate any decision-making. A simple majority of three for procedural questions would be more effective, while a unanimous or absolute majority vote could be required only on matters of substance.

o From these ASETA documents it is not clear how much actual power the Board of Directors has. Is the Board empowered to make substantive decisions (based on the recommendations of the Secretary-General) or must the B/D defer to the Ministries? If it can make authoritative decisions, does it have the power to implement these? There is a vast difference between passing resolutions and taking specific, concrete action. (Other documents, such as summaries of the meetings held by ASETA would lead to the conclusion that the B/D has much power to pass resolutions, but not much to act).[27]

o No separate Executive Committee is provided for in the ASETA Articles of Incorporation or By-Laws; the General Secretariat is the executive organ. Its spokesperson is the Secretary-General, who makes his recommendations to the B/D. Since presumably the B/D has only five members, and the Secretary-General appears to be the only person who can speak or act on its behalf, an Executive Committee would be superfluous.

o ASETA's financial assets depend on the members' contributions and therefore are probably quite limited. As with the ANCOM Agreement, special exemptions are made for Bolivia and Ecuador. The respective contributions to ASETA's budget are:

ENTEL - Bolivia	8%
TELECOM - Colombia	28%
IETEL - Ecuador	8%
ENTEL - Peru	28%
CANTV - Venezuela	28% [28]

It is contemplated that the future organization which will operate the satellite system will also prorate the members' contributions. This would affect their initial investment share as well as affect their consequent voting power, despite of

ANCOM's nondiscrimination policy toward its poorer members. This depends on what sort of voting structure is adopted by the new organization that would manage and operate the CONDOR. If it follows INTELSAT's or EUTELSAT's pattern, where voting is weighted by investment shares, Bolivia and Ecuador could be at a disadvantage. On the other hand, if they were given equal voice (as in the ITU) despite their prorated contribution, the other larger investors could end up resenting the equal voting power of the smaller contributors.

o The financial constraints faced by the member countries are likely to be reflected in ASETA's participation in international meetings. Since each country pays its own expenses to attend meetings, the representative is likely to defend or promote his country's position: he is there as the spokesperson for his country and not for ASETA. A national policy which diverges from the organization's views could lead to potential difficulties (as in the case of claims to sovereign rights over the geostationary orbit by the Equatorial countries - Colombia and Ecuador).

o Although ASETA cooperates with other international telecommunications organizations (e.g. the ITU and INTELSAT), it is not represented at meetings of these organizations, other than by the individual representatives of the member countries. ASETA does not have Observer status to the United Nations or to the ITU. If it does enjoy this status, it is conspicuous by its absence at such meetings. (In this respect ASETA differs from the Latin American Civil Aviation Commission, which has Observer status to IATA, and works closely with ICAO).[29]

In summary, ASETA's present status and structure may work well so long as this organization plays primarily an advisory and coordinative role. However, ASETA is not equipped (statutorily, personnel-wise, or financially) to own and/or operate the proposed CONDOR satellite system. A new entity (one that should be patterned along the lines of existing regional organizations such as EUTELSAT)[30] will have to be established to operate the CONDOR.

D) <u>OPTIONS AVAILABLE TO CONDOR'S OPERATING ENTITY</u>

Prior to adopting a structure like EUTELSAT's, the ANCOM countries must decide on the scope of their organization's activities - whether it will provide domestic and international telecommunications on the same basis and whether they will adopt the ITU's definition of telecommunications, which seems to be all-inclusive and certainly more precise than "public international telecommunications," which is not defined in any of the ASETA documents (Articles of Incorporation or By-Laws).

ASETA's present structure, in accordance with its Articles of Incorporation, limits it to being a non-profit organization which seeks to strengthen the ties and integration among its five members, the entities that provide public international telecommunications. ASETA cannot operate or manage a regional satellite system which might include telephony and television transmissions, as the provision of the latter is beyond its jurisdiction.[31]

Hence, it will be necessary to restructure ASETA, or to establish a new separate entity that will be capable of operating and managing a regional satellite system that will provide all kinds of telecommunication services, and not only public international telecommunications.

Previous feasibility studies have alluded to the need for a new organization, and the European Satellite Consulting Organization set forth quite explicit suggestions and alternatives in its Report to ASETA. In essence, ESCO recommended that the operating entity be patterned on EUTELSAT.[32]

ASETA is also aware of this need, and thus it established a "Comisión Andina de Telecomunicacion por Satélite" (CATSAT), while ESCO proposed "TELENDSAT (presumably its acronym for an Andean Telecommunication Satellite) which would be run by "EMA", the Empresa Multinacional Andina. ASETA's most recent proposal is the establishment of "OATS", the "Organización Andina de Telecomunicaciones por Satélite". (Andean Organization of Telecommunications by Satellite).[33]

This plethora of names and acronyms is confusing, since they do not tell an uninformed person what the name represents. A name should be agreed upon, one that both describes the type and location of system. "ANDESAT" is thus proposed: "Andes" immediately gives the geographic location, and "Sat" obviously refers to satellite. Like EUTELSAT and ARABSAT, ANDESAT would clearly identify the operating entity of this regional satellite system. It is also short, simple and easy to remember, and for these reasons, this name, or a similar one should be adopted by the operating entity.

Choosing a name for the operating entity is of secondary importance to the structure of the organization. The structure is fundamental, but also dependent on a number of factors.

To begin with, financing the organization needs to be considered, and here ASETA has various options available. Will ANDESAT be a commercial, international corporation, a la INTELSAT and EUTELSAT? In this respect it should be recalled that unlike the other regional systems, each with over twenty member countries, "ANDESAT's" participants are only the five countries of the Andean Pact. Hence, the initial investment share of each country will be considerably greater than if it were prorated among a larger group.

According to the ESCO Report, and recent press reports, Colombia, Venezuela and Peru would each contribute 28%, while Bolivia and Ecuador's participation would be limited to 8% each. These percentages relate to the initial investment of US $210 million for the space segment alone, according to these same sources. The likelihood exists, however, that the actual costs of just the spacecraft, launches, insurance, etc., will be much higher -- closer to US $350 million, by this author's estimates.

The problem is that none of the governments involved has this kind of money at its disposal. Venezuela used to be oil-rich, but its economic fortunes have declined in this decade. Colombia's financial situation, though not as grim as that of Bolivia or Peru, is not too rosy. Ecuador and Colombia both suffered huge economic losses because of natural disasters. An earthquake in early 1987 ruptured Ecuador's main oil pipeline, and Colombia is still feeling the effects of the 1985 Volcano del Ruiz "meltdown", which killed over 20,000 people, annihilated a city and affected one of the most fertile areas of the country.

All these countries suffer from high inflation indexes, with the result that basic necessities -- housing and food -- become luxury items, and "luxury items" -- telephones and cars -- are virtually beyond the reach of most people. Thus, the governments, jointly or separately, are going to have difficulties in obtaining the funds for the initial investment required. (Colombia alone spent nearly six months trying to obtain loans from commercial banks for non-telecommunications purposes).[34]

If the governments are unable to secure funds from foreign lenders, are they willing to seek financing from private parties - either foreign or national corporations? The latter is another alternative available to ASETA members: participation of the private sector in the satellite system.

If this option were chosen, then the structure of "ANDESAT" would have to be quite different from ASETA's present one. Private investors could be invited to buy shares in "ANDESAT", up to a certain percentage.

A commercial, for profit organization would result, with voting power shared by the participants, (government and private parties), weighted according to their initial investment, or with the government(s) being majority owners.

Private participation would entail sharing the profits as well, and a possible weakening of the role of the government as the provider of communications as a public service.

This choice would depend on what type of services are offered - i.e. on the goals of "ANDESAT": only national telephony, or regional, commercial telephony, television and radio broadcast; private data transmission networks or services offered exclusively by the public (government) sector?

Obviously the alternatives have to be well thought out and planned, as they include the possible "privatization" of some of the services, and loss of the governments' monopoly in this vital sector. Ultimately the governments must decide if - and which - services should be given over to the private sector, to entice it to provide these services, and yet not deplete the public coffers in the process (since foreign revenues are one big benefit of international telecommunications). One advantage of having the private sector participate, and/or also have the television entities (advertisers and programmers) involved in the provision of services, would be that the number of investors would increase, thus expanding the voting and capital base of the entity.

As presently structured, it seems that each country has one vote in ASETA. Since a vote by 4/5 is required on all matters, including quorum, no decisions of substance are taken without prior deference to the Ministry of Communication and/or Transportation, and even to the Board of Governors of the Cartagena Agreement. The result, it seems, is a perpetual stalemate, lack of autonomous decision making power or financial control.[35]

It is suggested that having cumulative voting and/or weighted voting, if allowed by the corporate laws of the country where "ANDESAT" would have its headquarters or be incorporated, and particularly if the private sector were allowed to vote on an equal basis with the government, would lead to taking decisions more expeditiously than at present.

In the process, however, the governments would be giving up (if not sharing) their control and power with the private parties involved -- a radical change from the present situation.

Thus far two alternatives have been suggested: continued government monopoly, from financing to operating ANDESAT, and secondly, a new organization with both public and private sector funding and management.

A third alternative is the system financed and operated only by the private sector. (The latter is an idea whose time has not come yet in most countries). The result could be a private monopoly, rather than a government one, with the provision of fewer services to even fewer people. The focus would be on the profitable services, and the whole concept of telecommunications as a public service (with concomitant loss of subsidized services in some areas) would disappear. Would the end result be better services to a few, or the overall development of a viable telecommunications network? It is difficult to predict what the outcome would be.

In any event, either of the three alternatives outlined above could be applied to "ANDESAT" as operator of a regional telecommunications system. Whether the satellite system is owned by "ANDESAT" or leased from INTELSAT would affect "ANDESAT's" structure, however. Although private capital could still be invested in transponder leases, the governments would have to be the major contributors of the capital, in order to comply with the terms of the INTELSAT Agreements.[36]

A regional satellite system, utilizing INTELSAT-leased or purchased transponder capacity would be novel, and it might be possible under Article III and Article XIV(d) of the INTELSAT Agreement. Whether the other INTELSAT signatories would approve of the leases, particularly if the private sector were participating is also an interesting question but one that is not easily answered.[37]

CONCLUSION

In choosing a new organizational structure for its satellite system, ASETA members should consider whether the regional satellite system is to be wholly owned and controlled by the governments; whether they will allow for "mixed" funding, both public and private sector investors; whether having only private or only public sector funding is a viable alternative.

They must also consider whether they will purchase or lease the space segment, and from whom (INTELSAT, PANAMSAT or another system), since this decision would also affect the structure of "ANDESAT".

Furthermore, and in any event, the voting/quorum requirements of the new organization must be changed, to provide for cumulative and/or weighted voting (according to the investment share of the participant). Thus, "ANDESAT" could avoid stalemates, and proceed to take substantive decisions more rapidly.

ASETA members should also consider the corporate laws of each member country prior to deciding where the incorporation and headquarters of the operating entity will be located. This decision should be based on the legal advantages offered by local laws, and not merely on the prestige the country may gain by having the headquarters located in its territory.

Underlying all these considerations is the fundamental one: will "ANDESAT" be an international inter-governmental organization, or will it be a commercial, for-profit organization? In either case, it should be an autonomous entity, capable of generating and allocating its own financial resources and accountable to its constituents, whether they be from the public or private sector.

If ASETA's goals and objectives are clear, a viable organizational structure will not be too difficult to establish -- at least on paper. The shape and form of the operating/managing entity, whatever its name, will be relatively easy to draft and implement if its goals are clearly set forth.[38]

1 The Andean Subregional Agreement is officially known as the Cartagena Agreement, signed in 1969 by Bolivia, Chile, Colombia, Ecuador, Peru, and eventually by Venezuela. It is part of the broader integration efforts undertaken by the Latin American Free Trade Association. See, supra, Chapter 2, note 12, and Chapter 3, notes 1-9.

2 ASETA, Incorporation Agreement and Articles of Incorporation, approved at the Meeting of Incorporation, Lima, Peru, July 24-26, 1974, Chapter V Art. 23.

3 Ibid.; Chapter II, Art. 1-6.

4 Ibid., Chapter III, Art. 5-7.

5 Ibid., Chapter III, Art. 8.

6 Ibid.; Chapter III, Art. 9.

7 Ibid.; Chapter III, Art. 10.

8 Ibid.; Chapter V, Art. 14.

9 Ibid.; Chapter V, Art. 17.

10 Ibid.; Chapter V, Art. 23.

11 Ibid.; Chapter V, Art. 15.

12 Ibid., Chapter VI, Art. 28(g).

13 Ibid.; Chapter VI, Art. 26.

14 ASETA, Normas de Organización (Articles of Incorporation or Association) Articles 1, 2. (Approved at the First Meeting of the Board of Directors, La Paz, Bolivia, November 1974).

15 Ibid., Chapter III, Technical Departments, Art. 6, 7.

16 Ibid., Chapter III, Art. 8(a-e).

17 Ibid., Chapter III, Art. 9-11.

18 Ibid., Chapter III. Art. 12.

19 ASETA, Reglamento Interno,

20 Ibid., Chapter II, Art. 3., and see, supra, note 4.

21 Ibid., Art. 18.

22 When the A/I and By-Laws were drafted in 1974, ASETA had six member countries. Therefore, the minimum vote/quorum of four was a 2/3 majority requirement. With Chile's withdrawal in 1977 the minimum of four became a 4/5 majority requirement, or nearly a unanimous vote/quorum requisite! This can alter the voting weight significantly, since a single dissenting member is likely to be over-ruled more easily than if at least 2 members dissent. On the other hand, if two members dissent, there is no majority vote, which can lead to stalemates over any point.

23 Ibid., Art. 12, 15.

24 Ibid., Art. 12. Silence -- at least in the U.S. common law -- is usually deemed acceptance, not disagreement or rejection.

25 Ibid., Art. 40.

26 Ibid., Art. 42.

27 Sistema Andino de Telecomunicaciones por Satelite: Proyecto CONDOR: TELECOM, Oficina para Asuntos Internacionales. November 1986. (Original in Spanish).

The Colombian representative to ASETA, TELECOM, compiled a summary of ASETA activities which includes developments regarding Project CONDOR, as well as excerpts of ASETA meetings that highlight these developments. It is apparent from the excerpts that ASETA will take decisions on matters such as its members' attendance at international meetings or on their organizing conferences. Decisions requiring a substantial commitment (e.g., of funds) are frequently tabled until the "next" meeting.

28 These percentages are quoted from the European

(footnote continued)

(footnote continued from previous page)
Satellite Consulting Organization's feasibility study report, presented to ASETA in December 1986. ESCO Report, Chapter 3, supra, note 70. Regarding special provisions for Bolivia and Ecuador, see, supra, Chapter 2, note 12.

29 See LACAC, supra, Chapter 2, note 21.

30 EUTELSAT is the acronym for the European Telecommunications Satellite Organization. Its Convention and Operating Agreement entered into force September 1, 1985. Twenty countries were signatories in 1985.

31 See, supra, p. 4.5.

32 See, supra, Chapter 3, note 70.

33 EL TIEMPO, Bogota, Colombia, November 21, 1987, p. A-1.

34 The efforts to obtain these loans were described in several articles in EL TIEMPO, Bogota, Colombia, in December 1987. The WASHINGTON POST stated that although foreign lenders consider Colombia's economic record as exemplary, most banks are reluctant to invest in Latin America, considering it a bad credit risk. Washington Post, Washington, D.C., February 14, 1988, p. K2.

35 See, supra, notes 8, 20, 21.

36 The INTELSAT Agreement is binding on its signatories, which are ". . . a Party, or the telecommunications entity designated by a Party, which has signed the Operating Agreement and for which it has entered into force or been provisionally applied." (Article I(g), INTELSAT Agreement). The EUTELSAT Convention, on the other hand, allows for participation by designation of a Party [government] to the Convention, of a public or private telecommunications entity. EUTELSAT Convention, Articles I(e), II(b).

37 Chapter 8, infra, elaborates on these issues.

38 In respect to clarity of objectives and goals, see the recommendations made in Chapter 9, <u>infra</u>.

CHAPTER FIVE

PROJECT CONDOR - LEGAL CONSIDERATIONS

The legal aspects of any telecommunications project cannot be ignored, nor can they be considered only from a "national" perspective, despite each country's sovereign rights over its telecommunications, and their regulation.[1] Modern means of transmission transcend national boundaries, rendering purely national policies obsolete. This is particularly true of satellite communications, where the "footprint" of the satellite tends to spill over national borders.

Hence, although national telecommunication laws, policies, and domestic regulations are important, international regulations and agreements usually take precedence over national laws in regulating conduct between the signatory states.

Since Project CONDOR is a multinational endeavor, this chapter will focus on the international legal aspects of the project, rather than on national legislation. National laws or policies are rarely applicable extra-territorially, but they do affect relations between countries; therefore, their international impact must be taken into account. This is especially true of copyright laws and television broadcasts as well as of deregulatory policies. Other laws, such as international bilateral or multilateral treaties, obviously involve more than one country's particular policies; this truism is well exemplified in agreements relating to the transportation and telecommunication sectors.

The discussion here will focus first on national legislation, on regional agreements peculiar to the ANCOM countries and lastly, on the multilateral treaties that are likely to affect Project CONDOR's outcome.

To date, the feasibility studies on the proposed regional satellite system for the Latin American countries have focussed primarily on the technical-economic issues involved in such an undertaking. Although the studies have alluded to the need to consider the legal aspects of a regional system, none of them has addressed them.[2] The ESCO Report is the only one to mention some basic legal consideration pertaining to the structure and operation of "TELANDSAT."[3]

Legal considerations are basic to any enterprise, but they go beyond the structure of the operating entity which, so far, is the only legal consideration addressed in the feasibility studies.[4]

This chapter will consider some of the legal issues involved in establishing a regional satellite system. National legislation will be looked at in general terms only, since it is not applicable extra-territorially without the consent or agreement of the other country or countries.[5]

Since a regional system like the one envisioned by ASETA is by definition an international one, existing international telecommunications laws will be examined; i.e., the status of the countries vis a vis the pertinent space treaties drafted by the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS); the ITU Convention, and the INTELSAT Agreements. The national or domestic legal structure will be examined first, followed by the international legal considerations.

A) **NATIONAL LAW**

National sovereignty over telecommunications ranges from the adoption of technical standards to regulating the content of the communication. The government's involvement or intervention varies from time to time, and certainly from country to country. Hence, in the United States, fairly liberal communications policies with a penchant for regulation by the market forces have been the principal philosophy in the last decade.

By contrast, in Latin America, particularly in countries where there have been less democratic rulers, government ownership of and control over telecommunications have been the rule rather than the exception.

In the ANCOM countries, telecommunications traditionally have been provided and controlled, (if not owned) by the governments through the respective Ministries of Communications and/or of Transportation. For example, one Colombian decree stated:

> "The communications sector comprises those persons or organizations which have ties [i.e., are involved] in the establishment or exploitation of the postal services,

telecommunications, radio broadcasting and television."[6]

While the Ministry of Communications (and/or Transport) is the final authority on matters relating to its mandate, in some of the ANCOM countries this authority has been delegated to semi-autonomous governmental entities; (for example, the five members of ASETA)[7]. Radio, and television are regulated by an entity other than the one that regulates telephones and telegraphs.

In Colombia, for example, the Instituto Nacional de Radio y Television (INRAVISION) was established by decree in 1966 and its by-laws approved in 1969;[8] TELECOM, in charge of public international telecommunications was established in 1968 as an autonomous entity.[9] The Venezuelan CANTV is a government monopoly established in 1970, which governs not only telephones, telex and data transmission, but also the international transmission and reception of television programs.[10] Similarly, IETEL-Ecuador has under its mandate radio, television and other telecommunications, except for mobile maritime communications.[11]

In Peru, ENTEL's charter was approved in 1972.[12] In Bolivia transportation, public works and communications were under the same ministry until individual under-secretariats were established in 1968 to govern communications and transportation separately from other public works.[13] A general law of telecommunications was enacted in 1971[14] and although ENTEL-Bolivia was established in 1965, its legal status was ratified only in 1972.[15]

Thus, by 1972, all the ANCOM countries had established separate and autononous telecommunication entities. Coincidentally (?) by 1973 they had also signed and ratified the INTELSAT Agreements.[16] These organizations are the providers of public international telecommunications, representatives to ASETA, and signatories of INTELSAT.

Telecommunications are fundamental to national development and integration, as well as to maintaining good relations with neighboring countries. Thus, countries enter into bilateral agreements, providing for regulated and acceptable communications from one country to the other. The ANCOM countries are no exception; they have signed numerous bilateral agreements in regard to tariffs, as well as others providing for, inter alia, microwave links between adjacent countries.[17] The ultimate goal was the establishment of the "Red Interamericana de Telecomunicaciones" (RIT), (Inter-American Telecommunications Network), going from Venezuela, through Colombia, Peru, Ecuador to Chile. The RIT facilitates telephony and data transmissions, but not TV broadcasting between the countries.[18]

Although the ANCOM countries are able to communicate with each other by the regional microwave links, this network is not entirely satisfactory to meet either their national or international telecommunication needs. (E.g. rural telephony becomes quite expensive). Satellite transmissions however, would be able to meet both domestic and regional requirements more efficiently, if not more economically. But they raise a series of legal issues that go beyond national boundaries and policies.

While national telecommunications are governed by the Ministry of Communications through the autonomous telecommunications agencies, international telecommunications are governed by a series of multi-lateral agreements. Where a telecommunications network exists (RIT), or is contemplated (Project CONDOR) that by its nature (broadcasting and satellite transmission) goes beyond national borders, the laws of the adjacent States should be harmonized to permit the communication from abroad, or at least along the borders. The transmitting country usually will be under the obligation to minimize the radius of its transmissions into neighboring countries to avoid interference with the other country's transmissions. The receiving countries, however, are put in a difficult situation: if they object to foreign transmissions and try to interfere with them (by "jamming" them), they run the risk of instituting prior restraint measures that may amount to censorship.[19]

Realizing that it is nearly impossible to control the reception of satellite signals, let alone radio broadcasts without "jamming", some governments have chosen to regulate the installation of parabolic dishes (earth stations) on aesthetic grounds or existing zoning laws.[20] Since the government is unable to prevent the sales of the dishes or their installation on the basis of existing telecommunications laws, which often are so antiquated that they don't even consider new technologies, it can limit their proliferation on other grounds (aesthetics), without being accused of interfering with an individual's right to receive a communication.[21]

The current regulations, at least in Colombia, are designed to discourage the "piracy" of satellite signals obtained mostly from North American satellites.[22] The dishes, however, are impervious to the programs' origination. Therefore, an interesting question arises: assuming a regional satellite is launched and it transmits government-sanctioned programs to the ANCOM region, will there by any attempt, and by what means, to supervise the installation of parabolic dishes to receive only the regional programs?

Whether other ANCOM countries have similar regulations or legislation in regard to parabolic dishes is unknown to this author. In any event, the ASETA countries will have to reach agreements on the transmission and reception of regional broadcasts which will be intended for the general public, since that is one of the potential goals of the CONDOR -- to provide regional television coverage.

These agreements relate to technical matters, economic questions (copyright remuneration, for example), and other legal-political questions. A number of regional and international copyright agreements are currently in force, some of which will be examined next.

B) INTERNATIONAL LEGISLATION

1) Regional Agreements

The ASETA countries are experienced in entering into regional agreements such as the Cartagena Agreement of 1969,[23] the Andrés Bello Agreement of 1970.[24] Even ASETA's creation in 1974 is testimony of the countries' willingness to cooperate and achieve greater regional integration at several levels.[25] Moreover, they share linguistic, cultural and legal traditions. For example, Ecuador's and Colombia's civil code are both based on the code drafted by Andres Bello in the nineteenth cetury.[26]

Despite these positive integration attempts, however, the ANCOM countries do not share the same views on certain legal issues. This lack of a unified legal position might be detrimental in the establishment and operation of a regional satellite system which will require them to at least agree on certain legislation. The lack of unity, and the disparate philosophies are evident in their having ratified (or not) several treaties pertinent to international telecommunications.

2) International Copyright Treaties

Copyright protection -- the protection accorded by national law to the creator of an artistic, literary or scientific work -- may not be the most pressing of international issues, but it is important in that it reflects the value a particular society places on its cultural, scientific or artistic achievements. Copyright law is not enforceable extra-territorially, absent a bilateral agreement or adherence to the international conventions. In the latter case, only the signatories to the convention can seek protection of their copyrighted material. Enforcement of copyright laws is important in that it safeguards creative efforts, but also because it is a source of interests (i.e., be able to easily collect royalties).

There are several international copyright treaties under which an author may seek protection for his/her creation -- but with a few provisos: the first is compliance with national legal requirements to protect a work, and secondly, provided the country of which the author is a national is party to the treaty.

The principal treaties are the Berne Convention for the Protection of Literary and Artistic Works (Paris Act, July 1971), also known as the Berne Union (BU).[29] The Berne Union offers one of the highest levels of protection to the intellectual property of authors without their having to fulfill certain requirement in order to safeguard their work. Among the ANCOM countries, however, only Venezuela is a member of the Berne Union,[30] and so it cannot seek protection under its terms from the other ASETA members.

The second international treaty is the Universal Copyright Convention (UCC), which seeks to protect the economic rights of authors, and to which all ANCOM countries (except Bolivia) are parties.[31]

revenue to the creator and therefore beneficial to a country's economy.

Among the ANCOM countries, the level of copyright protection varies significantly, as may be seen just from the period of protection of an author's work. (A work is usually protected for the lifetime of an author plus a number of years after his death ("post mortem auctoris", or p.m.a.). In Bolivia the "p.m.a" period is 30 years; in Colombia it is 80, whereas in Venezuela it is a fifty year period.[27] In some countries' laws, provisions are made in general terms for the preservation of its cultural heritage (Bolivia), or for the Ministry of Communications to enforce the applicable copyright law (Colombia).[28]

Disparate provisions for the protection of certain creations will present difficulties for the ASETA countries, especially if they proceed with regional (i.e., international) television broadcasts. Thus, it would seem essential to harmonize some aspects of their national laws and to adhere to at least one of the major copyright conventions. They would thereby protect not only their cultural heritage but also their economic

The UCC requires that works fulfill three requisites: they must carry the word or symbol (c) copyright, the year of first publication and the author's name. These formalities and other national requirements are often deterrents to obtaining copyrights.

A third convention specifically protects "neighbouring rights," not protected by the Berne Union or the UCC.[32] The 1961 Rome Convention protects performers, producers of phonograms and broadcasting organizations. Unlike the BU or UCC, which do not define "broadcasting", the Rome Convention does: it is the ". . . transmission by wireless means for public reception of sounds or of images and sounds."[33] The Rome Convention provides broadcasting organizations several rights, but at the expense of deleting certain of the authors' rights.[34]

The terms of this Convention are binding on Colombia and Ecuador, the only two ANCOM countries which have ratified or acceded to it.[35] None of them has signed or ratified the 1974 Brussels Satellite Convention,[36] and therefore cannot seek protection of the satellite signal that CONDOR might transmit.

In addition to the conventions cited above, there are other bilateral and multilateral agreements and copyright treaties in effect in Latin America. Two of them are worth mentioning: the Buenos Aires Convention on Literary and Artistic Property of 1910 offers protection to any author (whether a national or a foreigner) whose works are published in any of the signatory countries.[37] However, only three ANCOM countries -- Colombia, Ecuador and Peru -- have signed and ratified the Buenos Aires Convention, and could claim protection under its terms.

