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BY THE U.S. GENERAL ACCOUNTING OFFICE

**Report To The Subcommittee On Commerce,  
Justice, State And The Judiciary,  
Senate Committee On Appropriations**

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**U.S. Objectives Generally Achieved At  
Broadcasting Satellite International Conference--  
Improvements Can Help In Future Conferences**

The United States and 24 other nations met in Geneva, Switzerland, during June and July 1983 to plan the implementation of broadcasting satellite service for the Western Hemisphere. Broadcasting satellites transmit television programs and other information services from earth orbit to home or office antennas. At the request of the Senate Appropriations Subcommittee on Commerce, Justice, State and the Judiciary, GAO reviewed conference results as compared to established conference objectives and examined the interagency coordination of U.S. participation in this international conference.

GAO found that the United States basically achieved its two most important conference objectives: adopting a technically and procedurally flexible plan for broadcasting satellite service and obtaining a sufficient allocation of satellite orbit slots and frequencies to meet domestic needs. The U.S. was unable, however, to obtain agreement on adopting a maximum signal power level for satellites. GAO also found that the Department of State could improve its preparation, internal coordination, and administrative support for future international conferences and recommends actions to the Secretary of State to improve its international telecommunications activities.



029770



**GAO/RCED-84-157  
AUGUST 2, 1984**

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UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

RESOURCES COMMUNITY  
AND ECONOMIC DEVELOPMENT  
DIVISION

B-215654

The Honorable Paul Laxalt, Chairman  
Subcommittee on Commerce, Justice, State  
and the Judiciary  
Committee on Appropriations  
United States Senate

Dear Mr. Chairman:

As you requested on May 23, 1983, we have reviewed conference results and coordination among U.S. participants in the 1983 Regional Administrative Radio Conference. This report makes recommendations to the Secretary of State for improving coordination and preparations for future international telecommunications conferences.

We are sending copies of this report to the Secretary of State; Secretary of Commerce; Chairman, Federal Communications Commission; and Director, Office of Management and Budget. We are also sending copies to interested congressional parties and will make copies available to others on request.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "J. Dexter Peach".

J. Dexter Peach  
Director



GENERAL ACCOUNTING OFFICE REPORT  
TO THE SUBCOMMITTEE ON COMMERCE,  
JUSTICE, STATE AND THE JUDICIARY,  
SENATE COMMITTEE ON APPROPRIATIONS

U.S. OBJECTIVES GENERALLY  
ACHIEVED AT BROADCASTING  
SATELLITE INTERNATIONAL CON-  
FERENCE--IMPROVEMENTS CAN  
HELP IN FUTURE CONFERENCES

D I G E S T

The United States and 24 other nations met in June and July of 1983 at a Regional Administrative Radio Conference held by the International Telecommunication Union, a specialized agency of the United Nations. They convened to plan the implementation of broadcasting satellite service for the Western Hemisphere and agreed on the technical standards and procedures needed to establish this new medium for delivering television programming directly from high power satellites to homes or offices equipped with small, relatively inexpensive receivers.

At the request of the Chairman, Subcommittee on Commerce, Justice, State and the Judiciary, Senate Committee on Appropriations, GAO reviewed conference results and coordination among U.S. participants--the Federal Communications Commission (FCC), Department of State, the National Telecommunications and Information Administration (NTIA) in the Commerce Department, and the private sector. (See p