The other treaty of importance is the Inter-American Convention on the Rights of Authors in Literary, Scientific and Artistic Works of 1946, also known as the Washington Convention. This treaty was the result of the first meeting of experts on copyright issues, rather than just government representatives. One salient point of the Washington Convention is that it seeks to protect the economic rights, rather than the intellectual property, of authors. It also grants protection to authors which have obtained rights in one of the signatory States without further formalities (e.g. registering the work).[38] Among the ANCOM members, only Colombia and Ecuador have ratified the Washington Convention.[39]

One fundamental aim of the international conventions on intellectual property or author's rights in their creation is to recognize their contribution to the cultural, literary or artistic wealth of their country and of the world. This recognition comes to them in the form of royalties - financial remuneration for the use of their works. However, the advent of new technologies, of new means of distribution of a work (broadcasting, reprography, etc.) has complicated the protection and remuneration process. Hence, compulsory licenses have been established under which the author receives some economic reward for the use of his/her work, but no longer receives the same protection for its content.[40]

Other factors which tend to diminish authors' rights in their creation are the "fair use" of the work,[41] as well as the special provisions for developing countries, incorporated in the Berne Union and the Universal Copyright Convention.[42] The result is that more works are accessible to a larger public but at the expense of the creator or author. Countries which "import" the majority of books, films, TV programs and other works benefit from these provisions; the "exporting" countries are the losers.[43]

Lack of adherence to the same copyright convention makes the enforceability of the laws more difficult. Thus, other methods of seeking compensation for the use of copyright works have been instituted, such as making payment of royalties part of a larger economic package or of bilateral agreements.[44]

Copyright laws, national and international, have more than economic effects. They seek to enhance cultural and scientific achievements, and to have these recognized as well as protected universally.

The copyright conventions (including the Brussels Convention which protects only signals transmitted by satellite) are important for countries engaged in or contemplating the broadcasting of television or radio programs via satellite to other nations. Their purpose (with the exception of the Brussels Treaty) is to secure the protection of authors, creators of literary or artistic works as well as of the broadcasting organization.

Since one of the proposed objectives of Project CONDOR is to broadcast television programs domestically and regionally, the countries involved should aim at harmonizing the terms in their national copyright laws, (for example, the period of protection after the author's death), and should consider adhering to the same international copyright conventions. Thus they could claim protection as against each other as well as facilitate copyright negotiations amongst themselves and other sources of broadcast materials. The Brussels Satellite Treaty, if ratified by all five ANCOM countries, would provide protection to the signals transmitted by the CONDOR, even though it would not protect the content or message of the signal.[45]

Regional adherence to the same conventions would also discourage the illegal transmission and reception of broadcasts, whether by terrestrial means or by satellite. More importantly, however, it would encourage the creation of works within ANCOM, to be broadcast within the region. Thus, cultural, scientific -- and economic -- integration would be facilitated. And it should be recalled that integration at all levels is one of the principal objectives underlying both the Cartagena Agreement and Project CONDOR.

Beyond remuneration for the mere transmission of a signal to another country, radio and television broadcasting raise a number of issues which are beyond the scope of this discussion. Suffice it to say that before launching CONDOR and utilizing it for television broadcasting, ANCOM members should consider several points, *inter alia*:

o Programs to be broadcast: how will they be chosen, on what basis? Will preference be given to programs produced in the region? Will most of them be imported? If so, how will copyright fees or royalties be paid (by whom to whom)?

o Nature of the programs: what percentage will be educational, recreational or other?

o Financing of programs and broadcasts: government or private funding? Or if a mixture, in what ratio? Regional pooling of funds?

o Would there be any monitoring of the programs' content? (The Andres Bello Agreement calls for the safeguarding against the corruption of youth by the mass media, including TV).[46] Would they be subject to the approval of the Ministries of Communication, Education and others?

o What copyright protection will be given to regionally-produced broadcasts? Would this protection be given to "educational" programs, or only to "recreational" ones? Who would hold copyrights -- each country or the regional organization?

o If some of the programs are intended only for national reception, will they be encrypted to prevent their reception in another ANCOM country?

o Will the broadcasts be only in Spanish, or will indigenous languages (Quechua, Aymana) and cultures be taken into account?

o Will advertising be allowed, and to what extent?

The above (and other factors not mentioned) must be considered prior to establishing a regional satellite system for regional telecommunications, including TV broadcasting. They affect and are affected by cultural, social and economic considerations which in turn have repercussions on copyright matters. International copyright conventions are the only treaties that go to the core of content or message that is being transmitted. They are central to fostering and preserving cultural values and integration.

The content of other communications -- telephone, telex and data transmission -- may be controlled to some extent by national legislation (e.g. the prohibition of using the telephone to make obscene calls), but at the international level there is no control. (Transborder data flow, or "informatics", and other attempts to put a value on the data transmitted are beyond the scope of this discussion, and will not be addressed).

In addition to the international copyright treaties, there are several other international telecommunications conventions and three organizations that must be considered in relation to Project CONDOR, since they provide the legal, technical and commercial context of satellite communications.

The regulations concerning satellite communications and other outer space activities are the province of specialized agencies of the United Nations: The Committee on the Peaceful Uses of Outer Space (COPUOS hereinafter); the International Telecommunication Union (ITU); the various organs of the ITU, such as the International Frequency Registration Board (IFRB) and the World and Regional Administrative Radio Conferences (known as WARCs and RARCs, respectively).

INTELSAT, the third international intergovernmental organization, provides global satellite communications on a commercial basis.

Each organization plays a different role in satellite communications, but their activities are closely interrelated, and at times they overlap. This is particularly true of COPUOS and the ITU in relation to claims to sovereignty over segments of the geostationary orbit (GSO) made by the Equatorial countries, equitable access to the orbit and use of the radio frequency spectrum. These two organizations will be examined first. INTELSAT, the commercial provider of global satellite communications will be discussed later.

1 Preamble, International Telecommunication Convention, Nairobi, 1982.

2 The Argentinian ETV study, for example, merely states that legal and cultural issues must be considered. (<u>See</u> Chapter 3, <u>supra</u>).

3 ESCO Report, Chapter 3, <u>supra</u>, note 70, Section 3.2.2.

4 Ibid.

5 The United States had to seek approval of INTELSAT prior to initiating its transborder satellite video services. <u>See</u> <u>Transborder Satellite Video Services</u>, 88 F.C.C.2d. 261-289 (1981). (Chapter 8 discusses these U.S. policies in greater length).

6 Article 2, Decree No. 3049 of December 14, 1968, legislating the reorganization of the Ministry of Communications. (English version by S. Ospina). This decree was amended by Decree-Law No. 119 of January 26, 1976, providing the Ministry with a more efficient structure to accomplish its objectives.

7 These are ENTEL-Bolivia, TELECOM-Colombia, IETEL-Ecuador, ENTEL-Peru, and CANTV-Venezuela. <u>See</u>, Chapter 3, <u>supra</u>, note 1.

8 Colombia, Law 74 of 1966, regulating all aspects of broadcasting.

9 TELECOM is an autonomous "public establishment" within the Ministry of Communications, in accordance with Decrees 1050 and 3130 of 1968, Colombia.

10 Resolution 2537 of November 3, 1970. Gaceta Oficial, Venezuela, November 12, 1970.

11 Ley Básica de Telecomunicaciones, Decreto Supremo No. 175, October 16, 1972. Revista Oficial, Ecuador, October 19, 1972.

12 Supreme Decree 23-72-TC of August 2, 1972. El Peruano, Peru, August 3, 1972.

13 Decree 8286 of March 6, 1968. Bolivia, Gaceta Oficial. [No date given].

14 Supreme Decree 1940 of June 2, 1971; Gaceta Oficial, Bolivia, June 4, 1971.

15 Bolivia, Supreme Decree No. 10,179 of April 7, 1972.

16 World Treaty Index. ABC-CLio Information Services. Santa Barbara, California (1983). Information on Bolivia's date of ratification was not available. Considering that Bolivia ratified the International Telecommunication Convention of 1973 in 1978, its ratification of the INTELSAT Agreements may also have been postponed or delayed a few years.

17 See, for example, Ecuador's Agreement on Telecommunications Services with Peru (1973). Peru's agreement with Bolivia for the establishment of telecommunication services signed in La Paz August 1969. (Cited from a compilation on Latin American legislation, Library of Congress, Washington, D.C.). Also see, supra, note 5.

18 The RIT was hailed as

> "the most ambitious project of the Latin American countries to integrate a telecommunications system independent of [present] connecting centers -- New York and Buenos Aires. It is the most efficient means for the countries of the [South American] continent to get to know and understand each other . . . [they] are just now becoming aware that their . . . cooperation is essential in order to become a political and economic force. The RIT is essential to facilitate economic exchanges . . ."

Colombia, Memoria del Ministerio de Comunicaciones al Congreso. [Memorandum to Congress from the Ministry of Communications]. Colombia, 1970, p. 38. (English version by S. Ospina).

See M. Anderson, Information Technology and Data Services in Ecuador. Document prepared for the United Nations Centre on Transnational Corporations. New York, 1985. (mimeograph copy).

19 The heated debate on direct distribution broadcasting by satellite (DBS) is a good example. On December 10, 1982 at its 100th Plenary Session, the United Nations General Assembly adopted a Resolution on the "Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting" which call for the prior consent of the government of the receiving country. See Annals of Air and Space Law (1983), 8:533-538, for full text of the Resolution and of the Principles. See Broadcasting, November 29, 1982, pp. 30, 31, for one view of the effect of the adoption of these principles. For other views on DBS and prior consent, see "International Broadcast Regulation: The North-South Debate," American Society of International Law (April 1980), 74:298-321; Syracuse Journal of International Law and Commerce (Summer 1981), 8:2.

20 See El Tiempo, Bogota, Colombia, April 2, 1987, p.8A; April 13, 1987, p.6B.

21 Ibid.

22 On the subject of the illegal reception of satellite signals see S. Ospina, "Piracy of Satellite-Transmitted Copyright Material in the Americas: Bane or Boon?", in Tracing New Orbits: Cooperation and Competition in Global Satellite Development. Donna E. Demac, Editor. New York, Columbia University Press (1986).

23 See, supra, Chapter 2, note 12.

24 See, supra, Chapter 3, note 12.

25 See, supra, Chapter 3, note 1.

26 See, supra, Chapter 4, note 3.

27 Steward, S. International Copyright and Neighboring Rights. London, Butterworth (1983), pp. 534-535. (Comprehensive discussion of Latin American copyright legislation, by H. Jessen, is provided in Stewart's book, pp. 533-567). [Cited as Stewart hereinafter].

28 Arcadio Plazas, Estudios Sobre Derecho de Autor: Reforma Legal Colombiana. Bogota, Editorial Témis (1984), pp. 214, 221.

29 For complete text of the Berne Convention for the Protection of Literary and Artistic Works (Paris Act, 24 July 1971), see Stewart, supra, note 27, pp. 643-666.

30 Stewart, supra, note 27, p. 132.

31 Ibid., pp. 172-173. The text of the Universal Copyright Convention as revised at Paris on 24 July 1971 may be found in Stewart, pp. 667-678.

32 Stewart, supra, note 27, p.205.

33 Rome Convention 1961, Article 3(f). The full text may be found in Stewart, pp. 679-686.

34 Ibid., Article 13(a,(b)(c),(d), p. 681-682.

35 Ibid; p.238.

36 Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite (Brussels, 21 May 1974). Stewart, supra, note 27, pp. 691-696.

37 Arcadio Plazas, Estudios Sobre Derecho de Autor: Reforma Legal Colombiana. Bogota, Editorial Témis (1984), pp. 203,207.

38 Ibid., pp. 203, 204.

39 Ibid., p. 207. The author includes a Table with country and date of its ratification of the several conventions.

It is of interest to note that the 1970 Andrés Bello Convention for the Educational Scientific and Cultural Integration of the Andean Region (supra, Chapter 3, note 12) makes no mention of copyright protection or payment of royalties.

40 Stewart, supra, note 27, pp.164-172.

41 Ibid., pp. 285-286.

42 Ibid., p.160. These special provisions are found in Art. V bis-Article V quater UCC, and Art. I - Art. VI of Appendix, Berne Convention.

43 Ibid., p. 279.

44 See for example the "Caribbean Basin Economic Recovery Act", U.S. Public Law 98-67, August 5, 1983, 97 Stat. 384, Section 212(b)(5),(c)(10). Under the terms of this Act, a country's eligibility for economic assistance from the USA was conditioned on its agreeing to broadcast copyrighted materials only with the express consent of the copyright holder. This condition was aimed at discouraging the broadcast of illegally obtained materials.

45 Stewart, <u>supra</u>, note 27, p. 257.

46 <u>See</u>, Chapter 3, <u>supra</u>, note 12.

CHAPTER SIX

THE UNITED NATIONS TREATIES ON OUTER SPACE

The United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) was established in 1959 soon after the launchings of the first satellites by the USSR and the USA. It comprises two sub-committees: the Legal and the Scientific and Technical. Currently 53 countries are members of this specialized Committee, including Colombia, Ecuador and Venezuela.[1]

COPUOS' main purpose is "to study the nature of legal problems which may arise from the exploration of outer space . . .", to review outer space programs "which could be appropriately undertaken under United Nations auspices. . ."[2]

Since its inception, COPUOS has worked at establishing an international legal regime, setting norms of conduct to regulate the exploration and peaceful use of outer space. Its efforts have brought forth five treaties on outer space, four of which are in force:

- The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, [the Outer Space Treaty], which entered into force on 10 October 1967.

- The Agreement on the Rescue of Astronauts, the Return of Astronauts and Return of Objects Launched into Outer Space [the Rescue Treaty]; entered into force December 3, 1963.

- The Convention on International Liability for Damage Caused by Space Objects, [the Liability Convention]; entered into force September 1, 1972.

- The Convention on Registration of Objects Launched into Outer Space; entered into force 15 September 1976.

The Agreement governing the Activities of States on the Moon and Other Celestial Bodies [the Moon Treaty] was adopted in December 1979; entered into force 11 July 1984.[3]

Of principal interest and concern for the purposes of Project CONDOR's feasibility are the Outer Space Treaty and the Liability Convention; thus the following discussion will center on them. The other treaties will not be addressed.

A) THE OUTER SPACE TREATY

The Outer Space Treaty of 1967 has been the subject of numerous discussions, articles, meetings and scrutinized study. This discussion will be limited to the Articles deemed pertinent to Project CONDOR.

The Outer Space Treaty is based on, and incorporates, several Resolutions that were adopted by the United Nations General Assembly in 1963 (Resolution 1962 (XVIII) and Resolution 1884 (XVIII).[4]

Article I, in pertinent part, states:

> The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.
>
> Outer Space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies. . .[5]

Articles II states that "[O]uter space, including the moon and other celestial bodies, <u>is not subject to national appropriation by claim of</u>

<u>sovereignty, by means of use or occupation, or by any other means.</u>[6] [Emphasis added].

The Principles of the Treaty apply to outer space activities of governments, international organizations and non-governmental entities. Ultimate responsibility and liability for activities of its nationals rests on the government signatory to the Treaty. (This same principle underlies all treaties - only the parties which have signed, ratified or acceded to it are bound by its terms). In regard to this treaty, often called the "Magna Carta" of Outer Space, Ecuador, Peru and Venezuela[7] are the only ANCOM countries which are bound by its provisions. Bolivia has not yet ratified it, for reasons unknown.

Colombia has not ratified it, for several reasons. In the first instance, because the Outer Space Treaty - which applies to "outer space" activities - does not define or delimit "outer space." This lack of definition (and resulting ambiguity of the meaning of "outer space")[8] is fundamental to the Equatorial countries claims of sovereign rights over segments of the geostationary orbit.

1) Outer Space, the Geostationary Orbit and Sovereignty Issues

In 1976, several years after the entering into force of the Outer Space Treaty, eight countries whose land mass falls on the Equator signed the Bogota Declaration.[9] These include Colombia and Ecuador. The Declaration is premised on the need to define "outer space", and consequently, to regulate the location of satellites in geostationary orbit. According to the Declaration, without a definition of outer space, the Outer Space Treaty cannot be invoked to affirm that the geostationary orbit is part of outer space. "National appropriation" of outer space, the Equatorial countries explained, had occurred by the space powers which, technologically, were the only ones capable of utilizing the orbit.[10]

The Equatorial countries deemed it essential to "state their determination to exercise their sovereignty over the corresponding segments of the geostationary orbit".[11] Coincidentally, the Colombian domestic satellite project SATCOL, began in 1976. The Colombian satellite would have been located at 72.5°W., in the "Colombian" segment of the geostationary orbit arc[12], over which these countries believe they have sovereign rights, pursuant to the United Nations Charter of Economic Rights and Duties of States (UNGA Res. No. 3281), which states that " . . . every State has and shall freely exercise full permanent sovereignty . . . over all its wealth, natural resources and economic activities."[13]

Claims of sovereignty over the geostationary orbit were based on the fact that

> . . . the synchronous geostationary orbit is a physical fact arising from the nature of our planet, because its existence depends exclusively on its relation to gravitational phenomena caused by the Earth, and for that reason it must not be considered part of outer space. Therefore, the segments of the synchronous geostationary orbit are an integral part of the territory over which the Equatorial States exercise their national sovereignty. The geostationary orbit is a scarce, natural resource whose importance and value is increasing rapidly with the development of space technology and with the growing need for communication; therefore, the Equatorial countries...have decided to proclaim and defend on behalf of their peoples the existence of their sovereignty over this natural resource. The geostationary orbit represents a unique facility which it alone can offer for telecommunication services and other uses requiring geostationary satellites.[14]

Furthermore, the Equatorial States maintain the the GSO is a <u>sui generis</u> phenomenon, dependent on the earth's magnetic field for its special attributes and characteristics, and therefore it is not part of outer space. Since the terms of the Outer Space Treaty -- that no appropriation of outer space by claim of sovereignty or otherwise -- are not applicable to the geostationary orbit, the Equatorial countries' claims, they believe, are not in violation of the Outer Space Treaty.

These claims have not been generally accepted by the developed countries, which consider the GSO to be part of outer space and not subject to claims of national sovereignty. Whether the geostationary orbit is considered to be in outer space or part of air space has yet to be scientifically determined. The criteria accepted by most countries is that air space "ends" between 90 to 110 kms above the earth's surface; space beyond the 110 kms is "outer space."[15]

COPUOS, through both the Legal and Scientific Technical Sub-Committees, has been trying to produce a definition and/or delimitation of air space from outer space that would be acceptable to all coutries, but has not succeeded yet. This issue is part of COPUOS' annual agenda.[16]

Whether the geostationary orbit, because of its "sui generis" nature should be subject to a legal regime of its own, as proposed by the Equatorial States, has also been debated for years. Further, the question of which international organization should be charged with the GSO's regulation has not been settled. Thus, at the 1985 World Administrative Radio Conference on the Use of the Geostationary Satellite Orbit and the Planning of Space Services Utilizing It (WARC-ORB-85), the International Telecommunication Union (ITU) stated that the WARC (and by extension the ITU) was not the competent body to deal with proposed principles to govern the GSO and referred the question back to COPUOS,[17] from whence it had gone to the ITU for resolution in the first place.

a) <u>Draft Principles Governing The Geostationary Orbit</u>

The United Nations General Assembly, in Resolution 38/80 of 15 December 1983 recommended that COPUOS' Legal Sub-Committee:

> "establish a working group to consider matters relating to the definition and delimitation of outer space and to the

> character and utilization of the [GSO], including the elaboration of general principles to govern the rational and equitable use of the geostationary orbit, a limited natural resource."[18]

The members of COPUOS' Legal Sub-Committee were invited to submit drafts of general principles governing the GSO, which was done by several delegations.

The Draft Principles presented by Colombia, Ecuador, Indonesia and Kenya in 1984 and 1987 reflect the change in the Equatorial countries' position which has occurred over the last few years. Whereas the Bogota Declaration spoke of the GSO as a natural resource under the sovereignty of the Equatorial States,[19] the 1984 Draft Principles state that "The Equatorial States shall have preferential rights to the segment of the geostationary orbit superjacent to the territory under their jurisdiction." [Emphasis added].[20]

That other countries continue to object to the claim to any kind of rights may be seen in Draft Principle IV presented by the German Democratic Republic. It reads: "The [GSO] as well as outer space as a whole, is not subject to national appropriation by claim of sovereignty, by means of use of occupation, or by any other means."[21] This principle incorporates language from Article II of the Outer Space Treaty, and applies it to the GSO which is defined as being part of outer space.

The Draft Principles presented in the working paper of Colombia, Ecuador, Indonesia and Kenya include several provisions: Principle II reiterates the principle that "the geostationary orbit is a limited natural resource which shall be preserved in the interests of all States, taking into account the needs of the developing countries and the rights [no qualifying adjective here] of the equatorial States. For that purpose it shall be governed by a specific legal regime."[22]

Draft Principle V states that

> "[t]he placement of a space object in the segment of the geostationary orbit superjacent to an equatorial State shall require prior authorization by that State. Transit for peaceful purposes of any space object through this segment shall be allowed."[23]

This Principle is likely to create a fair amount of controversy and resistance to adoption of the Draft presented by these four countries. In essence, a launching State or organization will be allowed freedom of passage through the "aerospace" of an equatorial State, but will not have the right to "park" its satellite in the orbital arc above the equatorial country. Presumably the countries that would give the authorization are Colombia, Ecuador, Indonesia and Kenya. (The other four States which signed the original Bogota Declaration do not seem to support the present Draft Principles).

The USA as well as several other countries have already stated that under no circumstances would they request any other country's "prior authorization" to "park" one of their satellites in geostationary orbit.[24]

Seeking another country's prior consent for an act that is considered purely national (the US satellite was intended for domestic use) is an infringement on that country's sovereignty, which no country will permit, let alone tolerate.

Since the United States and most other countries have never accepted the claims of the equatorial States -- whether to sovereign or just preferential rights -- they do not feel obliged to respect these claims.

The Colombians have noted on more than one occasion that "Pacta sunt servanda" -- agreements and stipulations of the parties to a contract must be observed.[25] However, neither the United States or any developed country is a party to, or has acquiesced in any way to the Bogota Declaration. Even some of the original signatories (Brazil for example) no longer seem to support these claims. Similarly and/or conversely, Colombia claims that since it has not ratified or acceded to the Outer Space Treaty, it is not bound by it. Furthermore, as that treaty contains no definition of outer space or determination thereof, Colombia's initial claims to sovereignty over the GSO in no way contravene the Outer Space Treaty.[26]

It should be recalled that the Outer Space Treaty incorporated UNGA Resolution 1962(XVIII) of 1963, the "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space," which states that outer space is not subject to claims of sovereignty. While the UN General Assembly's Resolutions are considered as being only recommendations that are not legally enforceable, nevertheless it has been stated and accepted that they are evidence of customary international law. The principles incorporated into such Resolutions oblige the entire international community to respect them.[27] Once resolutions are codified they also codify customary international law and they are legally binding.[28] Thus treaties, including the Outer Space Treaty, which are law-making, become a source of international law.[29]

Unless the equatorial States took reservations to the UNGA Resolution in 1963, they are bound by that Resolution, and its subsequent codification into the Outer Space Treaty, even if they have not ratified the Treaty.[30] Even though the equatorial States correctly state that the Treaty does not contain a definition of its subject matter -- outer space -- it cannot be concluded that the geostationary orbit is a national resource, subject to sovereign or preferential rights of a group of countries.

The heart of the controversy over the geostationary orbit is whether it is part of "outer" space, which to this day remains undefined.

The "equatorials" stated in 1976:

> "There is no valid or satisfactory definition of outer space which may be advanced to support the argument that the geostationary orbit is included in the outer space . . .

> Therefore, it is imperative to elaborate a juridical definition of outer space without which the implementation of the Treaty of 1967 is only a way to give recognition to the presence of the States that are already using the geostationary orbit."[31] [Emphasis added].

The Draft Principles presented by the Equatorial States do not answer this imperative need. Rather, they circumvent the issue by merely stating that the GSO is a limited natural resource, that it shall be used exclusively for peaceful purposes and for the benefit of all mankind.[32] (The East German Draft, in contrast, clearly states in its Principle I: "For the purposes of these principles, "geostationary orbit" means that part of outer space where orbits of geostationary satellites lie.").[33] [Emphasis added].

The position of the equatorial States, as evidenced by their working paper on Draft Principles Governing the GSO, provides no solution to the definition problem, nor is it likely to win the support of other States. In this respect the "prior authorization" requirement found in Principle V is likely to be a major stumbling block for reasons mentioned before. No country should have to seek the authorization of another to place an instrument of communication in a space that is part of the province of mankind,[34] a common international resource which no single nation or group of nations can appropriate.[35]

Furthermore the issue at hand is the location of géostationary satellites used for communications (not for remote sensing or surveillance). Thus, "prior authorization" requirements could also be construed to mean the following: In order to improve its means of communication (over which every country has recognized sovereign rights), a State would have to receive prior authorization from an equatorial country if its satellite were to be located superjacent to the equatorial State. Such prior authorization would lead to interference of one State in the communications policies of another, in violation of existing international telecomunications treaties, customary practice, and customary international law.

Though the geostationary orbit may be a "limited natural resource", there are other methods of ensuring its efficient use than by requiring the authorization of a few countries. This sort of regulation of an international resource is not the prerogative of any country or group of countries. Admittedly, some of the "prime" orbital locations for North American (USA, Canadian), European and Soviet geostationary satellites happen to coincide with the territory of the subjacent equatorial countries. If prior authorization is required for only certain countries -- by a few other countries -- this kind of discriminatory practice is likely to lead to greater alienation of countries - including those that may have been previous adherents of a particular position.[36]

This would produce precisely the opposite effect than what is intended either by the Draft Principles governing the GSO, the words and spirit of the Outer Space Treaty, or the International Telecommunication Convention.

In regard to the ANCOM countries themselves, only two of them (Colombia and Ecuador), are "equatorial States." They are also two of the drafters of the Principles governing the GSO under discussion. Colombia, as was noted above, is not a signatory to the Outer Space Treaty, and apparently does not consider itself bound by it; but it is still bound by the UNGA Resolutions which the Outer Space Treaty incorporated.

Ecuador, however, ratified the Treaty in 1970, the same year that Venezuela ratified it. Peru ratified it in 1979.[37] Ecuador is thus in the anomalous position of having ratified a treaty that does not allow for claims of sovereignty, while supporting the Bogota Declaration and principles that will safeguard its "preferential rights" to a segment of outer space. Even if it has denounced the Outer Space Treaty by deed or word, it is still bound by the UNGA Resolutions accepted prior to and contained in the 1967 Treaty.

Hence, Colombia's and Ecuador's position regarding preferential rights to the GSO puts these countries at odds with the other ANCOM/ASETA countries. Like Colombia and Ecuador, Peru and Venezuela are members of COPUOS; but they are not "equatorials" nor do they seem to support the 1987 Draft Principles that set forth "equatorials'" position.[38] Bolivia is neither a member of COPUOS, nor has it ratified the Outer Space Treaty, so that its participation in the polemic over the GSO and "outer space" has to take place in a forum other than COPUOS.

In essence this leaves Colombia as the champion for the Latin American equatorial countries' cause, the one equatorial country of the Andean region which has maintained for over ten years that it (and similarly situated countries) have what are now called "preferential rights" to the GSO. It was also the first to proclaim sovereign rights over that limited natural resource.

Assuming, arguendo, that the Draft Principles Governing the GSO are adopted as set forth in the equatorial States' working paper,[39] will Colombia and Ecuador require the other ANCOM countries, their partners in ASETA and in Project CONDOR, to seek their prior authorization in order to participate in the CONDOR Project? After all, the three CONDOR satellites, notified to the IFRB in July 1985 (for launch in 1990) will be situated at 72°W, 77.5°W, and 89°W respectively.[40]

The one at 72°W would be located superjacent to Colombian territory; the one at 77.5°W over Ecuador. The third one at 89°W would be near the Galapagos Islands (claimed by Ecuador), but over the Pacific

Ocean, over the high seas which are considered the "common heritage of mankind."[41] Thus, this third satellite might not require any ASETA country's authorization prior to its being placed in geostationary orbit. It is conceivable, however, that prior authorization could be required for Bolivia's, Peru's and Venezuela's "share" in the satellites located superjacent to the Equatorial countries.

Colombia and Ecuador may argue that the other three ANCOM/ASETA countries would not be required to seek prior authorization, since they are participants in the satellite project, and more importantly, because under Draft Principle II, "[the] equatorial States shall preserve the corresponding segments of the [GSO] superjacent to their territories for the opportune and appropriate utilization of the orbit by all States, <u>particularly the developing countries</u>." [Emphasis added].[42] Peru, Venezuela and Bolivia fall into the category of developing countries, so presumably Colombia's and Ecuador's segments would or could be "appropriately utilized" by them. That would be one way of resolving potential conflicts between the ASETA countries.

Even in the unlikely event that the Draft Principles would be accepted as written ~~(a process~~ that might take more than the 20 years it has taken COPUOS to define "outer space"), they are not a solution to the real and immediate problem: the lack of a unified, legally tenable position regarding the provisions of the Outer Space Treaty. Furthermore, the Draft Principles do not provide definitions of outer space or the GSO, so that they do not resolve the problems underlying the controversy. In addition, the Colombian and Ecuadorean position puts them at odds with the other ANCOM countries vis a vis existing regional agreements. It appears to be in contradiction with the word and spirit of both the Cartagena Agreement[43] and the ASETA Statutes.[44] Both call for the member countries to adopt a common position which will lead to their integration, and aid them in their negotiations with the broader community.

ASETA's mandate in particular calls for its members to adopt a unified, common position in international fora and meetings. ASETA as an organization may represent the interests of its members in negotiations and agreements,[45] but this does not mean that one or two ASETA countries necessarily represent the association. Certainly at COPUOS, Colombia and Ecuador are acting as representatives of their governments, not as spokespersons for a subregional association of telecommunications entitites that is not accredited to the United Nations. ASETA members, it should be recalled, are urged to uphold its rules and regulations so long as they do not conflict with national laws.[46] In the present instance, however, national policies of two of its members in the international fora may work to the detriment of ASETA's interests or at least against the non-"equatorial" ASETA countries.

At least in respect to their position on the status of the geostationary orbit, and the implications of this position vis a vis the Outer Space Treaty, the ASETA countries need to clarify their association's objectives. If they consent or acquiesce to two countries speaking for all five, the delegation of authority should be incorporated into the Association's Statutes and By-laws, and/or

ASETA should seek Observer status at COPUOS. Furthermore, ASETA should clarify whether by launching the CONDOR satellite it seeks to vindicate the position of Colombia and Ecuador regarding their "preferential rights" over certain orbital arcs.

It was noted earlier that Colombia's project for a domestic satellite, SATCOL, began at about the same time that the Bogota Declaration was issued in 1976.[47] A subsequent agreement signed by the governments of Colombia and Ecuador reiterated their ". . . sovereign rights over the geostationary orbit which belongs to them, [emphasis added] and their decision to cooperate with the other equatorial countries to defend these rights in the international sphere".[48]

Even if the claims of the "equatorials" are now for merely preferential rights, they still exclude the other three ASETA countries. All five members need to determine the political objective of their satellite: whether it will be a bi-national one, with "preferential rights" for Colombia and Ecuador; or whether it is going to be a truly regional one, regardless of the policies of two of its members. In the latter case, the interests of the five members should take precedence over those of the two "equatorial" states.

Their decision has implications not only in regard to the continuing polemic on the geostationary orbit and the equatorials' position in international fora, but also in regard to other real factors, such as each country's investment share in the space segment.[49] If one or two countries "own" the majority of the satellite by virtue of their investment in it, is there any agreement or guarantee to prevent them from exercising other "preferential rights" over the satellite (the transponders or the control station) at a later time?

Further, will these countries also apportion responsibility and/or liability according to their investment share or "preferential" rights?

In this respect the provisions of the Liability Convention should be examined together with Articles VI and VII of the Outer Space Treaty.

B) THE LIABILITY CONVENTION

The Convention on International Liability for Damage Caused by Space Objects entered into force

September 1st, 1972; [Liability Convention hereinafter]. Its objective was to "elaborate effective international rules and procedures concerning liability for damage caused by space objects and to ensure . . . the prompt payment . . . of a full and equitable measure of compensation to victims of such damage."[50]

"Space object" includes "component parts of a space object as well as its launch vehicle and parts thereof."[51] Under the terms of Article II, a "launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight."[52] In the event that damage is caused elsewhere than on the earth's surface to a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible."[53]

The Outer Space Treaty also holds States Parties to the treaty internationally responsible for "national activities in outer space . . . whether such activities are carried on by governmental agencies or by non-governmental entities."[54]

Furthermore,

> [e]ach State Party to the Treaty that launches or procures the launching of an object into outer space . . . and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object or its component parts on the earth, in air or in outer space, including the moon and other celestial bodies."[55]

The scope of liability and/or responsibility under the Outer Space Treaty would seem to be limited to the States that are parties to the Treaty (since only States can be parties to treaties). Nevertheless, "when activities are carried on in outer space . . . by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by States Parties to the Treaty participating in such organizations."[56]

Thus, ASETA (or the future entity which will be responsible for the satellite of the ANCOM countries) will be responsible under the provisions of the Outer Space Treaty. Ecuador, Peru and Venezuela, all signatories to this Treaty, will also be responsible for compliance with its terms. But Bolivia and Colombia, though members of ASETA, are not parties to this Treaty. This raises the question of their responsibility under the Treaty, since its wording could be interpreted as placing responsibility on only the ASETA countries which are parties to it and on the organization as a whole. Although the two non-parties would not necessarily be free of liability, it might put them in an ackward position in regard to the potential liability the other ASETA members may incur. The arrangements made within ASETA may take care of these discrepancies, but they may make for difficult negotiations both within the organization, and with the entity which launches the CONDOR satellite.

Regarding the latter point, the Liability Convention provisions should be looked at. While the Outer Space Treaty speaks of responsibility and liability in general terms, the Liability Convention speaks of <u>absolute</u> liability for certain parties. The Liability Treaty, however, is broader in scope than the first treaty in most respects. Under the Outer Space Treaty liability may be incurred for "damage to national and juridical persons on earth, in air or in outer space . . ."[57]

The Liability Convention on the other hand, holds a launching State absolutely liable for damage caused only to "the surface of the earth or to aircraft in flight."[58] [Emphasis added]. This would seem to exclude damage caused to other craft elsewhere than on Earth. This raises the question regarding the word "Earth": does it include bodies of water, or is "earth" only land masses?[59] (If the Convention spoke of "the Earth", or "Earth" [with a capital "E"] obviously it would be referring to the entire planet. As it is written in the Convention, "earth" leads to ambiguity of meaning and scope of coverage. Further does "aircraft" include space planes or shuttles, which operate partly as aircraft but also as space craft?

The Liability Convention tells us its provision do not apply to nationals of the launching State who may be injured, nor to foreign nationals that are participating in the operation of the space object, from the time the space object is launched or at any stage thereafter.[60] A "launching State" is "one which launches or procures the launching of a space object" or "a State from whose territory or facility a space object is launched."[61]

What happens when an international organization (such as ASETA) procures a launch from another international organization (such as the European Space Agency (ESA)? Since only States can be parties to treaties, and nationals of launching States are not protected by this Convention, it would seem that liability would be limited to a few States.

At the time the Liability Convention was drafted in 1972, only States (the USA and USSR) were involved in launching. Times have changed, however; now international consortia (e.g., ARIANESPACE) are providing launches, and in a few years. private corporations will launch satellites and other space objects. (At least this is one goal of the United States).

Thus, even if the Convention imposes absolute liability on the launching State, the State can still avoid liability if it proves contributory negligence or an intentional tortious act on the part of the victim and so long as its activities were conducted in accordance with international law, including the Outer Space Treaty.[62]

Hence, it would seem that the Liability Convention will have little application to private launches on behalf of private parties, or international organizations.

In the case of the ANCOM/ASETA countries, an additional difficulty exists: only Ecuador has ratified the Liability Convention.[63] Thus only this country would incur or be exonerated from absolute liability as provided by this Convention.

On the one hand, since the launch of CONDOR would be procured by several states (the five members of ANCOM/ASETA), they could be liable under the provisions of Article V(i): "Whenever two or more States launch a space object, they shall be jointly and severally liable for any damage caused."[64]

On the other hand, whether these provisions would apply equally to States that have not ratified the Liability Convention or the Outer Space Treaty, is an open issue which would have to be resolved through diplomatic channels.[65]

Since this sort of litigation is lengthy and difficult,[66] prior to launching a satellite the ANCOM/ASETA countries should determine amongst themselves and with the entity providing the launch if they will be jointly and severally liable, if this liability will be absolute for all, or only for Ecuador, the only ANCOM signatory to the Liability Convention.

The fact that not all the ANCOM countries have ratified the Outer Space Treaty or the Liability Convention puts them on unequal footing amongst themselves and vis a vis the international community. Since space efforts such as satellite launches require the collaboration and participation of many international organizations and foreign States, agreement on certain principles is a fundamental requisite for their success.

At present this type of consensus is not apparent among the ANCOM cuntries, whether in regard to the Liability Convention or the Outer Space Treaty. The lack of agreement may protract negotiations with a launching entity, and further delay the implementation of Project CONDOR. It is submitted that these countries need to harmonize and unify their position internally (i.e. among themselves) as well as externally with the rest of the international community.

In this respect, a parallel exists between ratification of the Warsaw System, setting liability limits on airlines, and the Liability Convention.

One of the major stumbling blocks encountered in establishing a regional airline (as the Latin American Civil Aviation Commission (LACAC) has been advocating for a number of years)[67] is that not all its members are adherents of the Warsaw System. Some countries are exposed to higher liabilty limits as a result of their non-ratification of the Warsaw Convention.

One difference between the Liability Convention and the Warsaw System, however, is that the latter clearly establishes monetary limits to, as well as the monetary unit of liability (gold francs and/or Special Drawing Rights).[68] The Warsaw System also sets forth the time period in which an action for damages may be brought (two years)[69] as well as the venue for such actions.[70] By contrast, under the Liability Convention settlement of claims will be accomplished through diplomatic channels. These work slowly, and the plaintiff (the State in this instance) may not always get full compensation for its damage.[71] The clarity of the Warsaw System is unavailable to the Liability Convention. And unfortunately it does not apply to spacecraft.

The basic issue remains that only Ecuador has agreed to be bound by the provisions of the Liability Convention. Just as non-adherence to the Warsaw System has inhibited the establishment of a regional airline, it is possible, if not likely, that the lack of adherence to the Liability Convention will further complicate ASETA's negotiations for the regional satellite and launch vehicle.

In this respect, ASETA should keep in mind the present cost of insuring space objects (satellites), and whether such insurance would cover liability for damage incurred in case of the spacecraft's malfunction. (The Outer Space Treaty states that each launching Party, and "each State Party from whose territory or facility an object is launched is internationally liable for damage to another State Party to the Treaty or its natural or juridical persons by such objects or its component parts on the earth, in air or in outer space. . ."). [72] It is doubtful, however, whether any insurance policy would cover damage to all these areas, especially when damage would be difficult to ascertain. This is not to say that the Liability Convention would exonerate or indemnify particular countries. But its ratification by Bolivia, Colombia, Peru and Venezuela would provide some protection to them or at least to other countries in the event of a mishap with the CONDOR satellite.

Some insurance companies require that parties to a launch have ratified the Liability Convention. One of them elaborated on this requirement: If the launch is on behalf of a consortium (of countries or organizations), it is sufficient for the president of the consortium to sign the insurance policy on behalf of the consortium. However, the members of the consortium must be in agreement as to their insurance coverage. If there are differences in investment shares, the insurance coverage afforded to the individual member may be based on its financial participation.[73] (For example, if Colombia and Venezuela each hold 28% of the investment share in CONDOR, they would be covered up to 28% for their loss). In this respect the actual practice of the insurance companies may differ from what is stipulated in the Liability Convention --

that each State party to a launch shall be jointly and severally liable[74] and the burden of compensation shall be apportioned between the States to the extent of their liability (or fault).[75]

Similarly, whether USA or European launch vehicles are used, the governments of these launch agencies require liability insurance of their customer since under the Liability Convention, both the launching States and the State which procures the launch are liable.[76] It is logical, therefore, for the launching State to want to limit its liability. The burden is then on the States procuring the launch to decide how much risk they want to assume, since in most instances government launches are "self-insured."

Thus, when the ASETA countries seek to launch their satellite, their ratification of the Liability Convention prior to procuring the launch will facilitate their negotiations.

In order to fully comply with the terms of the Liability Convention, it would also be helpful if all these countries had ratified the Outer Space Treaty as well. This last suggestion may be wishful thinking, especially in view of the equatorial countries' position in regard to the geostationary orbit.

C) **HAS THE TIME COME TO REVISIT THE OUTER SPACE TREATY AND THE LIABILITY CONVENTION?**

Even though the Outer Space Treaty has been seen as just an accommodation between the USA and the USSR[77], it has been ratified and accepted by over 70 countries,[78] among them many developing countries (Brazil, China, India, the budding space powers).

Whether one agrees with or takes issue with the equatorial States' claims of preferential rights over segments of the geostationary orbit, it is submitted that they are correct in their demand for a definition of outer space. There is a need for a determination of air from outer space, but for different reasons than those stated by the "equatorials", or those reasons given by developed countries not to establish such a boundary.

One reason for the need is based on technological changes that have occurred since the Outer Space Treaty and Liability Convention were adopted. At that time, the USA and the USSR were, in essence, the two space powers. Twenty years later they face competition from the Europeans, the Japanese and the Chinese. Even the Brazilians and Indians have incipient space programs. Thus, the number of countries engaged in outer space activities has increased considerably since the early days of space exploration. Since these countries do not all share the same resources or objectives in their race to space it will be increasingly difficult to ensure that "outer space" is used for peaceful purposes. (The growing militarization of outer space and the "Strategic Defense Initiative," a.k.a. "Star Wars" are but two examples. The issues raised by these activities have been addressed by other, better-versed authors and will not be discussed here).

The more countries that are involved in launches, in owning and/or operating satellites and/or other space objects -- unmanned space vehicles, manned "shuttles" and space stations -- clearly increases the risk of damage to or of collision of these objects and increases the number of potentially liable parties as well.

The growing number of risks is unlikely to lead to "carrying on activities in the exploration and use of outer space . . . in the interest of maintaining international peace and security and promoting international co-operation and understanding."[79] The Shuttle disaster of January 1986, and subsequent mislaunches of other rockets are but hints of what can be expected in the future. So far these mishaps have caused damage only to nationals (e.g. only USA satellites and persons were lost as a result of the Challenger's accident) or to international organizations (one of INTELSAT's satellites was lost on the Ariane in 1986). They have occurred within territorial boundaries of the launching State (i.e. within their "air space" and territorial waters). (The exception to this was the accident with COSMOS 954).[80]

With greater international competition and pressures to win over clients to a limited satellite launch market, the number of parties (states or organizations) involved in these activities also increases. So does the likelihood of an international mishap in the airspace (or outer space?) of a State.

The Chicago Convention states that "every State has complete and exclusive sovereignty over the airspace above its territory", which is defined as ". . . the land areas and territorial waters adjacent thereto under the sovereignty . . . of such State".[81]

There are some countries whose size ensure that a space object launched therefrom will not be near another country's sovereign air space, but this is not true for all launching states. (For instance, France's launch facilities at Kourou are quite close to the territorial waters - and land mass - of several South American countries).

What is needed therefore, is a definition or delimitation of air space from outer space, for the purposes of assigning liability to a State or ogranization, or exonerating it therefrom. Responsibility and liability - and the burden of proof required are different in air law and space law. The difference in liability limits will be crucial when the "space plane" takes off or in the event of another shuttle-like disaster involving nationals of different countries, where it may not be clear whether the accident occurred in air space or "outer space" or above which country's territory, and where the "nationality" of the aerospace craft may also be placed in doubt.

The Warsaw System[82] applies to

> "all international transportation of persons, baggage or goods performed by aircraft for hire."
>
> "International transportation" shall mean any transportation in which . . . the place of departure and the place of destination. . . are situated either within the territories of two High Contracting Parties or within the territory of a single High Contracting Party, if there is an agreed stopping place within a territory subject to the sovereignty, mandate or authority even though that power is not a party to this convention."[83]

These exact provisions are unlikely to apply to a "space plane" involved in an international incident or accident. Whether the provisions of the Liability Convention would be applicable would depend on whether the craft is defined as being an aircraft or a spacecraft. Would this definition be based on the object's function, as suggested by some authorities?[84]

The Liability Convention defines "space object" but in a circular fashion: ". . . parts of a space object as well as its launch vehicle and parts thereof." [85] One shortcoming of this definition is that nothing is really defined. It does not take into account "hybrid" objects such as the space plane or the shuttle which are both aircraft and spacecraft, depending on whether they are functioning as one or the other; their function depends in part on their altitude or location in "space."

A functional approach has been suggested, whereby "the rules and norms of aeronautical law . . . and of aerospace law . . . [would] be applied according to functional criteria, i.e. the type of activity being carried out."[86] This approach might offer a partial solution, if the type of activity could be further clarified, and thus provide a workable (and working definition) of "space object." One commentator would include as actionable the damages caused by direct broadcast and remote sensing satellites - based on their "function", but these concepts of "functionality" and resultant liability seem somewhat extreme. Certainly it would be difficult to establish a causal connection between the satellites' function and the damage caused.[87]

CONCLUSION

Even though the equatorial countries have been clamoring for a definition of "outer space" in relation to the geostationary orbit only, their request for clarification of what is meant by "outer space" is increasingly valid, at least insofar as other activities and objects in space are contemplated.

None of the existing treaties -- the Outer Space Treaty, the Liability Convention, the Chicago Convention, or the Warsaw System -- provides grounds for a satisfactory resolution to or definition of the question of what constitutes an "air" object, a "space object" or a hybrid of the two; or of what is "air space" as distinct from "outer space."

With the advances of space technology, and resultant expansion of space exploration as well as the new types of objects (space planes, stations, satellites) perhaps it is time to define "outer space", as well as to revise the 1972 Liability Convention (incorporating provisions similar to those of the Warsaw System) which will take into consideration technological innovations like the space station, and space plane.

Ultimately the space powers stand to benefit from a determination of "air" and "outer" space, since this delimitation, together with a new or revised Liability Convention, will clarify and set limits to their liability in a manner not possible under the terms of existing space treaties or air laws. Technological advances in space require that international law keep pace with this evolution. Alas, the law -- whether domestic or international -- is usually "behind the times," and in respect to outer space and telecommunications activities, this is particularly evident. International conventions and practices do evolve, and change through time as the activities of the International Telecommunication Union show us. Some of the issues related to the ITU, outer space and the use of the geostationary orbit and frequency spectrum will be addressed next.

1 Information provided by the U.N. Outer Space Affairs Division.

2 U.N.G.A. Resolution No. 1472(XIV), 1959, establishing COPUOS.

3 The United Nations Treaties on Outer Space United Nations, New York, (1984). (UN Publication Sales No. E.84.1.10). [All citations to these treaties are taken from this publication].

4 Preamble, Outer Space Treaty.

5 Outer Space Treaty, Article I.

6 Ibid., Article II.

7 The Outer Space Treaty entered into force for Ecuador in 1969; for Peru in 1979, and for Venezuela in 1970. United Nations, UNEP/GC/INFORMATION/11/ Rev.1 (May 1985).

8 The determination of air space from outer space has been problematic for years. The Chicago Convention on International Civil Aviation (1944) provides no guidance: Article 1 merely states that

> ". . . every State has complete and exclusive sovereignty over the airspace above its territory."

Nowhere is airspace defined or delimited in this convention. How high is "above" or far out is "outer" remains to be determined, since the Outer Space Treaty talks only of "outer" space.

9 The 1976 Declaration of Bogota was signed by Brazil, Colombia, Congo, Ecuador, Indonesia, Kenya, Uganda, Zaire. <u>See</u>, Chapter 3, <u>supra</u>, note 46, and <u>infra</u>, note 11.

10 Buitrago Lopez, Elker. Manual del Derecho de las Comunicaciones en Colombia. Bogota, EDICOLDA, (1980), pp.613-626. (Chapter on Geostationary Satellites). [English paraphrasing by S. Ospina].

11 Current Documents, 6 Journal of Space Law
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2:193-197. (1978) p. 194, No. 1. (Complete text in English of the Bogota Declaration).

12 Buitrago, supra, note 10, p. 618. (See Chapter 3, supra, on SATCOL).

13 Bogota Declaration, supra, note 11, No. 1, p.194.

14 6 Journal of Space Law 2: p. 193, No. 1.

15 See P. Arnopoulos, The International Politics of the Orbit Spectrum Issue, 1 Annals of Air and Space Law (AASL) (1982), pp. 216 ff. See S. Mishra & T. Pavlasek, On the Lack of Physical Bases for Defining a Boundary between Air Space and Outer Space, 7 AASL (1982), pp. 399-413. (The Proceedings on the Colloquia of the International Institute of Space Law contain many articles on the determination of outer space and legal status of the geostationary orbit).

16 UN COPUOS A/AC.105/385, p.9. The 1987 Report of the Legal Sub-Committee includes a section on the "Matters Relating to the Definition and Delimitation of Outer Space and to the Character and Utilization of the Geostationary Orbit, including Consideration of Ways and Means to Ensure the Rational and Equitable Use of the Geostationary Orbit without Prejudice to the Role of the [ITU]." More than 10 years after the objection to the lack of definition (raised in the Bogota Declaration) the COPUOS appears no closer to providing an ultimate definition.

17 Ibid., p. 54. The Report at p. 9 states that the "Sub-Committee, in connection with the question of the [GSO] took note of a letter dated October 16, 1985 from the Secretary-General of the [ITU] to the Secretary General of the [U.N.]." (A/AC.105/360).

18 UN. Doc. A/38/714, 13 Dec. 1983, para. 5(c), as quoted at footnote 18 of V. Kopal, The Geostationary Orbit: A Limited Natural Resource or a Precious Part of Outer Space?". Proceedings of the IISL, 1983.

19 The Bogota Declaration, No. 4, stated that a separate legal regime was imperative for the "sui generis" geostationary orbit. (<u>See</u> note 11, <u>supra</u>).

20 U.N. A/AC.105/360, p.45 (1987).

21 Ibid., p. 47, Draft Principle IV.

22 Ibid., p.45, Draft Principle I.

23 Ibid., p. 45, Draft Principle II.

24 At WARC-ORB 85 (5 September 1985 Plenary Meeting), Colombia denounced the USA for breach of Articles 11 and 13 of the ITU's Radio Regulations, claiming that the USA had not completed all the requisite procedures in order to locate an American satellite in geostationary orbit superjacent to the Colombian territory. The location of the US satellite will interfere with the future location (and coordination) of one of the CONDOR satellites. A rather heated debate ensued, during which the USA reaffirmed its sovereignty, and its right to launch and operate its satellites without seeking prior coordination with the proposed CONDOR satellite.

25 See <u>supra</u>, note 24, Colombian Delegation's document to that Plenary Meeting.

26 Buitrago, <u>supra</u>, note 10, pp. 613-614.

27 Roberto Puceiro Ripoll, El Actual Desarrollo del Derecho del Espacio Exterior. X Curso de Derecho Internacional, 1983 EJA Vol. 3, Secretariat General, Organization of American States, Washington D.C. (1983), pp. 85-133, at 88.

28 Space Activities and Emerging International Law. Nicolas M. Matte, Editor. Center for Research of Air and Space Law, McGill University, Montreal, Canada (1984), pp. 86-87.

29 Ibid; pp.88, 89.

30 Puceiro, <u>supra</u>, note 27, p. 88.

31 The Bogota Declaration, <u>supra</u>, note 11, No. 4.

32 COPUOS Report, supra, note 16, p. 45, Principle I, II.

33 Ibid., p.47, Principle I.

34 Outer Space Treaty, Article I.

35 R. d'Arge and A. Kneese, State Liability for International Environmental Degradation: An Economic Perspective. Natural Resources Journal, Vol. 20, July 1980, pp. 427-450.

36 Brazil's support is conspicuously absent. One of the original signatories of the Bogota Declaration, Brazil is now a "space" power, having launched its own satellite in 1985. At WARC- ORB '85, Brazil did not ally itself with either the "equatorial countries", or with the "Andean Countries." Likewise, it was not among the equatorial States that presented the Working Paper on Draft Principles to the COPUOS Legal Sub-Committee in 1987.

37 UNEP/GC/INFORMATION/11/Rev.1, Nairobi, May 1985. This Register shows the dates of entry into force of treaties, but it does not show if a Treaty has been denounced since its ratification.

38 UN COPUOS A/AC.105/385, 16 April 1987, pp. 43-55. (Included are the Draft Principles Governing the GSO of several delegations including Colombia, Ecuador, Indonesia and Kenya). Other countries are not precluded from presenting their positions, as may be seen by their Drafts included in this document.

39 Ibid; p.45, which makes reference to working paper A/AC.105/C.2/L.147 of 29 March 1984).

40 Circular No. 1679, IFRB, Special Section (Annex) No. AR/11/A/108 dated July 1985, p.3; No. AR/11/A/209, p.3; No. AR/11/A/210, p.3, (Advance Publication of Information in regard to a projected Satellite Network).

41 Customary international law holds that the high seas are not subject to any country's sovereignty.
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(See the 1985 United Nations Con~~ference~~vention on the Law of the Sea, which calls the high seas the "common heritage of mankind." [This law or treaty is not yet in force].

42 COPUOS, A/AC.105/385, p.45.

43 See Chapter 2, note 12.

44 See Chapter 4, supra, Chapter 2, of ASETA's Articles of Incorporation.

45 Ibid., Chapter II, Art. 1-6.

46 Ibid., Chapter III.

47 See Chapter 3, supra, note 46.

48 Buitrago, supra, note 10, at p. 619, quoting the February 1977 "Declaración de Putumayo", agreement between Colombia and Ecuador. [English translation by S. Ospina].

49 An article in El Tiempo, Bogota, Colombia, November 14, 1987, p. 8A, reported that the ASETA countries would be deciding the fate of Project CONDOR within the next few days, to which Colombia was likely to give it affirmative vote. The article gives each country's investment in the U.S. $209 million project as follows:

Colombia, Peru, Venezuela - 28% each;
Ecuador and Bolivia - 8% each.

According to this article, by the year 2000 the traffic [not investment share or return therefrom] will be:

Colombia	29.01%
Peru	27.01%
Venezuela	26.60%
Bolivia	9.50%

(Presumably Ecuador's traffic would amount to the remaining 7.88%).

50 Preamble, Liability Convention, United Nations Treaties on Outer Space, United Nations, (1984), supra, note 3, pp. 13-22.

51 Ibid., Art. I(d).

52 Ibid., Art. II.

53 Ibid., Art. III.

54 Outer Space Treaty, Art. VI.

55 Ibid., Art. VII.

56 Ibid., Art. VI.

57 Ibid., Art. VI.

58 Liability Convention, Art. II.

59 See S. Ospina, Outer Space: "Common Heritage" or "Common Junkyard" of Mankind? Colloquium of the International Institute of Space Law, Brighton, England, 1987, wherein this question is raised in regard to responsibility for environmental damage caused on the Earth and high seas by space activities.

60 Liability Convention, Art. VII.

61 Ibid.; Art. I(c)(i),(ii).

62 Ibid., Art VI(2). See Space Activities and Emerging International Law, N.M. Matte, Editor. Centre for Research of Air and Space Law, McGill University, Montreal, Canada, (1984), pp. 97-99, at 99.

The Outer Space Treaty and the Liability Convention are not entirely applicable to commercial launches by private parties. Hence, in 1984, the US Congress passed a law, the Commercial Space Launch Act. However, the private parties wishing to provide launch services have run into several stumbling blocks, one of the major ones being the liability to which they (and their clients) would be exposed. In 1987, Congress drafted the "Commercial Space Launch Act Amendment" (House Resolution 3765). One purpose of the amendment is to establish limits on third party liability, and to require the commercial launching party (the licensee) to obtain insurance and demonstrate that it is financially able to compensate claimants. The licensee would not be required to obtain insurance in excess of US

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(footnote continued from previous page) $100 million. This proposed ceiling would apply to non-economic damages (i.e., "emotional distress", a common law concept). Because the stakes involved are so large, it is unlikely that this bill will become law in the near future. However, its mere drafting is a recognition of the fact that liability issues relating to outer space (and its commercialization) must be dealt with and that their solution will be different when private, non-governmental entities are involved.

63 World Treaties in Force. Peter Rohn, Ed. ABC-Clio Publishers, Santa Barbara, California (1983).

64 Liability Convention, Art. VI(i).

65 Ibid; Art. VIII, IX.

66 The Canadian-USSR dispute over "Cosmos 954" took several years to resolve; the incident has been commented upon by several authors. See, Space Activities, supra, note 62, p. 101.

67 See Chapter 2, supra, on LACAC, notes 21, 32.

68 Warsaw Convention, Article 22; Montreal Additional Protocol to the Warsaw System, Article 22 amendment. IATA Legal Dept., 1981.

69 Ibid., Article 29.

70 Ibid., Article 28.

71 See supra, note 28, p. 101. Apparently the Canadians were unable to recover the full amount of their claimed damages.

72 Outer Space Treaty, Article VII.

73 Corroon and Black INSPACE, Washington, D.C., provided the author with this information.

74 Liability Convention, Article V(1).

75 Ibid., Art. IV(2).

76 Ibid; Art. 1(c)(i)(ii). Information supplied by Corroon and Black INSPACE.

77 N.M. Matte, Space Policy and Programmes Today and Tomorrow. Toronto, The Carswell Company Limited (1980), p.41.

78 UNEP Register, <u>supra</u>, note 7.

79 Outer Space Treaty, Article III.

80 <u>See</u> <u>supra</u>, notes 62, 66.

81 Convention on International Civil Aviation, (Chicago Convention) Articles 1, 2.

82 Warsaw System (Convention and Protocols), IATA, 1981, <u>supra</u>, note 68.

83 Warsaw Convention, Article 1(1),(2).

84 See N.M. Matte Aerospace Law: Telecommunications Satellites. Butterworths Canada (1982), pp. 10-12.

85 Liability Convention, Art. I.

86 Matte, <u>supra</u>, note 84, pp. 10-12. See also <u>supra</u>, note 74.

87 Puceiro, <u>supra</u>, note 27, pp. 102-107.

CHAPTER SEVEN

THE INTERNATIONAL TELECOMMUNICATION UNION AND PROJECT CONDOR

The International Telecommunication Union (ITU hereinafter) is one of the oldest international agencies. It became the ITU in 1932 as a result of the merger of the International Telegraph Union and the International Radiotelegraph Union, which were established in the nineteenth century.[1] The ITU is the specialized agency of the United Nations responsible for all aspects of telecommunications regulation (except for the content). It has defined telecommunication as

> "Any transmission, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems."[2]

The purposes of the ITU are, inter alia,

> "... to maintain international cooperation for the improvement and rational use of telecommunications of all kinds; . . . to offer technical assistance to developing countries; . . . to promote the development andmost efficient use . . . and usefulness of telecommunications services; . . . to harmonize the actions of nations in the attainment of those ends."[3]

To accomplish its mandate, the ITU allocates the radio frequency spectrum and registration of radio frequency assignments, to avoid harmful interference between radio stations of different countries, as well as to improve the use made of the radio frequency spectrum.[4] The ITU also makes resolutions, formulates recommendations and opinions, and establishes regulations in regard to telecommunication matters.[5]

The ITU consists of permanent organs and of periodic conferences. Among the permanent organs are the International Frequency Registration Board (IFRB), the International Radio Consultative Committee (CCIR) and the International Telegraph and Telephone Consultative Committee (CCITT). They issue technical recommendations and, where appropriate, undertake technical-economic studies.[6]

The IFRB effects the recording and registration of frequency assignments, as well as an orderly recording of the positions assigned by countries to geostationary satellites.[7]

It advises ITU members regarding the operation of radio channels, with a view to avoiding their harmful interference, and

> "with a view to the equitable, effective and economical use of the geostationary satellite orbit, taking

> into account the needs of Members requiring assistance, the specific needs of developing countries, as well as the special geographic situation of particular countries; ...."[8]

Any satellite system that is contemplated is "notified" to the IFRB,[9] which will then assist in the coordination of the radio frequencies and orbital location that it will utilize, to avoid harmful interference with existing or other future planned systems.

In addition to regulating telecommunications through its permanent organs, the ITU holds conferences wherein regulations, recommendations and the ITU Convention are adopted. The Plenipotentiary Conferences are the "supreme organ" of the ITU;[10] they determine policies for fulfilling the ITU's purposes and also revise the ITU Convention when necessary.[11]

The administrative radio conferences are of two kinds: the world (WARC) and regional ones (RARC), wherein specific telecommunication matters will be considered. The decisions, resolutions and recommendations of the WARCs and RARCs must be in conformity with the ITU's Convention.[12]

The vast majority of the ITU's work is of a technical nature, whether the work is carried out by the Consultative Committees or the Administrative Conferences. In the past twenty-five years many of the tasks of the ITU have included the provision of technical assistance to developing countries with the result that some administrations claim the ITU has been "politicized" because its newer members are quite vocal in this forum, stating their need -- or at least desire -- to more equitable access to the means of telecommunications, particularly satellite communications.[13]

In considering the issues brought up at the WARCs since 1971, the question of the geostationary orbit location and use of radio frequencies must be seen together. Satellites are useful only in so far as the radio frequencies on which they operate do not interfere with other frequencies. The assignment of radio frequencies and of orbital slots are closely interrelated and they "must be considered equally and simultaneously for the purpose of technical criteria as well as of regulation of all space radio communication services."[14]

Only the Administrative Radio Conferences concerned with fixed and/or broadcast satellite services will be discussed here.

A) <u>The First "Space WARCs"</u>

The first World Administrative Radio Conference (WARC) related to space communications was held in Geneva in 1963[15] -- just a few months after the first transatlantic television program was broadcast via satellite, and after the UNGA Resolution 1721 spoke of worldwide space communications. In 1971, a WARC for Space Telecommunications was convened, followed by a Plenipotentiary Conference in Spain, in 1973, during which the International Telecommunication Convention (ITC) of 1947 was revised and amended. A WARC on Broadcast Satellites (WARC-BS) was held in 1977, followed by a general WARC in 1979. The last two set the stage for two subsequent conferences: the Regional Administrative Radio Conference on Broadcast Satellites ("RARC-BS" for Region 2),[16] held in 1983. As a result of the 1979 WARC, the first session of "WARC-ORB" was convened in 1985.[17] The major changes brought about by these conferences will be discussed later.

It should be recalled that by the early 1970s, communications were being provided to the world via INTELSAT satellites,[18] and the USA had already begun to advocate its domestic "open skies" policy;[19] i.e., utilizing satellites to provide domestic broadcasting services. The United States also held the lead in the development of satellites and their related technology. It was also the major shareholder in INTELSAT, through its signatory, COMSAT.[20]

Once the INTELSAT Agreements became permanent or final treaties in 1973 many of the developing countries wanted to ensure that they would continue (if not begin) to benefit from the global communications network and from the promises held by satellite communications. Hence, at the Plenipotentiary Conference held in 1973 at Malaga-Torremolinos (Spain), the following article was included in the ITU's Convention:

> Rational Use of Radio Frequency Spectrum and of the Geostationary Satellite Orbit.
>
> 1) Members shall endeavour to limit the number of frequencies and the spectrum space used to the minimum essential to provide in a satisfactory manner the necessary services. To that end they shall endeavor to apply the latest technical advances as soon as possible.
>
> 2) In using frequency bands for space radio services Members shall bear in mind that radio frequencies and the geostationary satellite orbit are limited natural resources, that they must be used efficiently and economically so that countries

> or groups of countries may have equitable access to both in conformity with the provisions of the Radio Regulations according to their needs and the technical facilities at their disposal. [Emphasis added]."[21]

These provisions were the result of resolutions of the 1971 WARC, which stated that the GSO was a "limited natural resource," that should be used most efficiently.

Furthermore, in 1971 it had been resolved that registration [with the IFRB] should not provide any permanent priority; rather the registrants were to take all "practicable measures" to help other countries exploit space systems. Thus were sown the seeds for "equitable access" -- in contrast to "first come-first served" (with the presumption of permanent rights) -- to the geostationary satellite orbit and radio frequencies.[22]

By 1973, in addition to the existing INTELSAT satellites, plans were being made for domestic satellite systems by India, Indonesia, and Canada. Regional systems also in consideration included the educational television by satellite for Latin America.[23] All these potential satellite operators wanted to insure their accessibility to the limited natural resources of the GSO.

By the 1970s, aside from technological advances in communications by satellite, many new countries had become members of the ITU. They joined voices in calling for more equitable access to the GSO, at the same time attempting to alter the "first come-first served" method of allocating orbital slots and frequency bands, a practice that had been questioned in 1971.[24]

B) The 1977 Broadcast Satellite WARC

In 1977, a major change took place, when the WARC-BS[25] was called for the specific purpose of planning for a broadcast satellite service and for designating frequency assignments for this service for all three ITU Regions. The new broadcast satellite service had been defined at the 1971 WARC, when it was also resolved that this service be established as part of a comprehensive plan.[26] Orbital slots and frequency channels for Regions 1 and 3 were adopted but Region 2 presented more difficulties. A final plan for this Region was worked out at the Regional Administrative Radio Conference of 1983, and incorporated into the 1985 WARC.[27]

The 1977 WARC took the decision to preassign orbital positions for broadcasting satellite services, but not for other geostationary services, such as the fixed satellite services (FSS). This decision signalled the beginning of the ITU's fulfilling its mandate of coordinating the efficient allocation of orbital positions, and of a more equitable sharing (if not access to) the limited resources of the GSO. In undertaking this preassignment, the ITU stated that "existing or previously planned broadcasting satellite systems will not be necessarily taken into account in the establishment of a detailed plan for broadcasting satellite service in the 11.7-12.2 GHz band ...."[28]

The preassignment -- even though qualified and limited to BSS -- was a major step in the direction toward more equitable sharing of the outer space resources. It was clearly a move away from a posteriori assignments of frequencies and slots which favor the industrialized countries, the initiators of communications by satellite.

The ITU's a priori process of assignment grants every country future rights to use specific frequencies associated with specific orbital positions, whereas the a posteriori process grants nations with satellites already in orbit the right to require that any subsequent satellite system coordinate with them to avoid any harmful interference. This is viewed as an unfair practice by the developing countries (LDCs) as it is a more costly way of establishing any satellite communications system. The developed countries maintain that the *a priori* process is wasteful of the orbit spectrum resources in that it reserves orbital slots for countries that may never be able to use them. They naturally prefer the *a posteriori* process, as it ensures their continued use of the orbit spectrum on a first-come, first-served basis. As the ITU Convention regarding the first-come, first-served principle has not been totally repudiated, it remains to be seen how the more recent mandate to guarantee in practice the equitable access to the orbit spectrum will be implemented.[29]

1) Broadcast Satellite Service in Region 2

The 1977 WARC plan was adopted for the BSS services in Regions 1 and 3 that same year, but its adoption for Region 2 -- the Americas -- was postponed. However, it was agreed to assign a segment of the GSO to that Region's BSS. The postponement may have been due to the position adopted by Equational States in the Bogota Declaration of 1976,[30] claiming sovereign rights over segments of the GSO. The developed countries in Region 2 (the USA in particular) were also opposed to the preassignment of orbital slots for only one type of activity -- BSS. They maintained that preassignment precluded them from using them for other, not yet developed activities.[31]

Thus, both the industrialized and the LDCs questioned in 1977 whether preassignment of orbital positions for one service would lead to the efficient use of the limited GSO resources, particularly in regard to the use of the frequency bands by different services (FSS and others).

The dilemma was "solved" in 1979, when the 1977 proposal to segment the orbital arc was replaced by regulations to double the bandwidth available to Region 2, and to allow both FSS and BSS, in the whole geostationary orbital arc in Region 2 to be used by both types of satellites.[32] Eventually the Region 2 plan was worked out, accepted and incorporated into the 1985 WARC Resolutions. This brought all the broadcast satellite services for the three Regions into conformity with one another.[33]

The RARC resolutions, even though they are applicable to all three Regions, are limited in scope. They apply only to certain frequency bands (11.7-12.75 GHz) utilized by broadcasting satellite services.[34] However, for Region 2, the BSS plan applies only to 12.2-12.7 GHz frequencies. (The other frequency bands are assigned to fixed and mobile satellite systems).[35]

The plan is not quite as rigid as it may seem at first.

In this respect, the Revised Radio Regulations give the plan some flexibility:

> "In Region 2, in the 11.7-12.2 GHz, transponders on space stations in the fixed satellite service may be used additionally for transmissions in the broadcasting satellite service, provided that [the transmissions do not exceed certain technical criteria] ... With respect to the space services, this band shall be used principally for the fixed-satellite service."[36] [Emphasis added].

Another very pertinent modification to the Radio Regulations sets forth certain limitations:

> The use of the bands 11.7-12.2 GHz by the fixed-satellite service in Region 2 and 11.7-12.7 by the broadcasting-satellite service in Region 2 is limited to national and sub-regional systems. The use of the band 11.7-12.2 GHz by the fixed-satellite service in Region 2 is subject to previous agreements between the

> administrations concerned, and those wanting services, operating or planned ... which may be affected ... For the use of the band 12.2.-12.7 GHz by the [BSS] in Region 2, see Article 15.37 [Emphasis added.]

Article 15 speaks of Coordination, Notification and recording of Frequency Assignments, and states in pertinent part:

> "The provisions and associated Plans for the [BSS] in the frequency bands... 12.2-12.7 (in Region 2) ... shall apply to the assignments and use of frequencies by stations of the [BSS] in these bands and to the stations of other services to which these bands are allocated so far as their relationship to the [BSS] in these bands is concerned."[38]

In essence the BSS preassignment plan for Region 2 benefits those countries that already have broadcasting satellite services, and those that utilize the allocated higher frequency bands; namely, the developed countries in North America. The BSS services are best suited for television broadcasting, i.e., one way transmissions; they are less versatile than fixed satellite services, which can provide bi- or multidirectional flow of signals among earth stations.[39]

C) <u>FSS or BSS: Technical Considerations</u>

Administrations currently utilizing the lower (4-6 GHz) frequency bands, but contemplating the utilization of the higher bands (11/12-14 GHz) may face problems of coordination with the other existing systems operating in the higher frequencies.

If only FSS is contemplated in both the lower (4-6 GHz) and higher (11.7-12.75 GHz) bands, there is no breach of the ITU Radio Regulations, since FSS is authorized in those bands. While the ITU-RR do not authorize broadcasting service in the 4-6 GHz,[40] they do allow BSS and FSS in the Ku Band. Even though FSS do not usually operate in the BS service, the reverse is not true: broadcast satellites operate in the FSS as "broadcast distribution" (ostensibly to community reception centers), with both services sharing feeder links.[41]

Thus, if the ASETA countries were to use the 4-6 GHz (C Band) to broadcast television, they could claim to be using "broadcast distribution services," not broadcast satellite services [emphasis added]; thus they would not violate the Radio Regulations.

In order to use both the C and Ku Bands, however, they would have to purchase separate hardware: earth stations capable of transmitting and receiving in the FSS (although these are already in place), and in the BSS, since two feeder systems would be required. This might prove more expensive than anticipated, and perhaps unnecessary, since the BSS to date has not proved very successful.

As to the spacecraft itself, it could be a "hybrid" satellite, with different transponders utilizing the C and Ku Band frequencies. This configuration would be in accordance with Modification 836 incorporated into the revised Radio Regulations for Region 2.[42] Here again, the ASETA countries would face an additional expense, since they would have to have separate antennas or feeds for the different frequency bands. The added cost could be justified, perhaps, by having 4-6 GHz transmissions to rural areas (including the "broadcast distribution" in this band), and using the higher frequencies for high density (urban) areas.[43] The additional costs and benefits would have to be analyzed in depth prior to implementing a "hybrid" system, since it will be considerably more expensive than a satellite utilizing only the C Band. The technology for the 4-6 GHz band operations is cheaper, more reliable, and in most countries, already in place. (INTELSAT satellites providing services to the Latin American countries operate on the lower frequency band, and these countries have the requisite earth stations and feeder systems.)

Thus, prior to designing, let alone launching a "hybrid" satellite, it would be essential to know how many transponders would be using the FSS service, and in which frequency bands. If some transponders were to be set aside for sub-regional broadcasting (which is permissible under Mod. 839), their number, as well as their coverage ("footprint") should be determined prior to launching the satellite.

On the other hand, if broadcasting is intended only for national reception, perhaps spot beams would be a better alternative. This way, unintended broadcasts to neighboring countries would be kept at a minimum. In this regard, the ITU-Radio Regulations caution that

> "In devising the characteristics of a space station in the broadcasting satellite service, all technical means available shall be used to reduce to the maximum extent practicable, the radiation over the territory of other countries unless an agreement has been previously reached with such countries.[44]

The radiation or "footprint" of a satellite may be changed once the satellite is in orbit: both the shape of the spot beam and where it falls can be modified if the satellite has on-board switching equipment.

While changing the footprint is relatively simple, changing the frequencies once the satellite is launched is more difficult and expensive. The spacecraft would have to be equipped with hardware for two sets of frequencies, thus making it heavier as well as more expensive, and not an attractive alternative.[45]

In addition to higher costs associated with operating in the higher frequency bands (11-12/14 GHz), or in having a "hybrid" spacecraft, there are other factors which make the use of the Ku Band less attractive. Among these are other technical factors relating to the quality of the signal, which tends to deteriorate under certain conditions, such as rain (i.e., its "rain attenuation"). In this respect, the ITU has taken note

> "... of the fact that the developing countries, particularly those in tropical areas, require adequate knowledge of radio wave propagation in their territories ..." [which they themselves need to study], "... this being the best means of enabling them to acquire telecommunication techniques and to plan their systems effectively and in conformity with the special conditions in the tropical areas...."[46]

The above are some technical aspects -- with their concomitant economic and in the case of TV broadcasting, political implications -- which any country or group of countries planning to launch a new satellite system should keep in mind. The ANCOM countries can design their satellite so that it will be in accordance with the Revised Radio Regulations; they can use FSS transponders for broadcast distribution, for either individual or community reception, domestically as well as in the subregion.[47] (The latter assumes that the definition of a "subregion" envisioned in the 1985 WARC allotment plan encompasses a group of countries like those of the Andean Community.)[48]

In regard to regional broadcasting of television (regardless of whether it is "broadcast distribution" using the FSS 4-6 GHz, or the BSS 12.2-12.7 GHz), the ANCOM countries will encounter other problems related to programming. These relate to the origination of the transmission (which country or countries); the avoidance of unnecessary spillover (i.e., spot beam configuration), as well as issues related to its reception without prior consent or interference (technical or political), and the payment of copyright royalties. (The latter issues were addressed in a preceding chapter discussing the international copyright conventions, and will not be analyzed again here).

If after careful consideration of the benefits and drawbacks of utilizing the Ku Band, and/or of having a "hybrid" satellite, ASETA decides to utilize the higher frequencies, they will have to modify or amend the Advanced Publication made to the IFRB in 1985.[49] At that time they notified three spacecraft, all of which would operate in the 4-6 GHz fixed satellite service. Hence, the coordination procedures undertaken by the IFRB would have to take into account the CONDOR system's utilization of these other frequencies, and its compliance with the BSS plan for Region 2. The IFRB will also have to consider CONDOR's compliance with the allotment plan for the fixed satellite services. (This was the focus of WARC-ORB-85, and will be discussed <u>infra</u>.)

How well the BSS pre-assignment plan is working in the Americas is open to question. Because the costs associated with operating a satellite in the Ku Band are quite high, the allocation of the 12.2-12.7 GHz to broadcasting satellite services may indeed be a hollow victory for the countries in the southern part of Region 2. Other than USA satellites used for domestic communications, the majority, if not all the satellites in Region 2 utilize the lower frequencies. In the case of the North American satellites, the pre-assignment of certain frequency bands to the BSS does not prevent them from utilizing the bands for other services. As was noted earlier, this is allowed under the revised Radio Regulations (Mod. 836).[50]

It should be recalled that one of the purposes of the 1977 WARC-BS was to establish a plan whereby the efficient use of the radio frequency spectrum would be ensured, while also making access to these resources more equitable to all countries.

Since 1973 the developed countries have hotly contested the need for any kind of planning, while the developing countries have wanted to be assured of at least equitable access to the outer space resources. One commentator noted (in a different context) that when access to certain resources is limited to a few [countries] there is no incentive for their efficient utilization.[51]

This situation was -- and is -- reflected in the utilization of the GSO and the related frequency bands. Hence, by 1979, as a result of a series of factors (the 1977 WARC-BS; the realization by many countries that the GSO is a limited natural resource, as the Equatorial countries pointed out; the increased developing countries' membership in the ITU), the ITU's general WARC took on a different aspect, if not a different "flavor."

D) <u>The 1979 World Administration Radio Conference</u>

The WARC 1979 was convened for the purpose of "rearranging" the Radio Regulations, and to revise the contents thereof.[52] In addition to adopting the revised Radio Regulations, WARC 1979 also passed several important Resolutions. Resolution No. 2 concerned itself with the "Equitable Use, by all countries, with equal rights, of the Geostationary Satellite Orbit and of frequency bands for space radio communications services." It states, <u>inter alia</u>,

> ... considering
>
> that all countries have equal rights in the use of both the radio frequencies allocated to various space radio communication services and the geostationary satellite orbit for these services;

taking into account

that the radio frequency spectrum and the geostationary satellite orbit are limited natural resources and should be most effectively and economically used;

having in mind

that the use of the allocated frequency bands and fixed positions in the geostationary satellite orbit by individual countries or groups of countries can start at various dates depending on the requirements and readiness of technical facilities of countries;

resolves

1. that the registration with the IFRB of frequency assignments for space radio communication services and <u>their use should not provide any permanent priority for any individual country or groups of countries</u> and should not create an obstacle to the establishment of space systems by other countries [emphasis added];

2. that, accordingly, a country or a group of countries having registered with the IFRB frequencies for their space radio communication services should take all practicable measures to realize the possibility of the use of new space systems by other countries or groups of countries desiring; . . .53

Thus, at least in principle, it was resolved that use of the radio frequency spectrum did not give any country permanent rights or priority to those services. This resolution was a vindication of developing countries claims against the industrialized space powers. The LDCs argued that the GSO was being saturated, and that assignment of the radio frequencies resulted in their being quasi-permanent, contrary to the provisions of the ITU Conventions.[54]

The developed countries countered that "temporary" occupation of the GSO did not constitute its "appropriation," as alleged. On the contrary, the space powers argued that pre-assignment of the orbital slots (as decided during the 1977 WARC-BS) would constitute an "appropriation" of these resources, unless the pre-assignment were merely to reserve a safe margin for a satellite currently in use or planned for the near future.[55]

Since the pre-assignment of radio frequencies had been accepted -- at least for the broadcast satellite service -- it was natural to want to extend planning to the fixed satellite service as well. The FSS and particularly the 4-6 GHz band, are the most widely used globally; this service is also more "versatile" than the broadcast satellite service, as voice, video and data can be transmitted from point to point, or to several points.[56]

Hence, Resolution No. 3 of the WARC 1979 was adopted. It states in pertinent part:

> "... considering
>
> a) that the geostationary-satellite orbit and the radio frequency spectrum are limited natural resources and are utilized by space services;
>
> b) that there is a need for equitable access to, and efficient and economical use of, these resources by all countries as provided for in Article 33 of the International Telecommunication Convention (Malaga-Torremolinos, 1973) and Resolution 2;
>
> ...
>
> d) that there are growing requirements all over the world for orbital position and frequency assignments for the space services;
>
> e) that in the use of the geostationary-satellite orbit for space services, attention should be given to the relevant technical aspects concerning the special geographical situation of particular countries;
>
> resolves
>
> 1. that a world space administrative radio conference shall be convened not later than 1984 to guarantee in practice for all countries equitable access to the geostationary-satellite orbit and the frequency bands allocated to space services; ..."

> 2. that this conference shall be held in two sessions; ....[57]

The World Space Administrative Conference's first session was held in 1985, pursuant to the 1979 Resolution. In addition to "guarantee[ing] in practice for all countries equitable access to the geostationary satellite orbit and the frequency bands allocated to space services," the 1985 WARC was to "establish the principles, technical parameters and criteria for the planning, including those for orbit and frequency bands identified, taking into account the relevant technical aspects concerning the special geographical situation of particular countries ...."[58] [Emphasis added].

By 1979, the developing countries had become much more numerous at the ITU, and certainly more conscious of the benefits of space communications. They no longer wanted a guarantee in "principle"; they sought to guarantee in practice their equitable access to the GSO.

Similarly, the Equatorial countries' Declaration of 1976 had its effects: their "special geographic situation" was to be taken in account. Although these countries were less successful in having the Committee on the Peaceful Uses of Outer Space recognize their claims, over the years they rallied enough support from other countries to have the ITU at least refer to their "special geographic situation."

Some members felt that the 1979 WARC resolution applied only to the countries on the Equator, while others believed that this reference included polar and desert regions of the world as well because of their special geographic and climatic conditions.[59] (The outcome of the 1979 resolutions will be examined further on, in the discussion of the 1985 WARC-ORB.)

After 1979, the international telecommunications scene had changed considerably, what with more satellite systems in existence as well as in the planning. In addition, new technologies -- optic fiber cables, lasers, were looming as competition to space communications. The basic legally binding document of the ITU -- the Convention -- had to be updated to reflect these changes, social, political, and technological. Thus, a Plenipotentiary Conference was convened in 1982, to review the structure and function of the ITU, its power to influence future telecommunication developments and operations.[60]

E) The 1982 International <u>Telecommunication Convention</u>

The previous Plenipotentiary Conference had been held in 1973 at which time Article 33 of the Convention was adopted. It stated, <u>inter alia</u>, that the radio frequencies and geostationary satellite orbit were limited natural resources, to which countries were to have "equitable access to both ... in conformity with the provisions of the Radio Regulations <u>according to their needs</u> and the <u>technical facilities at their disposal</u>."[61] [Emphasis added].

In 1982, due to increased awareness of developing countries to the need for international telecommunications (and domestic ones) for their development the second part of Article 33 was amended to read:

> "2) ... so that countries or groups of countries may have equitable access to both [the radio frequencies and the geostationary satellite orbit], <u>taking into account the special needs of developing countries and the special geographic situation of particular countries</u>." [Emphasis added].[62]

The principal differences between these articles is that in the 1973 version "equitable access" made clear reference to the <u>Radio Regulations</u> and the <u>technical facilities</u> at the disposal of the less developed countries (LDCs). In the 1982 amendment, the reference to the Radio Regulations has been deleted, as well as the reference to the "technical facilities at these countries' disposal." Instead, "equitable access" now must take into account the special needs of the LDCs and the <u>special geographic situation of particular countries</u>. [Emphasis added].

This part of the 1979 WARC Resolution No. 3 has thus become legally binding on the countries that have ratified the 1982 Convention which entered into force in January 1984.

At first glance it seems that the Equatorial countries have more influence or power at the ITU than at the U.N. Committee on the Peaceful Uses of Outer Space. At least their demand for special recognition due to their geographic location has become part of an international treaty, whereas the COPUOS Resolutions are just that -- resolutions with little force of law (with some exceptions).[63]

Several factors may account for this difference: Voting at the ITU and at COPUOS are different. At the latter, decisions and resolutions are adopted by consensus, while at the ITU each member country has one vote. Secondly, COPUOS consists of only 55 members, whereas the ITU has over

160 members. Thus, while the "special geographic situation" of some countries may refer more specifically to the Equatorial countries, the ITU's interpretation of the phrase is broader. In fact, it is given such an ample reading that the claims of a few Equatorial countries pale compared to states with territory in arctic regions (Scandinavia, the Soviet Union, Canada, Alaska) or desertic areas (Northern Africa, Central Asia). Hence the special geographic situation which entitles states to special consideration may not necessarily apply only to the Equatorial countries, and thus their influence at the ITU may be less real than it may seem.

Thirdly, while at the United Nations groups of countries tend to align themselves according to their political proclivities (e.g., the Group of 77, etc.), this type of grouping is less evident at the ITU. There, the countries will put forth and adopt resolutions and recommendations based on their technical interests, and less so on their political bent. Their technical needs are based on technological factors; i.e., real factors.

These differences in cohesion or groupings were quite evident at the 1985 WARC. Brazil, one of the original supporters in principle of the Bogota

Declaration, but now the owner and operator of its own domestic satellite system no longer seems to endorse claims to either sovereignty or to preferential rights for the Equatorial states. Indonesia, also the owner of its own satellite and thus a member of the "space club" still supports these claims, at least at COPUOS, but less so at the ITU.[64]

Fourthly, there are many more developing countries which participate in the ITU than at COPUOS. Further, the ITU's mandate is clear -- to guarantee in practice for <u>all</u> countries equitable access to the geostationary orbit and the frequency bands allocated to space services.[65] Supporting the claims to preferential rights over parts of the GSO would produce inequities, and would possibly deny some countries the equitable access to these resources. In this respect, the 1979 Resolution No. 3 mandated the 1985 WARC to

> "... establish the principles, <u>technical parameters</u> and criteria for the planning, including those for orbit and frequency assignments of the space services ... taking into account the <u>relevant technical aspects</u> concerning the special geographic situation of particular countries; ..."[66] [Emphasis added.]

Clearly, it is the technical, not the political consideration that is to be taken into account.

This is what the delegates to WARC ORB '85 tried to accomplish in developing the planning methods for the fixed satellite service. Given the ITU's position as a forum for primarily technical discussions, it is not surprising that the Secretary General, on advice of the ITU's Legal Department, informed COPUOS that the ITU was not the appropriate forum, nor was it legally competent to do more than take notice of the claims of the Equatorial countries.[67]

F) The 1985 WARC ORB

During the summer of 1985, the first session of the "World Administrative Radio Conference on the Use of the Geostationary Satellite Orbit and the Planning of Space Services Utilizing It" (WARC-ORB) convened in Geneva. It followed from Resolution No. 3 of the 1979 WARC which

> "... invited the Administrative Council to take the necessary steps to convene a world space administrative radio conference with the essential objective to guarantee in practice, for all countries, equitable access to the geostationary satellite orbit and to the frequency bands allocated to the space services utilizing it ..."

WARC-ORB's mission was to guarantee in practice equitable access to the geostationary satellite orbit and the allocated frequency bands; this objective was to be accomplished by establishing planning principles, technical parameters and criteria for planning.[68] However, whatever planning principles and methods were to be devised would apply only to certain frequency bands utilized by or in the fixed satellite service (FSS). The planning method devised during WARC-ORB had to take into account the other services (broadcast satellite and mobile satellite) that share the same frequencies.

The Planning Committee adopted a dual planning method which it was hoped would assuage both developed and developing countries. The former were not convinced of the need for any kind of planning, since the status quo is to their benefit. The developing countries, however, have been increasingly concerned by the saturation of the geostationary satellite orbit, i.e., the growing number of satellites "parked" in the GSO, and utilizing the same frequency bands. The WARC-ORB represented, in some respects, the culmination of the developing countries' determination to participate more fully in the benefits of space telecommunications, on an equitable if not equal basis.

There are some similarities as well as differences between the results of WARC-ORB '85 and the

1977 WARC for the Broadcasting Satellite Services. Both WARCs restricted themselves to planning the utilization of particular frequency bands. The 1977 WARC dealt with the planning of the BSS in the 11.7-12.2 GHz for Regions 2 and 3; and to the 11.7-12.5 GHz in Region 1. (The 1983 RARC concerned itself with the planning of the 12.2-12.7 GHz for BSS, and for the associated feeder links in the 17.317.8 GHz frequency band in Region 2.69 As was noted earlier, the 11.7-12.2 GHz band may be used for FSS as well in Region 2).[70]

The 1985 WARC developed a dual planning method which, like the RARC Region 2 plan, is limited to national systems. However, although planning is limited to the 4/6 GHz, 11-12/14 GHz and 20/30 GHz bands used in the FSS, it is applicable worldwide -- it is not limited to any one of the three ITU Regions.

In order to add some "flexibility" to the FSS allotment planning, it was decided in 1985 that different planning methods for different regions, frequency bands or orbital arcs may be possible.

Like the 1977 BSS plan, the 1985 planning method would ensure the efficient and economical use of the GSO and the allocated frequency bands as well as some flexibility in their use.[71]

Certain frequencies will be subject to "improved procedures" which will be developed in the course of multi-lateral planning meetings. As stated in the planning principles, the planning method should remain flexible to meet unforeseen future requirements and technological developments.[72] (In 1977, one objection raised to the BSS plan was that it was too rigid to accommodate future technological developments and other activities).[73]

The WARC ORB planning principles reiterated

> "... the universally accepted principle that no administration or groups of administrations is entitled to permanent priority in the use of particular frequencies and GSO positions so as to foreclose their access to other administrations."[74]

This principle was first enunciated at the 1971 WARC, again at the 1973 Plenipotentiary Conference, and finally considered a "universally accepted principle." In other words, the old "first-come, first-served," a posteriori allocation procedures would have to cede to a priori planning. Considering that in the intervening years (1971-1985) few of the developing countries have actually become "space powers," they have demonstrated their power of persuasion, or at least the ability to have some of their concerns met.

The WARC-ORB '85 principles also incorporate another on-going concern of the LDCs which is now codified in the 1982 ITU Convention: the planning method should take into account the relevant technical aspects of the special geographic situation of particular countries.

How the dual planning method[75] (allotments and "improved procedures," depending on the frequency bands) will actually operate is open to question. This is supposed to be worked out during the Second Session of WARC-ORB, in 1988, based on the results of the "intersessional" activities of the ITU and member administrations.

There are several constraints to the dual planning method. For one, the budget allocated to intersessional activities is very limited.[76] Secondly, the frequency bands that come under the allotment plan are yet untried and unused "expansion bands," which were allocated to the FSS during the 1979 WARC. Furthermore, each administration has been allotted 800 MHz in the expansion bands: 30 MHz in 4-6 GHz band, and 500 MHz in the 11/12-14 GHz band.[77] (The other frequency bands are subject to the yet-to-be-determined "improved procedures.")

The allotment plan is limited to national systems providing domestic services, but adjacent administrations may combine part or all of their allotment to provide regional services.[78] Thus, while 800 MHz per administration may not seem like much (despite some industrialized countries claiming they would be wasted on most developing countries), it is still sufficient frequency spectrum to meet the demands of most countries. One difficulty exists, however: the expansion bands have not been utilized before, and the cost of doing so is unknown. Thus, the developing countries may well end up with sufficient frequencies which they will be unable to use because of the expense in doing so.

Thus, like with the BSS allocation of frequencies in the 11/12 GHz, the allotment of frequencies in the expansion bands may end up being a hollow and expensive victory for most of the developing countries.

In addition to allotting select radio frequencies in the FSS expansion bands, the allotment planning method devised during the First Session of WARC-ORB

> "... shall permit each administration to satisfy requirements for national services from at least one orbital position, within a predetermined arc ...."[79]

The size and position of the "predetermined arc" was to be studied during the intersession.[80] The results of the studies and recommendations will not be known until 1988, and thus cannot be analyzed here. However, allotting to each administration a position on the orbital arc does have implications in regard to the Equatorial countries' claims of "preferential rights" over the GSO segments superjacent to their territories. Secondly, the "prior authorization" which these countries have included in their Draft Principles Governing the GSO will certainly have to be reconsidered.[81]

It is entirely possible that the ITU will allot one or more administrations an orbital position in the segment of the GSO to which the Equatorial countries claim "preferential rights." The "grantee" administration may not necessarily be one of the "equatorials." For example, the ITU may decide that Canada, the USA, or one of the Caribbean countries should be allotted an orbital position in the segment of a Latin American "Equatorial State." From a technical viewpoint, this might be the orbital position which will make the most efficient and economic use of the GSO. Will the subjacent

"Equatorial State" then require the "grantee" administration to seek authorization prior to placing a satellite in "its" allotted orbital arc?

The Equatorial State could deny the "grantee" administration that right. Obviously, where two such conflicting determinations would be made, the ITU's decision would take precedence over that of the Equatorial state. If the Equatorial state granted its authorization, the need to have it would be superfluous, since the grantee administration would be following the ITU's mandate anyway. In either case, the "prior authorization" requirement on the part of the "Equatorials" would be meaningless.

Furthermore, such "prior authorization" would be an infringement on the ITU's jurisdiction. The ITU's decision would be based on technical considerations only -- and in accordance with its mandate:

> "to maintain and extend international cooperation between all [ITU members] for the improvement and rational use of telecommunications of all kinds...."[82]

The Equatorial state's decision, on the other hand, would be based on political grounds, with few, if any technical facts to support it.

In any event, ITU's predetermination of orbital positions (once these are decided upon) will take precedence over any other claim of right to pre-authorize the use of these orbital arcs. Otherwise, the whole planning method of the ITU would be an exercise in futility, as well as a contradiction of the WARC mandate to "guarantee in practice, for all countries, equitable access to the [GSO]."[83]

Furthermore, the "Equatorial" segments of the GSO may not be the optimal location for a satellite of the subjacent Equatorial state, because of the nature of satellite transmissions. Thus, allotting the "Equatorials" a slot in the orbital arc above their territories would not be making the most efficient and economic use of the space service resources.

It is not surprising, therefore, that at one of its Plenary Sessions the WARC decided it was beyond its jurisdiction and agenda to deal with "... some specific principles which were proposed ... in regard to the planning of space services." These were the "... demands made by Equatorial countries to have sovereignty/jurisdiction over the ... segments of the [GSO] superjacent to their territories...."

"The Conference declared itself not competent to deal with the subject of those principles."[84]

Dealing with, let along adopting the Equatorial states' principles would be opening the ITU door to the political demands of other countries. Although politics, and a country's self-interest do enter into the technical discussions of this organization the fact remains that the ITU is not a political arena. It is primarily a technical body that is there to ensure that the telecommunications requirements of all countries, and not those of just a few, are met.

CONCLUSION

Over the last sixteen years, the ITU members, especially those from developing countries, have brought about substantial changes in this organization's objectives and ways of achieving the "[improved] and more rational use of telecommunications."[85]

Of particular importance is the evolution from a "first-come, first-served" approach to the use of space services, to the adoption of "a priori" ways of allocating the resources -- by planning.

The 1977 WARC for Broadcast Satellite Service resulted in the planning for the use of the 11.75-12.75 GHz frequencies. Even though the BSS plan for Region 2 was delayed for a few years, it was finally incorporated into the 1985 WARC. Thus, there is now a worldwide plan, at least for the broadcast satellite service, with special provisions for Region 2. These include use of some bands for FSS, and the others for BSS, but only for national and subregional systems, and subject to previous agreement between the administrations which operate or plan to operate in these bands.[86] In reality these provisions affect only the North American countries which utilize the Ku Band since the Latin American countries operate only in the C Band (4-6 GHz).

ASETA has considered utilizing the Ku Band, but so far has not taken a decision on this. (Several factors which it needs to consider prior to its decision have been outlined earlier in this chapter).

The second major planning achievement of the ITU is the "dual planning approach" adopted by the First Session of WARC ORB in 1985. Under this method, 800 MHz and a predetermined orbital position will be allotted to each administration; other frequencies will be subject to "improved procedures."[87] Since the plan will be elaborated upon during the Second of WARC-ORB (scheduled for 1988), it is impossible to assess its viability at this time.

These plans are the outcome of resolutions adopted during several administrative conferences, and incorporated into the ITU's Convention. While the ITU's radio regulation (and many of the WARC resolutions) are merely recommendations without any legally binding force, they are observed, in the self-interest of each administration to avoid harmful interference in its communications. The ITU Convention, however, is an international treaty, legally binding on its signatories.

To date, the 1982 Convention has been ratified by Colombia, Peru and Venezuela. Ecuador signed it in 1982, but it is unknown whether it has ratified it. Bolivia did not sign the 1982 Convention although it ratified the 1973 Convention in 1978.

It would be helpful, therefore, to ensure that the ASETA members ratify the 1982 Convention. A common legal position will add credibility and weight to ASETA's dealing with the IFRB and the Consultative Committees. While the technical aspects of the "special geographic situation" of these countries must be taken into account, their geographic position does not necessarily grant any of them preferential rights. This would not be "equitable," and would be contrary to the ITU's Convention.

Prior to launching its satellites, ASETA should carefully analyze the technical recommendations and parameters set forth by the ITU. A cost-benefit analysis of the different services and associated frequency bands could help this organization decide whether to operate in the 4-6 GHz or in the 11/12-14 GHz band.

Technical considerations of a satellite system must be taken into account. However, the commercialization of the system is also an important factor; i.e., the economic viability of a dedicated satellite system should also be studied.

In this respect, the experience of INTELSAT-- and of its individual members -- in the commercial provision of satellite telecommunications in a changing environment is worth considering. The following section attempts to give an overview of INTELSAT, its new services and how these may benefit the ANCOM countries.

1 G. Codding and A. Rutkowski, The International Telecommunication Union in a Changing World. Artech House, Dedham, MA (1982).

2 International Telecommunication Union, Radio Regulations, Revised 1985. Geneva, 1985. Article I, Section 1.2. [Cited as ITURR hereinafter].

3 International Telecommunication Convention (Nairobi, 1982), Chapter 1, Article 4(a), (b), (c). [Cited as ITU Convention hereinafter].

4 Ibid., Article 4.2(a), (b).

5 Ibid., Article 4.2(g).

6 Ibid., Article 11(1), (2).

7 Ibid., Article 10(a).

8 Ibid., Article 10(4)(a), (b), (c).

9 ITU-RR, Article 12, No. 1.

10 ITU Convention, Article 5(1).

11 Ibid., Article 6.

12 Ibid., Article 7(1), (2).

13 Jean-Luc Renaud, The ITU and Development Assistance. Telecommunications Policy, June 1987, pp.179-192. See, in respect to growing demands of the LDCs, O. de St. Lager, The Third World and Space Law, 81 IISL 37, pp. 5761 (1981); Ruben Naslund, ITU Conference in Nairobi: Confrontation or Mutual Understanding? Telecommunications Policy, June 1983, pp. 100-110.

14 N.M. Matte, Aerospace Law: Telecommunications Satellites, Butterworth & Co. (Canada), Ltd., 1982, quoting S.K. Sarkar, p. 103.

15 Officially known as the Extraordinary Administrative Radio Conference for Space, Geneva 1963. <u>See</u> R.Jakhu, The Evolution of the ITU's Regulatory Regime Governing Space Radiocommunications Services and the

Geostationary Satellite Orbit, Annals of Air and Space Law, Vol. VIII, 1983, pp. 381-407, at p. 398.

16 The ITU has divided the world into three Regions: Region 1 includes Europe, the USSR and Africa; Region 2 encompasses the Americas; Region 3 includes Asia and Oceania.

17 WARC-ORB '85 is officially the "First Session of the World Administrative Radio Conference on the Use of the Geostationary Satellite Orbit and the Planning of Space Services Utilizing It." The Second Session of WARC-ORB is scheduled for 1988.

18 The "Interim" Agreements under which INTELSAT operated between 1964 to 1973 became permanent in 1973. (See Introduction, supra, footnote 4.)

19 Domestic Satellite Policy, 35 F.C.C.2d 844 (1972).

20 COMSAT continues to be the major shareholder in INTELSAT: in the early 1960s it held nearly 50% of the shares, while in 1986 it held 25%. See INTELSAT Report, 1986-1967, p. 42.

21 ITU Convention, Málaga-Torremolinos (1973), Art. 33.

22 M. Rothblatt, ITU Regulation of Satellite Communication, 18 Stan. J. Int'l. L., pp. 1-25 (Spr. 1982), at p. 8.

23 See, Introduction, supra, footnote 11, and chapter 3.

24 Rothblatt, supra, note 22, p. 8.

25 The World Administrative Radio Conference for the Broadcast Satellite Service, officially.

26 Rothblatt, supra, note 22, p. 9. Also see Jakhu, supra, note 15, p. 404.

27 WARC-ORB-85, Final Acts. Geneva, 1985, Appendix 30.

28 A. Gotlieb, The International Legal Regime of Outer Space and Transborder Data Flows, Collected

Course of The Hague Acad. of Int'l. Law, Part I, p. 234 (1981), at 244.

29 Ibid., pp. 243-244; see Rothblatt, supra, note 22, pp. 13-17.

30 See preceding chapters on the U.N. COPUOS, and also chapter 3 regarding the Bogota Declaration.

31 Rothblatt, supra, note 22, p. 11 at footnote 52.

32 Ibid., p. 13.

33 WARC-ORB-85, Final Acts, App. 30.

34 Ibid., Article 8.

35 Ibid., Article 8.

36 Ibid., Article 8, Modification 839.

37 Ibid., Mod. 839.

38 Ibid., Article 15.

39 Rothblatt, supra, note 22, p. 9 at footnote 39.

40 ITU-RR, chapter 3, Article 8.

41 Information provided by J. Dicks, INTELSAT, December 1987.

42 WARC-ORB-85, Final Acts, Appendix 30.

43 Information provided by J. Dicks, INTELSAT, Dec. 1987.

44 ITU-RR, Article 30, Section II, No. 3.

45 J. Dicks, Dec. 1987.

46 WARC 1979, Resolution 5-1(a), included in the ITU-RR 1982, revised 1985.

47 ITU-RR, Appendix 30-110, Annex 6, Section 8.

48 WARC-ORB-85, Addendum to Report to the Second Session of the Conference, Geneva 1985. Planning Principle 3.3.4.1. talks of "adjacent territories"

which should be allowed "to combine all or part of their allotments with the view to ensure a sub-regional service."

49 ASETA's Advanced Publication was submitted to the IFRB in July 1985 (No. AR11/A/208, 209, 210, annexed to IFRB Circular No. 1679), July 9, 1985.

50 WARC-ORB-85, Final Acts, App. 30.

51 d'Arge, R. and Kneese, A. State Liability for International Environmental Degradation: An Economic Perspective. Natural Resources Journal, Vol. 20, July 1980, pp. 427-450.

52 WARC-79, Final Acts.

53 Ibid., Res. No. 2.

54 See Gotlieb, supra, note 28.

55 Ibid., pp. 241-243.

56 See ITU-RR.

57 WARC-79, Resolution No. 3, "Relating to the Use of the [GSO] and to the Planning of Space Services Utilizing It."

58 WARC-79, Final Acts.

59 U.N. Doc. Supplement No. 20 (A/35/20), para. 43 (1980).

60 G. Codding: The ITU Plenipotentiary Conference. ("An IIC Briefing Paper"), International Institute of Communications, London, 1982.

61 ITU Convention, Malaga-Torremolinos, 1973, Art. 33.

62 ITU Convention, Nairobi, 1982, Art. 33(2).

63 The exceptions are those resolutions which have been incorporated into treaties: e.g., Res. 1962 (XVIII) and Res. 1884 (XVIII), included in the Outer Space Treaty of 1967.

64 *See* Draft Principles Governing the GSO, presented by Indonesia, Colombia, Ecuador and Kenya. U.N. COPUOS A/AC 105/385, 16 April 1987; and see discussion in chapter 6, *supra*. A "space club" member, by this author's definition, is a country which has its own satellite in outer space; among the developing countries Brazil, India, Indonesia and Mexico are such members.

65 WARC-79, Resolution No. 3.

66 Ibid., Resolution No. 3.2. Complete text of this resolution in N.M. Matte, Aerospace Law: Telecommunications Satellites. Butterworth (Canada), 1982, pp. 345-346.

67 U.N. COPUOS Report, A/AC.105/360 (1987), p. 54. *See* chapter 6, *supra*, pp. 6.10 and following.

68 Resolution No. 895 adopted by the ITU Administrative Council in 1983, as quoted in "Equity in Orbit: The 1985 ITU Space WARC" -- A Background Paper, International Institute of Communications, London, England, June 1985.

69 WARC-ORB-85, Final Acts, Article 1.

70 Ibid., Modification 839 to Article 8.

71 WARC-ORB-85, Addendum to Report to the Second Session, Document No. 324 (Rev. 1-E), chapter 3. [Cited as WARC-ORB-85 Addendum hereinafter].

72 Ibid., chapter 3 ("Planning").

73 Gotlieb, *supra*, note 28, p. 244.

74 WARC-ORB-85, Addendum, *supra*, note 71, para. 3.3.1-3.3.4.1.

75 ITU Convention, Article 33, incorporated into the planning method. *See* WARC-ORB-85 Addendum, *supra*, note 71, chapter 3.

76 WARC-ORB-85, Documents 346-E and 360-E; the ITU was allocated SF 900,000 or about U.S. $340,000 (1985 exchange rate) for its intersessional activities.

77 WARC-ORB-85, Addendum, supra, note 71, para. 3.3.1(a), (b), specify which bands are subject to the allotment plan, and which will be subject to the improved procedures.

78 Ibid., para. 3.3.4.1.

79 Ibid., para. 3.3.1(a).

80 Ibid., para. 3.3.4.5.

81 See chapter 6, supra, note 16 and accompanying text.

82 ITU Convention, Article 4(1)(a).

83 WARC 1979, Res. No. 3.

84 Letter from ITU Secretary General Butler to the U.N. Secretary General, p. 54, U.N. A/AC.105/385 (1987).

85 ITU Convention, Article 4.

86 WARC-ORB-85, Final Acts, Appendix 30, Mod. 839 to Art. 8.

87 WARC-ORB-85 Addendum, supra, note 71, chapter 3.

CHAPTER EIGHT

INTELSAT AND PROJECT CONDOR

The International Telecommunications Satellite Organization (INTELSAT) has been providing international satellite communications to the world since 1964. This organization was established as a result of the Communications Satellite Act of 1962, which called for the prompt availability of telecommunications services to provide global coverage, while giving care and attention to making efficient and economic use of the electromagnetic frequency spectrum.[1]

In 1963, an Interim Agreement was drafted for the operation of a global commercial communications satellite system. In 1973, the final INTELSAT Agreements entered into force,[2] following their ratification by a number of countries, including Colombia, Ecuador, Peru and Venezuela.[3] In 1987, INTELSAT membership included 114 countries, and over 160 users of the system.[4]

The primary objective of INTELSAT is to "provid[e] on a commercial basis, ... the space segment required for public international telecommunications services of high quality and reliability to be available on a non-discriminatory basis to all areas of the world."[5]

INTELSAT has met its objective with success; its membership has increased yearly, it has begun to offer new services to its members in order to keep abreast of the demand for new services, as well as to meet a changing global business and telecommunications environment. Already in the 1970s it began leasing transponders for domestic services, and in the 1980s INTELSAT began marketing international business services (IBS) as well as its INTELNET and VISTA services, the latter to areas with "thin routes," i.e., fewer users than the more heavily trafficked North Atlantic routes.[6]

INTELSAT's recent evolution has been criticized by some countries (both developed and less developed), as not being truly responsive to its members' needs, as leading to the subsidization of some services at the expense of others, or else as an opportunistic response to potential competition.[7]

The United States, which through its signatory COMSAT owns over 25% of INTELSAT's shares, has been one of the strongest critics of the organization it was so instrumental in establishing. These criticisms led to INTELSAT's offering new services, as well as to the establishment -- at least on paper-- of systems separate to INTELSAT, authorized by President Reagan in 1984.[8]

A) <u>INTELSAT-AUTHORIZED SEPARATE SYSTEMS</u>

Prior to the USA's authorization of separate systems in 1984, INTELSAT had coordinated with different administrations for the establishment of other satellite systems. Several of these were to be utilized for national or domestic telecommunications (the Indonesian "Palapa," the Indian SITE and INSAT services; more recently the Mexican and Brazilian satellites, both launched in 1985). One distinguishing feature of these satellite systems is that they are used for domestic telecommunications; they are owned and controlled by their respective governments. Palapa, however, leases transponders to some neighboring countries for their domestic needs. ~~Hence,~~ they are not causing "economic harm" to INTELSAT, as they are not providing competing services. Since these systems also operate in areas with relatively low traffic, in this respect they are no economic challenge to INTELSAT.[9]

Similarly, INTELSAT has coordinated regional satellite systems which so far have not caused any significant economic harm to this international organization in which they still participate. Thus EUTELSAT and ARABSAT both began to operate on a permanent basis in 1985.

These two regional systems are similar in that they both have twenty or more member countries, and provide telecommunications services within their respective geographic regions: Europe, in the case of EUTELSAT, and the Arab League countries in ARABSAT's case. The international (extra-regional) telecommunications of these systems are still provided by INTELSAT.

Similarly, the satellite proposed by the five countries of the Andean region would provide domestic and regional telecommunications. Like with the other two regional systems, the extra-regional communications would go through INTELSAT.

While EUTELSAT and ARABSAT each have twenty or more participants, the Andean satellite project is limited to five countries. Hence, their investment share (and economic viability of the system) would or will be quite different, since so few countries would be investing in it. The CONDOR satellite would also have to be technically and economically coordinated with INTELSAT in accordance with Article XIV(d) of the INTELSAT Agreement.

All these satellite systems have several factors in common, whether they are national or regional: presently they all have excess transponder capacity available. They have all required large investments on the part of their respective governments, who own and control them, and whether these investments have been amortized or recuperated is debatable.

Of course, as the regional systems (EUTELSAT and ARABSAT) have been operating for just two years, they may not see any return on their investment for another few years.

Similarly, the purely "national systems" have yet to show a profit, although the Palapa system probably shows fewer losses than the Indian, Mexican or Brazilian satellites. This may be due to the fact that the Indonesians lease their surplus capacity to other countries, whereas the Mexican and Brazilian satellites, intended for only domestic or national needs, do not have lessees for their surplus transponders.

The Andean countries -- Bolivia, Colombia, Ecuador, Peru and Venezuela -- should keep these factors in mind, particularly in the design of their satellite, as they will or may end up having surplus transponder capacity and no clients for it. ASETA should also take into account the return on its investment and how many years of service will be required before it shows any profit, however marginal.

Thus, even though these satellite systems operate separately from but with the approval of INTELSAT, the countries still utilize the international space segment for their international telecommunications.

With the exception of the CONDOR system (which is still under study), the regional and national satellite systems have been coordinated with the INTELSAT global network to avoid technical interference and significant economic harm. The coordination has been accomplished pursuant to Article XIV(d) of the INTELSAT Agreement, which states in pertinent part:

> (d) To the extent that any Party or Signatory or person within the jurisdiction of a Party intends individually or jointly to establish, acquire or utilize space segment facilities separate from the INTELSAT space segment facilities to meet its international public telecommunications services requirements, such Party or Signatory, prior to the establishment, acquisition or

> utilization of such facilities, shall furnish all relevant information to and shall consult with the Assembly of Parties, through the Board of Governors, to ensure technical compatibility of such facilities and their operation with the use of the radio frequency spectrum and orbital space by the existing or planned INTELSAT space segment and to avoid significant economic harm to the global system of INTELSAT. Upon such consultation, the Assembly of Parties, taking into account the advice of the Board of Governors, shall express, in the form of recommendations, its findings regarding the considerations set out in this paragraph, and further regarding the assurance that the provision or utilization of such facilities shall not prejudice the establishment of direct telecommunication links through the INTELSAT space segment among all the participants.[10]

The separate systems that the United States has authorized, as being in the "national interest"[11] may be distinguished from those authorized so far by INTELSAT -- EUTELSAT, ARABSAT, and Palapa -- in several respects. In the first instance, they would provide services which would be in direct competition with INTELSAT, particularly in the North Atlantic routes. Secondly, they are privately owned, and would operate for profit only. Whether they would provide any kind of public services is dubious. Thirdly, even though some of the separate systems have characterized themselves as "regional,"[12] they would, involve only private parties in the USA, and "correspondent" administrations across the Atlantic. They are not "regional" systems involving the administrations of adjacent countries, like EUTELSAT, ARABSAT and potentially the ANCOM countries.

The viability of separate systems has been questioned, particularly in regard to the economic benefit they would provide. The USA private parties would have to negotiate with foreign governmental telecommunication entities, usually monopolies, which are not keen on losing their economic control over this sector, and especially not to private corporations.

In any event, once the separate systems obtain a foreign "correspondent," they will have to coordinate their systems with INTELSAT. So far, they are still seeking the approval of the foreign administrations.

In addition to coordination under Article XIV(d) they would also have to seek approval under Article XIV(e) of the INTELSAT Agreement:

> (e) To the extent that any Party or Signatory or person within the jurisdiction of a party intends to establish, acquire or utilize space segment facilities separate from the INTELSAT space segment facilities to meet its specialized telecommunications services requirements, domestic or international, such Party or

> Signatory, prior to the establishment, acquisition or utilization of such facilities, shall furnish all relevant information to the Assembly of Parties, through the Board of Governors. The Assembly of Parties, taking into account the advice of the Board of Governors, shall express, in the form of recommendations, its findings regarding the technical compatibility of such facilities and their operation with the use of the frequency spectrum and orbital space by the existing or planned INTELSAT space segment.[13]

While Article XIV(d) speaks of separate space segments to meet <u>public international telecommunications services</u> requirements, Section (e) talks of <u>specialized telecommunications services</u>, requirements <u>domestic or international</u> [emphasis added].

"Public International Telecommunications" are

> "fixed or mobile telecommunications services which can be provided by satellite and which are available for use by the public, such as telephony, telegraphy, telex, facsimile, data transmission, transmission of radio and television programs between approved stations having access to the INTELSAT space segment for further transmission to the public, and leased circuits for any of these purposes; ...."[14]

"Specialized telecommunications services" means

> "telecommunications services which can be provided by satellite, other than those defined in paragraph (k) ... including but not limited to, radio navigation services, broadcasting satellite services for reception by

> the general public, space research services, meteorological services, and earth resources services; ....[15]

The separate systems aim to provide video services, and whatever other services their customers may demand. The benefits of competition, theoretically, will be reduced rates and services more responsive to customer needs.[16] At least this is the reasoning and policy of the U.S. government, as developed in the "White Paper" -- New International Satellite Systems -- which the Department of Commerce and Department of State jointly submitted to the Federal Communications Commission.[17] But this policy, as noted before, may not produce the anticipated benefits.

The international impact of national policies, particularly in regard to separate satellite communications systems will now be briefly examined. The only separate system which will be commented on is PANAMSAT, since it is the only one that aims to provide satellite services to Latin America -- in competition with INTELSAT, and as a potential alternative (or competitor) to the CONDOR satellite.

B) THE USA'S NATIONAL POLICIES

The "separate systems" authorized by the U.S. government are the outgrowth of the deregulatory philosophy which has prevailed in the last ten years in that country. In discussing the systems separate from INTELSAT, several national trends and tendencies which have international repercussions should be considered.

In the first instance, the USA has been in favor of commercial competition and a "free market" since it instituted its domestic "open skies" policy in the early 1970s.[18]

Other economic sectors -- such as the airlines -- have also been "deregulated" in the last ten years, with international repercussions as well (e.g., noise abatement policies, landing rights, etc., as mentioned in Chapter Two).

The USA transportation and telecommunications environment are unique in that traditionally they have been in the hands of private parties. In most other countries these sectors have been under the control, if not ownership, of the governments, which have provided them as public services and in their national interest. Because of these different philosophies, there seems to exist some confusion as to what is meant by, and expected from "deregulation" and "privatization." The philosophical differences have led to stalemates in discussions between the USA and other countries.[19]

In the United States, <u>deregulation</u> -- of the airlines and of telecommunications -- has meant competition in an open market, on a relatively "level playing field." Deregulation is the diminution or absence of market entry barriers -- i.e., economic deregulation. There are other regulations which still remain in force: technical and mechanical safety standards as well as legal ones. As to the legal framework, several of the regulations (e.g., those limiting foreign ownership of telecommunications or airlines to 20% of the shares) remain in place and are enforceable. (The Communications Act, 47 U.S.C., §310(b) (1985) restricts foreign ownership of broadcast and common carrier systems to 20%.)

In other countries, telecommunications traditionally have been provided as public services by the governments. Hence, until now the governments have enjoyed a monopolistic position as sole providers of these public services. With the current trend to deregulate and privatize the non-USA telecommunication entities face a "double barrelled" gun -- deregulation -- regarding opening the sector to non-governmental players, and lowering the economic entry barriers. The other "barrel" is privatization -- i.e., the potential new owners and operators of the telecoms would be private corporations, or mixed corporations (partly government owned and the remaining percentage of ownership in the hands of private parties). What services (some or all) should be "privatized" is another issue that needs to be addressed.

For countries that have large, well-developed telecommunication industries, the prospect of privatization -- and deregulation -- can be enticing. Hence, both Japan and the United Kingdom have begun to go down the deregulatory road.[20] The "verdict" is not in yet on the long (or short) term benefits of deregulation and privatization for the government, the manufacturers or suppliers of telecommunication equipment and more importantly, their impact on the consumer.

The less developed countries, those that must depend on foreign suppliers for the majority of their equipment and technical expertise are now facing or even being confronted with "privatization" as "the solution" to their telecommunications problems.

The ASETA countries are not immune to the privatization pressures, and indeed, a privately financed, or part-government and part privately-funded regional satellite system might be a solution. This presents a problem, however: who would be, or are there, private parties with sufficient funds to pay for the system? Or, if the telecommunication entity is to be sold off in little shares (like British Telecom), would the present legal structure of the national telecommunications entities allow any, or even some private ownership? The legislation of each country member of ASETA would have to be studied, and probably amended.

So far, in the ASETA countries, international telecommunications are government monopolies, and they are likely to remain so, unless the governments decide to privatize parts of the telecoms. The problem, then, is which services should be privatized, and what kind of economic (and legal) incentives would be instituted? The most profitable aspects of telecommunications (i.e., the foreign-revenue earners) are international telecommunications. Because of their potential revenues, and also due to "national security" and sovereignty issues, it is highly unlikely that ASETA signatories will place their main source of foreign revenues in the hands of private parties. On the other hand, if the least profitable services are "privatized," there will be few providers. Few people are willing to invest in unprofitable businesses or services.

Whether some of the services will be provided by private parties also requires clear thinking and decisions on the kind of services ASETA aims to provide with CONDOR -- urban and/or rural telephony, telex, data transmission, or television (educational and/or commercial) -- which of these on only a national basis, which of them on a regional, and possibly international basis? These many services offer varying amounts of revenue, and the potential consequences of offering some, but not all, on a private commercial basis will have to be analyzed in depth. Furthermore, the five countries should be in agreement on whether they will allow private parties to provide certain telecommunications services, and if so, which ones.

Another consideration in regard to "deregulation" and "privatization" is whether telecommunications should be a "public service" provided by the government for the benefit of its citizens, or whether they should be regarded as another profit-making economic sector. In the USA, where telecommunications have always been in the private sector, and not considered as a "public service," the answer is clear: competition will lead to the provision of better services by more companies. In more centralized economies, where telecommunications are part of the public services run by the government, this philosophy or approach will take years to change--unless the government sees a very specific (financial) benefit to allowing private parties to be the providers of telecommunications. In smaller countries, with few individuals having the financial resources required, the result could be a private monopoly offering even fewer services. After all, why invest in the less lucrative telecommunication services, such as rural telephony, when an investment in urban networks will yield a much greater profit? (But also continue the trend toward the concentration of telephones and services in only the major urban centers?)[21]

Thus, in "privatizing" telecommunications in some countries, the result may be the creation of another private monopoly, less responsive to the public and more difficult to control. There is no guarantee that a private monopoly will provide better or more services than the government. And in most countries, competition between two or more firms is not economically viable. Even in the United States, the private "monopoly" of AT&T led to its divestiture in 1984. Even though competition exists, the economic health of the competitors is not certain.[22] As with the deregulation of the airlines, which initially led to competition and is now leading to a few large companies providing services only to the lucrative cities, it is likely that in the long run there will be a concentration of services (and resources) in the hands of a few telecommunications companies. As with the airlines, it is doubtful that the public is really better served, or the beneficiary of improved and cheaper offerings.[23]

While "deregulation" and "privatization" may work in well-developed economies -- and in certain sectors -- these policies may not be entirely applicable in poorer countries with fewer economic resources which may already be concentrated in the hands of a few. National policies, in brief, may not always be "exportable" or workable in another country. Given the glacial speed at which government institutions evolve or change, it will take a while before many of them -- particularly in Latin America -- decide to "deregulate" or "privatize" their telecommunications monopoly.

1) <u>"TRANSBORDER" TELECOMMUNICATIONS</u>

While the "open skies" policy of the USA allowed for the growth of domestic competition in that country, this policy began to affect the provision of international services in 1981.

The first challenge to INTELSAT's transmission of public international telecommunications was the sanctioning of "transborder" satellite video services to some of the Caribbean countries. The Federal Communications Commission characterized these transmissions as being "merely incidental" to domestic communications, and therefore not truly "international" telecommunications:[24] a potential receiving country just happens to be within the footprint of the satellite providing domestic (USA) communications.

COMSAT and other signatories to INTELSAT protested the FCC's <u>Transborder Satellite Video Services</u> decision, and the FCC was cautioned by the USA State Department that the transmitting corporations and receiving countries would have to seek coordination under Article XIV(d) of the INTELSAT Agreement.[25]

Subsequently, coordination with INTELSAT under this Article was sought, and approved for the majority of these countries. Hence, some international telecommunications services are no longer described as "international," but merely as "transborder." In any event, such services are making use of domestic satellites to provide international telecommunications. One commentator noted that the FCC's approval of "transborder" services ... "resulted in the first U.S. imposed 'chink' in the INTELSAT armor of exclusivity."[26]

The second major challenge to INTELSAT came with the request by several corporations to establish private satellite systems separate from INTELSAT. Their petitions (and the U.S. government's favorable action) were based on the Communications Satellite Act of 1962, §102(d), which reads:

> "It is not the intent of Congress by this Act ... to preclude the creation of additional communications satellite systems, <u>if required to meet unique governmental needs or if otherwise required in the national interest</u>." [Emphasis added].[27]

Beginning in 1983 with the applications of Orion Satellite Corporation, International Satellite, Inc., and Pan American Satellite Corporation (PANAMSAT),[28] the USA's views that it was in the "national interest" to have separate systems began to prevail. One reading of Section 102(d), cited above, could lead to the view that separate systems can be authorized only if required to meet unique governmental needs or if otherwise required in the national interest. However, all the applicants so far have been private corporations aiming at providing private network services, rather than at meeting "unique governmental needs." Furthermore, whose "national interest" is at stake is a moot question: the USA's national interest. In authorizing the separate systems, the USA quite naturally has given a more liberal interpretation to this Section of the Communications Satellite Act of 1962.

The USA concluded that "[a]lthough the Satellite Act [of 1962] provides for the establishment of a global commercial satellite system, it clearly does not require or contemplate a monopoly satellite system."[29]

In this respect it should be recalled that the Communications Satellite Act of 1962 is part of the

USA's domestic legislation, applicable within the territorial limits of that country. The INTELSAT Agreements, on the other hand, are international treaties, binding on all Signatory countries, including the USA.

The Preamble of the INTELSAT Agreement "notes" the provisions of the 1962 Satellite Act for the establishment of "a global commercial telecommunications satellite system." Pursuant to the principles set forth in the Preamble, INTELSAT was established with the main purpose of developing, operating and maintaining the space segment [telecommunications satellites][30] of the global commercial telecommunications satellite system...."[31]

One document speaks of "a" system, the other of "the" global satellite system. Since the USA's interpretation leans toward "a" system, one of many, it has authorized other systems separate from INTELSAT, basing its decision on national legislation, and not on international treaties.

The separate systems are the "natural" result of the deregulatory efforts undertaken in the USA in the 1980s. The reasoning seems to be that if competition is good at the domestic level, it must be good at the international level as well. But the USA has encountered the resistance of the governments in other countries, most of which have exclusive control in the provision of telecommunications services. Hence, to date, the separate satellite systems authorized by USA domestic legislation remain "paper" systems, since they have not been able to obtain "correspondent" countries -- i.e., countries that will allow them to operate separately from the government-sanctioned system (INTELSAT). The one exception is PANAMSAT, which obtained Peru as its correspondent in 1986.

2) PANAMSAT

The Pan American Satellite Corporation (PANAMSAT) is the only separate system which will provide services to the Latin American countries as well as to the North Atlantic region. Its satellite, the "Simon Bolivar" is scheduled for launch in 1988. Countries will be able to buy and/or lease transponders from PANAMSAT. However, how many "clients" PANAMSAT has or will have is still an open question. Peru so far is the only "sure" client for at least one transponder, which it acquired for U.S. $1.00.

PANAMSAT's proposal to sell or lease transponders, according to the FCC, would provide "...

international users with the same benefits that domestic [USA] users have enjoyed as a result of the Commission's Domestic Transponder Sales decision."[32]

The FCC authorization of PANAMSAT is based on President Reagan's determination that "alternative satellite systems are required in the national interest within the meaning of Sections 102(d) and 201(a) of the 1962 Communications Satellite Act, but subject to certain limitations."[33] One of these limitations was entering into consultation with INTELSAT, to ensure technical compatibility and avoid economic harm, as provided by Article XIV(d) of the INTELSAT Agreement. Another restriction is that the system provide services for communications not interconnected with public switched message networks.[34]

After many protracted negotiations and consultations, PANAMSAT managed to coordinate some of its transponders with INTELSAT, to avoid causing that entity any significant economic harm, and received approval to sell or lease the separate satellite capacity.

It is interesting to note that despite the FCC's finding that separate systems are in the national interest of the United States, other countries have not found them to be in their national interest. Thus, even though PANAMSAT's "Simon Bolivar" satellite is ready to fly, so far it has only one client in Latin America, Peru, and none in Europe.

The ESCO Report (supra, Chapter 3) considered PANAMSAT's transponder capacity as one of three alternatives for establishing a regional satellite system in the Andean Community. The benefits proposed by PANAMSAT include domestic and/or regional spot beams, and leased or purchased transponder capacity on the same spacecraft. (The three countries that lease INTELSAT capacity -- Colombia, Peru and Venezuela -- utilize their transponders for domestic communications only. The transponders are not all on the same satellite, so that interconnecting them for regional use becomes more difficult and expensive).

On the negative side, however, use of PANAMSAT's spacecraft would require investing in new terrestrial connections compatible with that satellite (whether the C- or Ku Bands are used). In addition, the costs of purchasing or leasing the transponders may be quite different than the ones quoted or estimated prior to launch. (None of these costs is available to this author).

Another deterrent to using PANAMSAT is that as this is its first satellite, it obviously has no history or professional performance record. INTELSAT, on the other hand, has over twenty years' experience in providing satellite communications, and its member countries have the infrastructure compatible with that system.

Perhaps the greatest drawback to PANAMSAT as the provider of domestic and/or regional telecommunications services to the countries of the Andean Pact is the fact that they would still be dependent on an external provider for their telecommunications. One of their objectives is to have control over their telecommunications; but this goal would not be achieved by leasing capacity from PANAMSAT. If they purchase transponders, they would still not be in total control, since the TTCM station would not be located in one of the ANCOM countries.

The ESCO Report concluded that, although PANAMSAT presented some benefits to the ANCOM countries, the risks outweighed the strong points, and that the best alternative was for these countries to launch their own satellite.[35]

PANAMSAT's success in establishing itself as a viable satellite system separate from INTELSAT is dependent on its contracting with other countries and/or corporations for the use of its transponders. As noted earlier, only Peru has agreed to acquire one transponder leaving another twenty-three transponders to be negotiated.

PANAMSAT is also the only separate system which seeks to provide services to developing countries in the Latin American region. The other separate systems focus on the North Atlantic route (East-West), but perhaps a North-South view would be more productive. At least for PANAMSAT this focus has been successful. Whether this corporation's venture ultimately is a financial success, and is able to provide the many services it aspires to will be known in a few years' time, when the "second generation" of "separate systems" will be ready for launch. (This is assuming the first generation is launched within the next few months or years). Until then, the separate systems, including PANAMSAT, will remain "paper systems," despite the U.S. Government's finding that they are in the "national interest."

C) INTELSAT, ASETA, AND REGIONAL SATELLITE TELECOMMUNICATIONS

In 1984, INTELSAT did a feasibility study of leasing transponders to the Andean countries, with the objective of providing the region with shared transponder capacity. (See Chapter 3, <u>supra</u>.)

The advantages of leasing shared transponder capacity included economic gains as well as learning to manage a regional space segment at relatively little risk. Furthermore, most of the requisite infrastructure was/is already in place. The ultimate costs per ANCOM country were modest, compared to the alternative of launching a satellite of their own (about U.S. $1 million per transponder versus U.S. $210 million for the space segment alone proposed by the ESCO).[36] It should be recalled that Colombia, Peru and Venezuela already lease transponder capacity from INTELSAT for domestic communications. Therefore, if Bolivia and Ecuador leased some capacity, and one or two transponders were utilized for regional communications, ASETA could have (had) its own regional system at about one-tenth of the cost of what it would have to pay for its own satellite.

There were -- and still are -- some disadvantages to leasing surplus capacity from INTELSAT, as was noted earlier in Chapter 3.

The drawbacks of leasing shared capacity were that the transponders would not be available on the same satellite. However, INTELSAT's new satellite, scheduled for launch in 1988, might (have been or) be able to accommodate the leased transponder capacity for Latin American countries.

The most serious drawback would be the continued dependence on the international organization to meet domestic, regional and international needs, and the continued "external" control over the communications of the countries involved.

On the other hand, whether capacity were leased or purchased from INTELSAT (or PANAMSAT), the underlying political and legal issues remain the same, and as yet, unresolved. (See Chapters 5-7).

1) PLANNED DOMESTIC SERVICES AND OTHER NEW INTELSAT SERVICES

In response to the "separate systems" challenge, as well as to the "transborder" services initiated in the United States, INTELSAT began offering a variety of services in the early 1980s -- IBS, INTELNET, VISTA, culminating with "Planned Domestic Services" (PDS). They differ from prior offerings in several respects.[37]

Since 1974, INTELSAT has been leasing transponder capacity for domestic communications services on a pre-emptible basis. PDS, however, would provide for the sale of transponder capacity, and for non-pre-emptible long-term leases of transponders for domestic needs.[38] In addition, PDS transponders could be used for regional video distribution, since they would be "transborder" services, incidental to the transmission of domestic video programs, or data transmission beyond national borders.[39] Transborder service would be limited to the spillover of domestic TV programming and data networks, and would be one-way only.[40]

PDS would enable developing countries to have domestic (and "transborder") video and data transmission services, but allegedly the developing countries did not find the prices enticing enough.[41] It is somewhat ironic that INTELSAT and COMSAT, which were opposed to the USA's Transborder Satellite Video Services in 1981,[42] are now endorsing "incidental distribution" of domestic video services, as a "response to competitive pressure."[43]

It would seem, however, that whether the "transborder" services are offered by INTELSAT through domestic transponder leases, or through U.S. domestic satellites (as proposed in 1981), they are still international in character: they cross borders, and are not intended primarily for the recipient on the other side of the boundary. Hence, the consent of the receiving country (whether it be an "incidental" receiver or an active one) should still be sought, as recommended by the Department of State in the 1981 Transborder Satellite Services.[44]

In regard to the ASETA countries, the Planned Domestic Services -- whether the transponders are bought or leased -- could be an interesting alternative to buying their own spacecraft. The benefits would be the same as those described in the INTELSAT Transponder Lease Report of 1983, and some additional ones, especially if the transponders were purchased. Then the ASETA members would be in control of their space segment in that they would not be pre-empted. They could purchase additional capacity as required by their needs, and they could expand their network based on real need.

ASETA would be in a unique position, if it were to acquire transponder capacity from INTELSAT for a regional system. (The other existing regional and domestic systems all have their own space segment).

On the one hand, because this would be a novel use of the international space segment, these countries might run into some opposition from other members of INTELSAT. Already, the developing countries encountered the opposition of the USA, U.K.

and other industrialized countries when they sought lower prices for the surplus C-Band transponders which would be available for the Planned Domestic Services.[45] Since the industrialized countries are also the satellite manufacturers, it would not be to their advantage to substitute the sale of six transponders for the sale of three satellites, launches, insurance, etc. They would "lose" well over U.S. $200 million as a result. Thus, the same countries which emphasize the development of regional telecommunications via satellite are likely to encourage them so long as they involve the purchase of a satellite, but not if it means acquiring surplus transponders from INTELSAT. Thus, the ANCOM countries may face some opposition from INTELSAT members if they were to purchase surplus transponders for a regional system.

On the other hand, should these same countries purchase capacity for their domestic use, and transmit video and data on an "incidental" basis--i.e., if their extra-national transmissions were described as merely "transborder," they could do so through the Planned Domestic Services now offered and sanctioned by INTELSAT.[46]

These new services offered by INTELSAT would seem to be in accordance with Articles II and III of the INTELSAT Agreement. (After all, INTELSAT is not about to offer services contrary to its Agreement). The pertinent parts of these Articles which would allow for ASETA's use of the international space segment for domestic use (and "incidental" regional use) state:

> Article II(c): "Telecommunications administrations and entities may, subject to applicable domestic law, negotiate and enter directly into appropriate traffic agreements with respect to their use of channels of telecommunications provided pursuant to this Agreement...."

Thus, the ANCOM countries, and particularly those that already lease transponders for domestic communications may decide to use them for "incidental" or transborder video distribution, in full accordance with the INTELSAT Agreement.

Article III of the INTELSAT Agreement states that

> (c) The INTELSAT space segment established to meet the prime objective [stated in Article III(a)] shall also be made available for other domestic public telecommunications services on a non-discriminatory basis to the extent that the ability of INTELSAT to achieve its prime objective is not impaired.

> (d) The INTELSAT space segment may also ... be utilized for the purpose of specialized telecommunications services, either international or domestic, other than for military purposes, provided that: (i) the provision of public telecommunications services is not unfavorably affected thereby; and (ii) the arrangements are otherwise acceptable from a technical and economic point of view.
>
> (e) INTELSAT may, on request and under appropriate terms and conditions, provide satellites or associated facilities separate from the INTELSAT space segment for: (i) domestic public telecommunications services in territories under the jurisdiction of one or more Parties; (ii) international public telecommunications services between or among territories under the jurisdiction of two or more parties....[48]

Section (e) is perhaps the most pertinent to the establishment of a regional satellite communication system, such as Project CONDOR, which would be used for both domestic and regional communications. This could be accomplished either by leasing or purchasing transponder capacity from INTELSAT, as provided by Article III(e).

This possibility or option has been raised at the ASETA Board Meetings, as well as in the INTELSAT Transponder Lease Report of 1984.[49] The ESCO Report also considered this alternative, but discounted it, despite the benefits an INTELSAT-based regional system would provide:

-Use of the transponder capacity leased for domestic purposes at no additional risk to the leasing country.

-The possibility of leasing or purchasing transponder capacity to meet actual needs and increased demand.

-Gaining experience in operating and managing a regional satellite network without many of the risks involved in doing so (i.e., risk of economic or technical failure of the system); providing the appropriate "training ground" for the technicians, engineers, economists, and other personnel involved.

-Economic savings of considerable magnitude: even if leasing or purchasing transponder capacity were to cost U.S. $20 million by the year 2000 (the ESCO and INTELSAT Transponder Lease Reports estimate the cost at U.S. $14 million for eleven transponders), the $20 million would be less than one-tenth of the ESCO's 1986 estimate for the space segment alone (U.S. $210 million).

-The availability of capacity for domestic use can spur the development of the national infrastructure, particularly for the provision of rural telephony services. (This is the case at least in Colombia, where several earth stations are being installed in rural areas).

-The regional use of satellite capacity, whether for telephony, video or data transmission could also be experimented with, at no great risk to the countries involved.

-The operation of a regional telecommunications system, even if it were on an experimental or "pilot" basis for a few years, would give the ASETA countries a good indication of what transmissions are feasible (economically and politically) and which areas are likely to remain problematic. It would also give them the necessary time (and incentive) to resolve these issues prior to launching their own separate system.

All these, and other additional benefits could accrue to the Latin American countries involved in Project CONDOR, but using INTELSAT capacity. However, the cooperation of INTELSAT would also be required to make possible a regional communications system using the international space segment. INTELSAT would have to be willing to, at least, lease or sell transponder capacity on the same satellite. Absent this possibility (because of orbital location and resulting footprint), it would have to endeavor to facilitate inter-satellite links, or terrestrial links.

Of greater importance, however, would be the cooperation and consent of INTELSAT's members in utilizing the international space segment for regional communications.[50] As noted earlier, this would be the first time a regional network would be configured within the INTELSAT system. Of course, the economic (and political) benefits to the organization as a whole would have to be taken into account; the potential gain or loss of the individual countries should also be considered, but should be secondary. That is, the countries which manufacture and launch satellites stand to lose the sale of a spacecraft to the ASETA countries, should they opt to lease or buy transponder capacity from INTELSAT. This is potentially a loss of well over U.S. $300 million. Hence, it is likely that a few countries will be against the long-term lease or purchase of transponders from INTELSAT, just as they were against price reductions for the purchase of surplus transponders.[51]

On the other hand, if INTELSAT wants to maintain its competitive advantage, particularly in view of PANAMSAT's offering transponders for domestic and regional use, it may approve similar use of its space segment by a group of countries such as those of the Andean Community.

Ultimately, the choice of whether to continue leasing or purchasing transponder capacity from INTELSAT, from PANAMSAT, or to acquire their own satellite is up to the ASETA countries -- Bolivia, Colombia, Ecuador, Peru and Venezuela. Unfortunately, the decision is likely to be based on political (intangible) factors, rather than on economic and technical realities. The end result may be an expensive, nearly useless (or certainly underutilized) spacecraft named CONDOR. Its namesake on earth, the condor is nearing extinction because of human thoughtlessness. It is hoped that prior to launching the artificial bird, serious thought will be given to the nonpolitical factors which will determine the success -- or lack thereof -- of a regional satellite system for the Andean Community. Some of these factors are set forth in the next chapter.

1 Communications Satellite Act of 1962, §102(b); Pub. Law 87-624, 76 Stat. 419, August 31, 1962, 47 U.S.C. §§701, et seq.

2 INTELSAT, Agreement Between the United States and Other Governments and Operating Agreement. U.S. T.I.A.S. 7532, Washington, D.C., August 20, 1971; entered into force February 12, 1973. See Article I(c).

3 These Agreements were signed by Colombia, Peru and Venezuela in 1971, and were ratified in 1972 by the respective governments: Colombia, Supreme Decree No. 37, Revista Oficial of March 6, 1972; Peru Decree Law 19,645 of December 5, 1972, El Peruano, December 7, 1972; and Venezuela, Law of December 23, 1972 approved the Agreements, Gaceta Oficial, December 28, 1972 (Extra 1557).

4 INTELSAT Report, 1986-1987.

5 INTELSAT Agreement, Article III(a).

6 INTELSAT Report, supra, note 4.

7 See, for example, K. Godwin, The Proposed Orion and ISI Transatlantic Satellite Systems: A Challenge to the Status Quo. 24 Jurimetrics Journal 4:297-333 (Sum. 1984). Also D. Leive, INTELSAT in a Changing Environment, presentation at the 1983 Telecom Forum, Geneva, October 1983.

There have been numerous articles in Aviation Week and Space Technology, Broadcasting, Satellite Communications, Telecommunications Policy over the past few years on INTELSAT, and the new separate systems that aim to provide competitive services although only in some areas.

8 The Federal Communications Commission issued its Report and Order, In the Matter of Establishment of Satellite Systems Providing International Communications, 101 F.C.C.2d 1046 (September 3, 1985).

This Report and Order provides the background, rationale, and a discussion of the economic effects of the separate systems, concluding that they are in the national interest. [Cited as 101 F.C.C.2d hereinafter.]

9 *See* S. Lauffer and T. Robertson, A Study of The Impact of U.S. Separate Satellite Systems Policy on Developing Countries. Prepared for the U.S. Department of State Bureau of International Communications and Information Policy, Washington, D.C. April 1987, pp. 23-36. [Cited as D.O.S. Study hereinafter.] Also *see* chapter 3, *supra*, regarding the regional systems, EUTELSAT and ARABSAT.

The avoidance of significant economic harm duty is found in Article XIV(d), INTELSAT Agreement.

10 INTELSAT Agreement, Article XIV(d). Article III(e) allows INTELSAT to

> "... provide satellites or associated facilities separate from the INTELSAT space segment for: (i) domestic public telecommunications services ...; (ii) international public telecommunications services ...; (iii) specialized telecommunications services ... provided that the efficient and economic operation of the INTELSAT space segment is not unfavorably affected in any way."

11 The "national interest" is specified in the 1962 Communications Satellite Act, §102(d), which states:

> It is not the intent of Congress by this Act to preclude the use of the communications satellite system for *domestic* communications where consistent with the provisions of this Act nor to preclude the creation of additional communications satellite systems, if required to meet unique governmental needs or *if otherwise required in the national interest*." [Emphasis added].

12 *See* Godwin, *supra*, note 7, p. 309.

13 INTELSAT Agreement, Article XIV(e).

14 Ibid., Article I(k).

15 Ibid., Article I(l).

16 101 F.C.C.2d at 1065.

17 Ibid., at 1054.

18 Domestic Satellite Policy, 35 F.C.C.2d 834 (1972), authorized domestic carriers to provide domestic television relay services.

19 See M. Snow, Competition by Private Carriers in International Commercial Satellite Traffic: Conceptual and Historical Background. Included in Tracing New Orbits: Cooperation & Competition in Global Satellite Development. Donna E. Demac, Editor. New York, Columbia University Press (1986).

20 Since these are recent occurrences, their ultimate success is difficult to assess. One view is presented in J. Hills, Deregulating Telecoms. Greenwood Press (1987).

21 See AT&T's "The World's Telephones," which provides statistics on the concentration of telephones in urban centers, and the resulting scarcity of telephones in rural areas.

According to Colombian estimates and data, in 1973 only 5.2% of the total telephone lines were installed in rural areas, where nearly 60% of the population resided. By the year 2003, it is estimated that the rural population will decrease to 26.3%, and will have nearly 16% of the total telephone lines. Charts 1, 2 and 4 included in C. Sabogal Castro, Implicaciones del Programa de Telecomunicaciones Rurales en Colombia y Su Planificación en La Siguiente Década. V Jornadas Andinas de Telecomunicaciones, Cochabamba, Bolivia, February 1985.

One objective of rural telephony programs is to stem the exodus from rural to urban areas. That rural telephony has positive effects on the overall development of industrializing countries has been documented in a number of books and journal articles: Telecommunications and Economic Development by R. Saunders, J. Warford, B. Wellenius. Baltimore, The Johns Hopkins University Press (1983); M. Jussawalla and D.M. Lamberton (Eds), Communication, Economics and Development, New York, Pergamon Press (1982).

The International Telecommunication Union has published a series of "case studies" on Telecommunications for Development, a joint ITU-OECD Project (1983). The ITU, pursuant to the Nairobi Plenipotentiary Conference in 1982, established an Independent

Commission for World-wide Telecommunications Development (The Maitland Commission). Its Report, The Missing Link, was published by the ITU in 1984. Among its many findings and recommendations, it urges developing countries to improve and expand their telecommunication infrastructure, particularly in rural areas.

INTELSAT has also compiled an excellent bibliography on telecommunications and development, published in 1985.

22 See Presentation by Judge Harold Greene at Telecom '87, Geneva, 21 October 1987 (Keynote Address to Legal Symposium), for a thought-provoking assessment on the present state of international telecommunications and divergent philosophies.

23 See Hills, supra, note 20.

24 Transborder Satellite Video Services, 88 F.C.C.2d 258 at 268 (1981).

25 Ibid., p. 288.

26 J. Gantt, International Satellite Communications -- Some Current Issues. ABA Forum on Air & Space Law, Washington, D.C.; November 1984.

27 See, supra, note 1, for complete reference to this Act.

28 See 101 F.C.C.2d 1046 (1985) at p. 1048 for the docket numbers of the applications filed by these corporations.

29 101 F.C.C.2d 1046 (1985) at 1065.

30 INTELSAT Agreement, Article I(h) defines "space segment" as "... the telecommunications satellites, and the tracking, telemetry, command, control, monitoring and related facilities and equipment required to support the operation of these satellites;"

31 Ibid., Article II(a). [Emphasis added].

32 Pan American Satellite Corporation, 101 F.C.C.2d 1319-1341 (1985) at 1335. See, supra, chapter 3.

33 Ibid., p. 1327; footnote 8 cites the Presidential Determination 85-2 (November 28, 1984).

34 Ibid., p. 1327.

35 The European Satellite Consulting Organization (ESCO) Report, September 1986. See, supra, chapter 3.

36 Ibid., Section 4, Chapter II.

37 INTELSAT Report 1986-87; see D.O.S. Study, supra, note 9, for another perspective on these new offerings.

38 D.O.S. Study, supra, note 9, p. 49.

39 Ibid., p. 51. (Emphasis in original).

40 Ibid., p. 51.

41 Ibid., p. 50.

42 88 F.C.C.2d 258 (1981).

43 D.O.S. Study, supra, note 9, p. 51, quoting INTELSAT documents.

44 88 F.C.C.2d 258 (1981), pp. 288, 289.
The scope of the Department of State's recommendations (now known as the Buckley Letter) is now being questioned in the courts, particularly in regard to when INTELSAT should be consulted as to the practicality or economy of using the international space segment instead of a "transborder" satellite service. See COMSAT v. Federal Communications Commission, Slip Opinion No. 86-1669 (U.S. Court of Appeals, District of Columbia), decided January 12, 1988. This decision essentially broadens the definition of "transborder services" to the point of diluting any prior prohibitions against the provision of certain services that had been included in the F.C.C.'s International Communications, 101 F.C.C.2d 1046 (September 1985), supra, note 8.

45 D.O.S. Study, supra, note 9, p. 50.

46 Ibid., p. 51.

47 INTELSAT Agreement, Articles II and III; see, supra, note 10.

48 Ibid., Article III(c), (d), (e).

49 See Chapter 3, supra.

50 In this respect, the cooperation and consent of other signatories is essential. Article V(e) of the INTELSAT Agreement states in pertinent part:

> (e) The separate satellites and associated facilities referred to in paragraph (e) of Article III of this Agreement may be financed and owned by INTELSAT as part of the INTELSAT space segment upon the unanimous approval of all the Signatories. If such approval is withheld, they shall be separate from the INTELSAT space segment and shall be financed and owned by those requesting them.... [Emphasis added].

51 D.O.S. Study, supra, note 9, p. 50.

CHAPTER NINE

PROJECT CONDOR: A SUGGESTED "PRE-LAUNCH CHECKLIST"

The purpose of this chapter is to set forth some of the issues raised in the previous chapters which, in this author's estimation, need to be answered prior to launching a satellite that, ostensibly, will meet the needs of the ANCOM countries.

The previous chapters have attempted to study Project CONDOR in a variety of contexts: firstly, as the outgrowth of regional integration efforts undertaken by the countries signatories of the 1969 Cartagena Agreement. Secondly, the project as the subject of a number of feasibility studies, most of which concluded that it should be further studied. These feasibility studies, however, failed to consider any of the institutional or legal ramifications of Project CONDOR. They have dealt with the technical aspects, but have not delved into the economic-financial, or legal issues involved in a regional satellite system. CONDOR raises many questions of international law, as it was attempted to point out in Chapters 5-7. The last chapter, on INTELSAT and Project CONDOR, deals tangentially on some of the economic aspects of the proposed system, as well as on the continued reliance on INTELSAT for domestic and regional telecommunications.

After looking at Project CONDOR through these prisms, it is evident that there a number of issues which must be resolved (if they have a solution) before this system gets "off the ground". These issues need to be addressed in a realistic fashion by the countries involved in the Project, (Bolivia, Colombia, Ecuador, Peru and Venezuela), individually as well as joint participants in the project.

Every country - and region, including the Andean Community, - wants to improve its telecommunications system. Telecommunications is no longer a "luxury" item; it is a requisite for economic and social development. Telecommunications are often likened to roads -- they provide the necessary means of transporting "goods" (in this instance an electronic signal or message) from one person to another. The same that good roads and other means of terrestrial and air transportation have allowed for the development of countries and continents, so too do telecommunications (the "new roads") enhance every aspect of society, and permit its development. (The "less developed countries" are not so labelled without basis: they lack the necessary infrastructures that would allow them to join the global mainstream).[1]

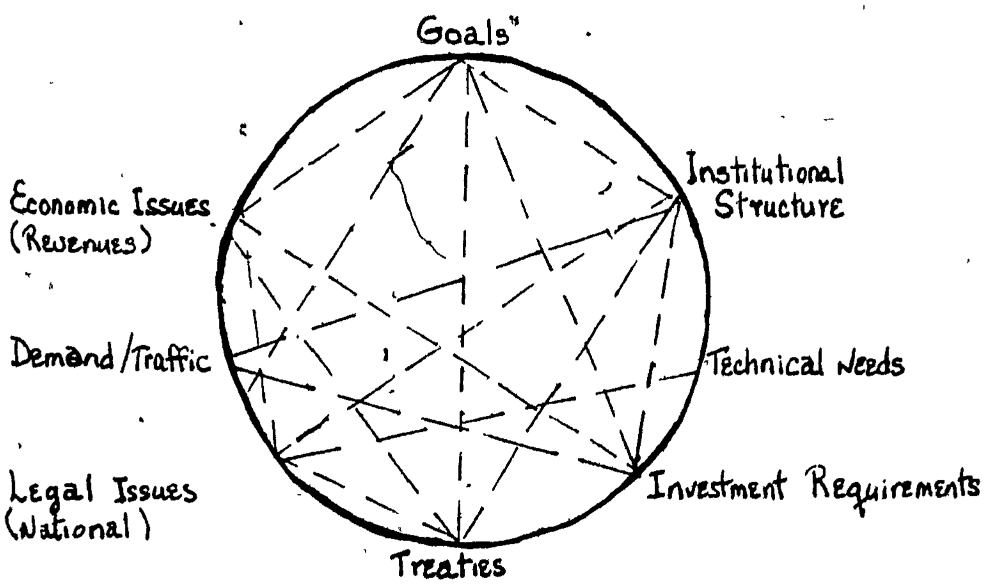
The analogy between telecommunications and roads, though not perfect, can be further extended. Roads are built (usually) with the purpose of linking cities, regions or countries together. The means of transportation also are important, and societies choose whether to invest in mass, public transportation, or to have individuals provide their own mobility - i.e., have more privately owned cars and fewer railways and/or buses.

Telecommunications are also faced with these choices: their provision as a public service, or as a private enterprise; supplying urban centers with more private telephones, at the expense of keeping rural areas out of the mainstream. Conversely, rural telecommunications may be the prime objective.

These choices, so far, have been made by governmental entities which have been providing telecommunications as public services to their constituents. Whether the telecommunications entities will be able to meet all the needs of their potential clients is open to question, if not to attack, globally. (The Maitland Commission Report, "The Missing Link", stated that for the less developed countries to "catch up" with the developed countries would require an investment of billions of dollars).[2]

ASETA, a consortium of five governmental entities which provide public international telecommunications, is faced with these same dilemmas. Choices are not easily made, for they entail long-term consequences. Given the limited financial resources available for telecommunications (whether for their installation, maintenance or network expansion), clarity of objectives and goals becomes imperative. Telecommunications, like roads, must have an end objective. A road to nowhere is a luxury that no country or group of countries can afford.

In drafting a "pre-launch checklist", it is difficult to decide which item should be first on the list, since they are all important and interconnected. They are all an integral part of the larger "picture", with ramifications in nearly every direction. A circle, rather than a vertical list, more aptly describes the situation:



Perhaps the most important issue which needs clarification is the goal or objective of Project CONDOR. Once this is clearly established, the other questions will be easier to resolve. These relate to the institutional structure of the operating entity in charge of the CONDOR satellite; the technical (and technological) choices available; the financial viability of the system and its ultimate outcome. These will be dealt with below.

A) PROJECT CONDOR'S GOALS AND OBJECTIVES

In most of the writings by ASETA (e.g., Minutes of the Board of Directors Meetings) or on Project CONDOR (the numerous feasibility studies), many lofty ideals are set forth: educational TV for rural areas, data transmission capabilities, improved telephony, domestically and internationally, etc. Except for stating that all these services could be provided via satellite, there is no clear determination of priorities, or of objectives.[3]

The stakes involved in establishing a regional satellite system are very high, the consequences far-reaching. Hence, a decision to commit large quantities of resources (manhours, manpower and money) should be made on realistic grounds, rather than on ideological or political ones (e.g., to vindicate claims to sovereign or preferential rights over parts of the geostationary orbit; to "show the flag" or become a member of the "space club").

ASETA would benefit from an examination of the many objectives that are possible and obtainable from a regional satellite system, and also decide on its order of priorities.

These goals may be broken down into several categories: political, economic, social, technical, national, regional, international.

ASETA members must decide what their primary objective is: to expand their national networks, and incidentally provide regional telecommunications? Or is a regional telecommunications network their priority, with growth of the domestic network as incidental? A determination of these priorities would be fundamental to the design of the satellite: whether it would have spot beams for each country, and/or how many transponders will be dedicated to national versus regional communications.

If improved domestic or national telecommunications is the objective of each of the countries involved, it must then decide whether urban or rural communications will be emphasized or given priority.

In regard to rural telecommunications, for years the individual ANCOM countries have endeavored to expand their telecommunications networks in non-urban areas, and have received loans from multilateral agencies for this purpose.[4] They have also passed legislation making rural telecommunications a priority. As early as 1959, Venezuela passed a law granting tax exemptions to telephone and radio broadcasting companies operating in rural areas.[5] In Colombia in 1976 the Government created a "Fund for the Development of Rural Telephony", administered by TELECOM.[6] Similarly, Bolivia created a "Direccion de Telecomunicacion Rural" (Directorate for Rural Telecommunication) in 1979.[7]

Despite the goal of establishing rural telecommunications networks, the majority of telephone services end up being concentrated in the major urban centers,[8] since access to the remote areas - whether jungle or mountains - still remains very difficult.

Hence, establishing basic services, let alone expanding the telecommunications networks in rural areas remains more an ideal than a reality. Unfortunately, the lack of or access to basic services leads to the migration to urban centers, with the subsequent depletion of the rural population. The question thus arises whether having telecommunications -- and which kind of services -- in remote areas will be sufficient to keep the population in rural communities. Sociological and anthropological considerations might be helpful in arriving at some conclusions and suggestions or guidelines as to what services are needed, utilized, and feasible. For example, public call boxes or telephones may be better alternatives for rural areas, where there is access to a central location (a general store, a church or government office).

Additionally, the appropriate technology for remote rural areas must be chosen: this may mean utilizing solar-powered earth stations, (as is done in Colombia and Peru), radio telephones, or microwave links. In this respect, local or national experts should be utilized, as they are more likely to be familiar with the terrain of their country (political, economic and physical) than foreign experts who come to the major urban centers for a short stay, and who, as a result might be insulated from the real situation. (The CAL/SaTEL study and to an extent the ESCO Report are good examples of unrealistic recommendations made by foreign experts).[9]

Each country should also determine for itself whether it plans to utilize satellite capacity - and how much - for television programs, and of what type (commercial or educational). These programs should be developed prior to launch, and a firm commitment obtained from the television providers. For example, allegedly the Colombian Institute for Radio and Television (INRAVISION) is unwilling to participate in Project CONDOR. (Under ASETA's present structure it is unable to anyway, since ASETA's composition is limited to providers of international public telecommunications).[10]

Prior to instituting regional television broadcasts, whether "incidental" to the national ones[11] or intentionally reaching across borders, the countries involved must reach some accord on copyright remuneration, and other legal aspects of international broadcasting.[12] They should not postpone dealing with these issues until after the launch of a satellite - the likely result of that would be not to have regional TV programs because of lack of agreement on them, and thus the transponders designated for regional TV would be un-utilized.

The objectives and priorities -- national versus regional, telephony and data transmission versus television -- will obviously influence all other factors related to the proposed satellite system, and even the structure of the operating entity. The objectives will bear on the design of the system (number, type and location of earth stations; the number of transponders designated for what kind of use). These goals, in turn, will affect the potential revenues derived from the system, as well as the initial investment in it. While there are certain costs and benefits that cannot be quantified (e.g., long-term effects of enhanced telecommunications on a society or country), some of the initial costs may be held down if the goals and priorities are clearly set forth.

Both national and regional telecommunications goals are fundamentally politically choices, with social and economic ramifications. But political choices should be based on concrete social and economic considerations, and not merely on ideological whims.

Telecommunications, the "roads" of tomorrow, need not be inappropriate "super highways", where a simpler, cheaper "by way" would do just as well. Similarly, the "cars" or "busses" need not be "Rolls Royce", when simpler vehicles adapted to the terrain would be more practical and just as effective. In other words, idealism should be tempered with realism, so that the ANCOM countries do not end up having an overdimensioned, under-utilized and nearly useless satellite system. ASETA's "electronic roads" should have concrete, specific "destinations" in mind before they are constructed.

Hence, prior to undertaking the design of its satellite system, ASETA would do well to analyze and determine the national goals of each member country, its regional objectives, and based on these, proceed with the design of its system. Clarity of purpose is fundamental to establishing goals, as well as to the means of achieving them. This sort of clarity, seemingly absent at present, will save ASETA and its member countries much time, energy and money in the short- and long-run.

B) **STRUCTURE OF THE OPERATING ENTITY**

Once ASETA has established clear goals and objectives for its satellite system, the structure of the operating entity will be easier to determine: a governmental public-service oriented entity; a mixed corporation, with participation of the private sector, an international commercially-oriented organization; or a purely privately owned operating entity. The latter seems unrealistic for the present, but a mixture of private and public capital, with majority ownership of the shares in the hands of the government might be feasible. (These alternatives were suggested in Chapter 4, *supra*, and will not be addressed again here.)

In any event, the operating entity must take into account technology's evolution, the fading distinction between "common carriers" and broadcasters, the melding of informatics (computers) with telephony. One entity devoted only to undefined "public international telecommunications" is not viable unless the definition of "public international telecommunications" is as broad and encompassing as that of the International Telecommunication Union, also adopted by INTELSAT. Both define telecommunications as

> . . . any transmission, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature, by wire, radio, optical or other electromagnetic systems;[13]

The INTELSAT Agreement further defines "public telecommunications services" as

> . . . fixed or mobile telecommunications services which can be provided by satellite and which are available for use by the public, such as telephony, telegraphy, telex, facsimile, data transmission, transmission of radio and television programs between approved earth stations . . . but excluding those mobile services. . . which are provided through mobile stations operating directly to a satellite which is designed, in whole or in part, to provide services relating to the safety or flight control of aircraft or to aviation or maritime radio navigation;[14]

The EUTELSAT Convention and Operating Agreement provide yet another definition, perhaps more appropriate for a regional satellite system:

> Public telecommunications services means fixed or mobile telecommunications services which can be provided by satellite and which are available to the public, such as telephony, telegraphy, telex, facsimile, data transmission, videotex, transmission of radio and television programs between approved earth stations having access to the EUTELSAT Space Segment for further transmission to the public; multiservices transmissions, and leased circuits to be used in any of these services;[15]

ASETA members should agree on a definition of the types of services they will be providing -- once they decide upon basic goals and objectives -- whether they will include both fixed and mobile telecommunications services.

While EUTELSAT's or INTELSAT's Agreements may serve as "guidelines", there are some very real differences between EUTELSAT and the potential "ANDESAT" that must be considered in drafting the Andean Community's Agreements.

One major difference between these two regional groupings is the number of participants. EUTELSAT comprises twenty countries, whereas ASETA is comprised of only five countries. On the other hand, the small number of countries involved could lead to speedier negotiations -- and reaching agreements -- at least in theory.

Prior to drafting an Agreement, the ASETA members must decide whether CONDOR is to be utilized primarily for national (domestic) or international (regional) telecommunications. In this respect, Article III of both the INTELSAT and EUTELSAT Agreements provide for domestic and international service on the same basis. This kind of provision could also be incorporated into the ANCOM's Agreements.

While the INTELSAT Agreement and EUTELSAT Agreements provide for representation by public or private parties,[16] ASETA's present Articles of Incorporation limit membership to the five governmental entities which provide "public international telecommunications".[17]

These provisions obviously restrict ASETA's representation and purpose, limitations which may be counterproductive to the implementation of Project CONDOR. Hence, the new Agreement should make provisions for participation of private and public entities, similar to those provided in Article II of the EUTELSAT Convention.

The new entity's Convention or Agreement should also reflect the financial autonomy that "ANDESAT" ideally should have. National legislation, and legal requirements of each country should be analyzed before the Operating Agreement is adopted. This would ensure that national legislation will not be a dissuasive factor in the establishment of the operating entity in one country or another.

Furthermore, provisions of the Cartagena Agreement of 1969, such as "Decision 24"[18] should not act as impediments to CONDOR's success. Rather, CONDOR, and its operating entity, should enhance the integration goals that are at the heart of the Cartagena Agreement. However, the Board of the Cartagena Agreement should have minimal voice or say over Project CONDOR, unless it's well-versed on telecommunications matters. Rather, the Ministries of Communication (and/or Transport) should be the ones that have the ultimate decision-making power. If CONDOR is going to fly successfully, the support of those Ministries is essential. That support should be reflected in the structure, autonomy and financial power that is granted to "ANDESAT", "OATS", or whatever name is given to the operating entity of the CONDOR.

There is no point in selecting an organizational structure or in drafting an Agreement that will not meet the needs of either the organization or its goals.

ASETA, CATSAT, OATS, EMA, need to be replaced by one functional operating entity for which several models exist (e.g., EUTELSAT, INTELSAT, even national legislation pertaining to BRAZILSAT or the Mexican "Morelos" satellite). These alternatives should be carefully studied, modified and the final Convention and/or Operating Agreement crafted to reflect the goals of the ANCOM countries' satellite project. The choice is in their hands.

C) **TECHNOLOGICAL CHOICES AND TRAFFIC QUESTIONS**

The choice of appropriate technology for a telecommunication system depends on several factors, among them the objectives of the system as well as its current utilization, or traffic.

Traffic figures are closely guarded, and difficult to come by. In this respect, ASETA, like LACAC, has had to speculate as to its traffic: demand for services, as well as the utilization of services provided.

As early as 1977, the "SATAN" study stated that the data on which it was based were mere estimates.[19] The situation has not improved notably in the last decade. As recently as July 1987, ASETA stated that prior to committing itself to the design of a satellite system, it needed to update its statistics.[20] Nevertheless, in December 1987, ASETA decided to proceed with Project CONDOR, including its design. Whether the design will be based on facts, on actual data, or merely on projected estimates is open to question.

ASETA may have data on telephony traffic (telephone, telex, data transmission), but it is unlikely that it has data on radio and TV broadcasting (hours, types of programs, revenues), since the mass media are not within its jurisdiction.[21] However, if the satellite is to provide radio and TV broadcasts, it would be helpful to have some data on them. The information could be used in designing the satellite itself, in allocating frequency bandwidths in determining the quantity, size and type of earth stations to be acquired.

For example, utilization of the Ku Band may be appropriate for densely populated urban centers with large volumes of data transmission, where smaller earth stations could be installed. However, tropical countries (like ASETA's members) are more subject to rain attenuation than arid regions, and for this reason alone, the Ku Band may not be economical or optimal for them.[22]

On the other hand, use of the C Band (4-6 GHz) may be better suited to meet the telephony and broadcast requirements of countries with large rural populations. The earth stations required in this instance would be larger, perhaps "TVRO", installed only in community centers.

The technical and technological choices should be based on facts, such as demographics, availability of telephones, television sets, (and electricity), of computers, the level of development (and education) of the city, region and country. Other essential facts are those related to demand for service (based on waiting lists for telephone lines), availability of services by city, region and country.

Whatever data are collected will be useful only if they are systematically collected, utilizing the same criteria or categories in each of the five ANCOM countries.

For example, the data available in AT&T's "The World's Telephones"[23] are compiled differently than in the International Telecommunication Union's "Yearbook of Common Carrier Telecommunication Statistics".[24] In some instances data are not even given, because the reporting administration has not submitted them to either of these entities.

In other instances statistics are available, but not always for the same category. Thus, while ASETA's statistics for 1982 counted the number of subscribers and number of telephones, the ITU Yearbook (1976-1985) does not include these data on Bolivia.

According to ASETA, the following figures were available for 1982:[25]

Country	No. Of Subscribers (1000s)	No. of Telephones	No. of Telephones Per 100 Population
Bolivia	160	N/A	N/A
Colombia	1,654	1,985.7	N/A
Ecuador	310	N/A	N/A
Peru	326	N/A	N/A
Venezuela	1,180	N/A	N/A

According to the AT&T's statistics for 1982:[26]

Country	No. Of Subscribers (1000s)	No. of Telephones	No. of Telephones Per 100 Population
Bolivia	(CATEGORY	204,747	3.2
Colombia	NOT	2,547,222	9.4
Ecuador	INCLUDED	N/A	--
Peru	IN AT&T	519,703	2.9
Venezuela	YEARBOOK)	1,021,136	6.4

The ITU, for 1982, same categories, gives the following figures:[27]

Country	No. of Subscribers (1000s)	No. of Telephones	Telephone Sets Per 100 Population
Bolivia	Not included IN ITU	NO DATA, except for 1978	---
Colombia	Yearbook	1,866,490	6.47
Ecuador		311,700	3.87
Peru		519,639	2.97
Venezuela		1,377,630	9.43

As may be seen just from these figures, none of the three entities compiling these figures has all the numbers, nor do they "count" the same thing. The ITU figures in the last column are the number of telephone sets per 100 population. Presumably, AT&T also counted the number of sets/100 population. If so, there is a fair difference between AT&T's numbers and the ITU's. As to the number of telephones, there also exists some variation in the numbers given by the three entities (ASETA, AT&T and the ITU).

In regard to traffic, ASETA gives figures for international traffic in minutes, while the ITU gives a total of "outgoing international traffic." AT&T, on the other hand, gives the number of calls, metered pulses as well as minutes of international outgoing telephone traffic. Only two countries reported the number of international outgoing calls to both ASETA and AT&T (in minutes):

YEAR		ASETA	AT&T
1982	Colombia	70,250,900*	19,538,000
	Peru	6,615,300*	6,635,300

* This figure may include all calls, since ASETA does not seem to differentiate between incoming and outgoing calls. There is a vast difference in the number of calls reported for Colombia.

While statistics may be manipulated and taken out of context to prove a particular point, the fact remains that in the case of the ANCOM countries there is a paucity of reliable data (as may be seen from the few numbers given above).

If ASETA is going to design and dimension both its spacecraft and earth segment to meet projected traffic growth, it is essential that accurate data be available on past and current traffic requirements. Otherwise it is likely to recommend the construction of a system inadequate to meet its needs, one that would be as "overdimensioned" as recommended in the ESCO Report[28] for the space segment or an unrealistically dimensioned earth segment, as CAL/SaTEL suggested.[29]

Investing in statistics-gathering, based on a systematic method utilized by all five ASETA countries, may not be an appealing prospect. It is submitted, however, that some forethought and investment in this mundane task will result in economies of scale, economy of time as well as of funds. Once the figures are obtained, ASETA could proceed to design its satellite system, basing itself on real facts and not on fantasy.

The financial investment required in a telecommunication network is a real fact -- and financial requirements for both the space and terrestrial segments should also be based on facts.

With some effort and cooperation among its members, ASETA should be able to obtain the necessary data on which to base its satellite project. If it is unable to do so, who will? Unreliable data are of no benefit to anyone, and it matters not whether the satellite capacity is leased or bought from INTELSAT, PANAMSAT or a dedicated regional satellite. It will become an expensive "white elephant" in the sky and on earth to have overdimensioned space and terrestrial segments, especially when the overdimensioning could be avoided by doing some consistent and thorough research on equipment available, demand for services, local, national and international traffic, waiting lists, fault repair time, etc. All these are good indicia of what is available and also of what is wanted or needed, country by country, and for the region as a whole.

ASETA, like LACAC has yet to compile reliable statistics on traffic and demand,[30] which could serve as a basis for future supply. As with airlines, knowing what is the flow of traffic (whether of passengers or of calls, telegraph messages, etc.) is important in determining future equipment needs, whether of transponders, switching equipment or the type of aircraft to add to the fleet. This information is also basic for billing purposes -- a major source of foreign currency for both sectors.

LACAC and ASETA are similar in that both organizations are supposed to be studying traffic questions, presumably based on data supplied by the respective official entities in charge. In the case of ASETA, these are the telecommunications entities; in the instance of the airlines, it would be the airlines' and/or civil aviation organization's responsibility. In most of the ANCOM countries both telecommunications and civil aviation are regulated if not owned by the government. Therefore, government officials should have access to or information on the demand and traffic of their sector. If the government entities cannot obtain reliable statistics, -- the question is -- who can?

Both telecommunications and aviation are vital to the development and growth of international trade. Hence, it would be in the interest of the official entities in charge to have accurate data on these sectors, as they have considerable influence on the countries' foreign revenues, and place in the world economy.[31] They also provide the necessary links to development on a domestic level and to the international community.[32] If the statistics on which these "links" are based are unreliable, "the chain is as strong only as its weakest link" (to quote an old adage).

The ASETA members must decide how strong a chain, and of what size, they need. It behooves them, therefore, to get accurate indicators of their past needs and present demand, so that they can make forecasts for the future. Such an assessment of their requirements should be undertaken prior to designing the CONDOR satellite system.

Once ASETA has accurate data on telephony (and mass media) utilization and demand, it would be in a better position to decide on the transponder capacity needed to meet present and future requirements. The 1986 ESCO Report stated that between 1986 and 1992, ten transponders would be sufficient to meet ASETA's needs. It then recommended launching two satellites, each equipped with twelve transponders, so that by year 2000, ASETA would have 24 "required" transponders at its disposal.[33]

On the other hand, by Colombian estimates, two transponders are more than sufficient to meet that country's telecommunications traffic needs.[34] Colombia is the largest of the ANCOM countries, both geographically and in terms of population. Even if demand - and users - grew exponentially, it is doubtful that ASETA will "require" at least twenty four transponders in the next ten years. The only way to ascertain what the requirements are, or will be, is by undertaking a systematic and thorough survey of the telecommunications (including radio, television and informatics) sector.[35] Thus the issue of overcapacity versus actual requirements could be resolved.

In some respects it is more economical to launch a satellite with more transponders (i.e. the difference in launch and insurance costs are probably negligible whether a satellite with 12, rather than 24 transponders is launched). But the difference in potential revenues is substantial: if the "surplus" transponders can be leased or sold, this income could offset some of the investment required. Conversely, if an "overdimensioned" satellite is launched, and no use can be made of its overcapacity, obviously this will create losses to the system's owner(s) and operator(s).

In addition to determining the size of the spacecraft required by its member countries, ASETA must come to a decision on the location of its satellite's "TTCM" station.

All satellite systems require a tracking, telemetry, control and monitoring station (TTCM), whose purpose is to keep track of the satellite, and ensure that the signals are transmitted to and received by the appropriate earth stations. Control over the TTCM station is therefore a fundamental but sticky question, involving not only technical and possibly geographic issues, but more importantly, political questions. Whichever country has control over the TTCM station has virtual control over the satellite as well.

In a region which suffers from perennial political problems and instability, the location of the TTCM becomes crucial, since it is unlikely that the owners/investors of the satellite system would want the "nerve center" of their system -- the TTCM station -- to fall into hostile hands, or be the victim of saboteurs. Even in the ANCOM countries this is a distinct likelihood (if not fear) -- that the satellite will end up being controlled by or from another country. (One reason for wanting to have their own satellite system is to have control over their means of communication, and not have to depend on foreign sources beyond their control). There seems to exist a basic mistrust of other countries among most nations, to which the Andean countries are also susceptible. However, each country among the Andean community no doubt believes it has a politically stable climate, that locating the TTCM station on its territory would be the best solution, since it is the "most reliable" of the group.

Among the ANCOM countries, however, there is another issue which could exacerbate the one of the TTCM's location: namely, the claim to sovereign (or preferential) rights to the geostationary orbit (GSO) made by Colombia and Ecuador.[36] If they claim to have superior rights to the GSO, even if they cannot enforce them in outer space, there is nothing to prevent either country from enforcing its claims by taking over the TTCM station. Such an action would give the country control (if not rights) over the satellite system -- and control (or possession) is "90% of the law." None of the documents on Project CONDOR allude to the GSO claims, nor that these pose a problem in selecting the TTCM site. But whether or not it is overtly discussed, the concern is probably there. (In this respect, in 1986 the Canadian government allegedly offered Canadian territory for the CONDOR's TTCM station, but the offer was not accepted).

Locating the TTCM on "neutral" territory (whether in Canada or another country) would reduce the risk of having that core element fall into hostile hands. The hostility can be both physical (actual physical control), or philosophical (on-going disagreement on the TTCM's location because of divergent policies and/or claims of rights).

In respect to the TTCM's location, if not the design of the entire CONDOR satellite system, technical considerations should prevail over political or philosophical considerations. Telecommunications are concerned not only with technical matters, however, and the underlying political forces must be recognized. It is beyond the scope of this discussion to provide solutions to problems that perhaps have no solution, or which are better addressed through diplomatic channels.

D) POLITICAL-ECONOMIC ISSUES

The choice to have an adequate telecommunications network is an economic as well as a political decision. The telecommunications entity (whether government-owned or privately owned) decides where it will invest its resources and where it allocates the revenues provided by that investment.

In most developing countries, expenditures on or investments in telecommunications are usually a minuscule part of the national budget. In part this is due to the fact that telecommunications are still viewed as a "luxury", which only a few entities (government and corporations) and individuals can afford to have. Thus, in countries with a few large urban centers -- which usually are also the focal point of government and business activities -- the means of telecommunications tend to be concentrated there as well.[37] Telephone network equipment, radio and television stations are congregated in the areas with the most population -- and users of the means of communication. Even earth stations accessing the INTELSAT system are located within a few miles of the capital of the country.

With small budgets set aside for the installation or expansion of telecommunications networks, there is a certain amount of pressure to maximize this investment. Thus, most improvements or installations take place in urban centers, which will produce a higher return on the investment. The development of rural telecommunications becomes secondary.

International lending institutions, such as the World Bank[38] or the Inter-American Development Bank also have set aside a small percentage of their total budget for telecommunications. The

World Bank's loans to telecommunications projects world-wide amounted to less than 2% of the funds that institution disbursed in the last decade.[39] Telecommunications loans and credits to the Andean Community countries, from 1962 to 1986, amount to U.S. $187 million, of which Colombia received US $150 million, and Venezuela the remaining US $37 million.[40] Bolivia, Ecuador and Peru have yet to receive any funds for their telecommunications projects from this institution.

The Inter-American Bank's loans to the ANCOM countries, from 1967 through 1982, were in the amount of US $39.6 million. Colombia received US $29 million for the construction of public telephones in 2,200 rural communities, while Ecuador received US $9.6 million for the construction of public telephones in rural communities. The remainder was given to Peru, following an earthquake.[41]

The Corporacion Andina de Fomento (CAF) (the Andean Development Corporation) disbursed over US $21 million in loans to transport and communications in 1984.[42] (No breakdown is given as to how much went to telecommunications).

If the multi-national agencies assign such a low priority to telecommunications loans (as evidenced by their disbursements in the past twenty years), it is no wonder that the borrowing countries also rank telecommunications low on their investment priority list. In contrast, the Maitland Commission Report, "The Missing Link", states that if the developing countries are to improve or expand their telecommunication networks as the Commission recommended, the total investment required would be close to US $12 billion a year![43]

Admittedly, the developing countries receive funds from sources other than the multi-lateral banks or agencies for telecommunications development. Equipment manufacturers and suppliers often grant the purchasing country very favorable purchasing and credit terms.[44]

However, in countries with mounting foreign debts, and the increased reluctance of commercial banks to make loans to such nations,[45] the issue of investing in telecommunications becomes a political one, and not just an economic problem.

For the ANCOM countries, this issue becomes critical, especially in view of their contemplating an investment of well over US $210 million in the space segment of their satellite system. To put the question bluntly, where are they going to get the money?

According to the ESCO Report,[46] and newspaper accounts, Colombia, Peru and Venezuela would contribute 28%, or US $58 million each, while Bolivia and Ecuador would contribute 8%, or US $16.8 million each.[47] Unless the World Bank suddenly reverses its policies (it makes no loans to regional consortia), and unless the Inter-American Bank increases (or revives) its loans to the telecommunications sector (it has not made any loan for telecommunications to the ANCOM countries since 1982), these funding sources cannot be counted on.

Whether the countries themselves are able to generate these funds from their existing telecommunications systems is doubtful. International telecommunications are the largest producers of foreign revenue. But many international calls will be required to generate the millions of dollars that will have to be invested in the satellite system.

Thus, ASETA's member must make some difficult decisions regarding the financing of Project CONDOR. Should the government alone be the main investor, or could private corporations and parties be invited to participate, so long as they are nationals of the countries involved?[48] If grants or "soft credit terms" are accepted from the manufacturers of satellites and/or earth stations, what will be the long-term consequences of being heavily indebted to foreign corporations? Will these want to play a role in the operation and management of the satellite system?[49]

Another set of issues arises ("the other side of the coin"): If these countries decide not to invest in the expansion and improvement of their telecommunications networks (both national and regional), what will be the long-term consequences of this policy?

The gap between the "haves" to the North and the "have nots" to the South is increasing, rather than diminishing.[50] The growing gap is due, in part, to the recognition in the developed countries of the importance of telecommunications to their continued growth and progress. The developing countries realize that telecommunications are vital to their survival, let alone development, but they allocate few resources to this sector. The benefits of an investment in telecommunications are not always tangible or quantifiable, and few entities are keen on investing in something as intangible and invisible as a satellite 23,000 miles away.

That the ASETA countries must develop their national and regional telecommunications system is a "given" reality. The question, then, is how to achieve this goal without mortgaging themselves for the next decades?

One alternative is not to purchase their own satellite. The Colombian press stated that by investing US $58 million as its share in CONDOR, Colombia would "save" the cost of renting one transponder from INTELSAT - US $850,000 a year.[51] It is difficult to reach this same conclusion by using simple mathematics: $58 million could lease more than one transponder for 58 years (assuming prices remain constant). This does not represent any kind of "savings."

Another alternative is to continue leasing transponders, or purchasing them from either INTELSAT or PANAMSAT.[52] These would be for the provision of domestic service only, and would not achieve one goal of the ANCOM countries: to establish a regional telecommunications system. Under this alternative, the status quo (at least in respect to the space segment) would prevail -- the ANCOM countries would still be dependent on external sources for their telecommunications. However, the countries would gain experience in managing a satellite system that could eventually provide regional telecommunication services.[53]

A third alternative is to proceed with the design, development and construction of the spacecraft CONDOR, and hope that all the problems that have to be resolved will be answered between "now" and the time it is launched (1992).

It is submitted that this last alternative is the least viable or realistic of the present choices. In looking back at all the previous feasibility studies on Project CONDOR and its predecessors -- such as the educational television via satellite -- it becomes obvious that since its inception, the idea of a regional satellite system for Latin America or for only the ANCOM countries, has been plagued with the same problems. These are economic, political, social and legal in nature, as has been discussed in the preceding chapters.

Most of the previous studies have considered only the "technical and economic" feasibility of the project, concluding that it is feasible. From a purely technical perspective, the studies are correct: the technology exists to solve most if not all difficulties of a purely technical or engineering nature that may arise out of a regional satellite system.

In regard to the economic viability of Project CONDOR, if only the intangible economic benefits are taken into consideration, the project would be or is viable. However, none of the previous studies has discussed how the project would be financed.

The ESCO Report, and even the ITU/UNESCO/UNDP Report, speak of investing hundreds of millions of dollars in the space segment alone of the regional satellite system -- but they do not say from where those funds would (or could) be obtained.[54] This is not an inconsequential consideration, since the amount of money required for both the terrestrial and space segments represents an investments of at least US $500 million -- a half billion dollars.

Hence, it would seem to be financially more viable to continue leasing transponders from INTELSAT, or purchasing them from either that organization or from PANAMSAT.[55] Comparatively speaking, the transponders are inexpensive (less than US $1 million for an annual lease, and probably about US $6 million to purchase a transponder).

The continued use of the INTELSAT system would also require less investment in the terrestrial segment. A new infrastructure, compatible with either PANAMSAT's or ASETA's satellite would have to be designed and developed. Those funds could be used more advantageously, perhaps, in the further expansion of the existing infrastructure.

Each country, if they reach such an agreement, could set aside some of the revenues produced by their present telecommunications network to finance the installation and expansion of the regional satellite system.

Furthermore, bonds, or other enticing investment instruments could be marketed to aid in financing CONDOR.

In brief, there are methods of generating funds domestically which could be studied. If the total amount involved is a less formidable figure than hundreds of millions of dollars, (i.e., a few million for transponder purchases), it is likely that nationals will invest. Self-generated, or at least locally-generated funds would have the added benefit of reduced dependence on outside funding sources.

There are many ways of obtaining the necessary financing, from internal and external sources. However, the principal ingredient for the success of such an endeavor is the political will to achieve certain goals, such as investing in telecommunications to further the development of the country.

CONCLUSION

The economic and technical issues related to the feasibility of a satellite system can be resolved fairly easily. Obtaining or generating the funds to finance the network is also possible, with some creative thinking and marketing techniques.

These issues become minor ones compared to those presented by the legal and political questions involved in a multi-national satellite communications project such as CONDOR.

The history of South America, and of the ANCOM countries, is replete with instances where bi-national cooperative efforts have been stymied, bogged down in protracted negotiations or hostilities.[56]

Some of the problems have been present for centuries; they are not going to be resolved within the next four years. The lack of trust between countries and people, what is known in Colombia as "la malicia indigena" (the indigenous or native malice), all have to be surmounted -- if that is possible -- to ensure Project CONDOR's success.

As to legalisms -- and legal problems -- the ASETA countries have yet to reach any degree of harmony among themselves, particularly in regard to their ratification of international treaties pertaining to air space, outer space activities or telecommunication satellites.[57] Their accession to (if not ratification of) the Outer Space Treaty and Liability Convention would allow them to go forth with Project CONDOR with a common legal position or base. A united legal front will be essential when they negotiate for the spacecraft, launch and insurance, and when they decide where to locate the headquarters of the operating entity, and of the tracking station (TTCM).

The likelihood of the ANCOM countries adopting a common legal (let alone political) position would be a rare occurrence, however. It would require that Ecuador and Colombia "retract", if not disclaim their position in regard to having preferential rights to the geostationary orbit. This is now an issue of international significance, debated in many fora, and one that will not disappear or be resolved in the immediate future. Thus, even though the Equatorial countries claims to preferential rights over the GSO cannot be disregarded, these claims should not become a major impediment to the possibility of a regional satellite system for the ANCOM countries. These countries must address this question, as well as the many other legal issues raised by their divergent positions vis a vis the ITU, UNCOPUOS, and even INTELSAT.

Project CONDOR emerged form the regional integration efforts sparked by the 1969 Cartagena Agreement. It was also a product of the existing technology -- satellite communication -- and the promise it held for developing and integrating countries and regions into the global mainstream.

These promises and goals are still feasible. From a technical perspective, Project CONDOR is feasible. Whether it is economically (and/or financially) viable requires further analysis and study. The major hurdles yet to be surmounted are the legal and political issues. Whether these have any final resolution is open to question. However, differences can be set aside, if the political will exists to do so, in order to bring to fruition projects or ideas that have been long in the making.

Project CONDOR still holds the same promises for improving and developing communications and life in general in the Andean Community that it did at its inception. But those promises must be tempered with realism. One reality is that solutions to many issues have yet to be found before CONDOR flies.

The answer to whether Project CONDOR is feasible depends on the political will and determination of the five countries involved: Bolivia, Colombia, Ecuador, Peru and Venezuela. The CONDOR satellite system may yet become a reality for the Andean Community.

1 Morawetz, <u>supra</u>, Chapter 1, note 6 provides some statistics comparing the cost of transporting goods in the Andean Community with the costs in Europe. Bad roads and a weak infrastructure lead to higher costs in the ANCOM.

2 "The Missing Link", Report on the Independent Commission for World Wide Telecommunications Development. (The Maitland Commission Report). Geneva, ITU (1984), pp. 57-63. [Cited hereinafter as The Missing Link].

3 <u>See</u>, <u>supra</u>, Chapter 3 for an analysis of these feasibility studies.

4 The Inter-American Development Bank, Washington, D.C., has loaned Colombia and Ecuador nearly US $40 million for their rural telecommunications programs. A second loan to Colombia for this purpose was studied and recommended, but not granted. (Information obtained from a one-page mimeograph sheet, Inter-American Development Bank).

5 Decree 541, January 16, 1959. Gaceta Oficial, January 17, 1959, Venezuela.

6 Diario Oficial, May 18, 1976, Colombia (No decree number given.) (Information obtained from Library of Congress' compilation of Latin American Legislation, Washington, D.C.).

7 Library of Congress compilation of Latin American Legislation, Washington, D.C.

8 <u>See</u>, AT&T, "The World's Telephones", which gives Tables with data on the number of cities with over 250,000 telephones, and telephones in the world's principal cities (pp. 89 and ff.) (1983 Edition). This publication gives the following data for the ANCOM capitals:

CITY/COUNTRY	CITY/POPULATON	TEL. IN CITY/ COUNTRY
La Paz, Bolivia	890,000	83,049/204,747
Bogota, Colombia	4,250,000	581,146/2,547,222
Quito, Ecuador	[No Data Reported]	

(footnote continued)

(footnote continued from previous page)

Lima, Peru	4,908,664	379,120/519,703
Caracas/Venezuela	3,141,000	*482,807/1,021,136
		*(main lines)

9 See, supra, Chapter 3, pp. 3.21 and ff; pp. 3.44 & ff.

10 ASETA, Articles of Incorporation, Chapter III.

11 "Transborder" services have been authorized by both the Federal Communications Commission (USA) and by INTELSAT. See, supra, Chapter 8, pp. 8.18 & ff.

12 See, supra, Chapter 5, for a discussion of these issues.

13 International Telecommunication Union, Radio Regulation 1-1; INTELSAT Agreement, Art. I(j).

14 INTELSAT Agreement, Art. I(k).

15 EUTELSAT Convention and Operating Agreement, Art. I(k).

16 Ibid., Art. II(b); INTELSAT Agreement, Art. II(b).

17 ASETA, Articles of Incorporation, Chapter II.

18 See, supra, Chapter 2, note 12 and accompanying text.

19 See, supra, Chapter 3, pp. 3.16 & ff.

20 EL TIEMPO, Bogota, Colombia, July 8, 1987.

21 ASETA's membership is limited to providers of international telephony services. See, supra, note 17.

22 See, supra, Chapter 7, wherein the technical merits of C-Band and Ku Band transmissions are discussed.

23 "The World's Telephones", A Statistical

(footnote continued)

(footnote continued from previous page) Compilation as of January 1983. AT&T (1984). (No city of publication given).

24 Yearbook of Common Carrier Telecommunication Statistics, 12th Edition (1974-1983) International Telecommunication Union. Geneva, 1985.

25 ASETA, Document 105, October 1983, Sistema Regional Andino de Comunicaciones por Satelite con Capacidad INTELSAT Compartida: Aspectos Tecnico-Economicos. Table No. A-1 [Subscribers and International Telephone Traffic in the ANCOM region]. These same statistics were provided by ASETA to INTELSAT, and also appear in The Transponder Lease Report (1984).

26 See, The World's Telephones, supra, note 23.

27 See, ITU Yearbook, supra, note 24.

28 European Satellite Consulting Organization Report, September 1986. (Unpaginated).

29 See, supra, Chapter 3; CAL/saTEL had recommended over 109 earth stations for Bolivia. (Original Executive Summary unpaginated).

30 Latin American Civil Aviation Commission, supra, Chapter 2, fn. 23, 24. ASETA, Articles of Incorporation, Chapter II.

31 LACAC, supra, Chapter 2, fn. 24. Passenger revenue miles, cargo loads, telephone call pulses are important factors in establishing tariffs, and in negotiating bilateral agreements among airlines and telecommunications entities respectively.

32 Landing rights, whether of aircraft or of submarine cables, are privileges that allow for the development of international commerce and traffic. (See, Chapter 2, supra, for a discussion of the similarities between airlines and telecommunications entities).

33 ESCO Report, supra, note 28. Figures 1-3 (unpaginated). See, supra, Chapter 3, fn. 70 and accompanying text.

34 TELECOM-Colombia, verbal communication with this author.

35 EL TIEMPO, Bogota, Colombia July 8, 1987. This report on Project CONDOR stated that a final decision on the satellite was being postponed, since ASETA had to update its statistics on demand and traffic.

36 See, supra, Chapter 6, for a discussion of the Equatorial countries' claims to preferential rights to the geostationary orbit. The Bogota Declaration of 1976 states the basis for this position.

37. See The World's Telephones, supra, note 8.

38 The World Bank's official name is the International Bank for Reconstruction and Development.

39 The Missing Link, supra, note 2, p. 121.

40 World Bank, Telecommunications Loans and Credits, December 1986. (One page mimeograph sheet).

41 Inter-American Development Bank, supra, note 4.

42 The Latin American Integration Process in 1984, p. 101. (Publication of the Inter-American Development Bank Washington, D.C. and the Institute for Latin American Integration, Buenos Aires. (No publication date given).

43 The Missing Link, supra, note 2, p. 57.

44 Ibid.

45 Washington Post, Washington, D.C., February 14, 1987, p. K-2.

46 See, supra, Chapter 3, pp. 3.44 & ff.

47 EL TIEMPO, Bogota, Colombia, November 14, 1987, p. 8-A.

48 In this respect, the conditions for investment set forth in Decision 24 of the Cartagena Agreement - as well as in other Decisions of the Agreement should be reviewed. See, supra, Chapter 2, fn. 14, 15, 16 and accompanying text.

49 One purpose of nationalizing both the airlines and telecommunications entities in the early part of this century was to have these sectors under national control, and not in the hands of foreign corporations. The trend to "privatize" telecommunications, especially if the private party were a foreign entity, could hardly be considered "progress" from this perspective.

50 In this respect see The Missing Link, supra, note 2. The MacBride Commission Report, also discusses the growing chasm between the poor and the affluent countries, due to poor communication links. Many Voices, One World, Report by the International Commission for the Study of Communication Problems. Kogan Page, London/ UNIPUB, New York/UNESCO, Paris (1980).

51 EL TIEMPO, Bogota, Colombia, November 14, 1987, p. 8-A.

52 The INTELSAT Transponder Lease Report, supra, Chapter 3, note 56, stated that the cost of leasing 6 transponders a year would cost the leasing countries approximately US $1 million per year per transponder. See, also the new Planned Domestic Services (PDS) offered by INTELSAT, supra, Chapter 8. What PDS and PANAMSAT's transponders will cost has yet to be firmly established.

53 SEE INTELSAT Transponder Lease Report, supra, Chapter 3, note 56.

54 See, supra, Chapter 3.

55 See, supra, note 52, and Chapter 8 in particular.

56 Some aspects of this "heritage" were described in Chapter 1, supra.

57 Chapters 5-7 dealt with some of the legal issues yet to be resolved: ratification of copyright conventions, of the Outer Space Treaty and Liability Convention as well as signing the International Telecommunication Convention (Nairobi, 1982), and even the Warsaw Convention and Protocols. These issues will keep the ANCOM members busy for quite a while.

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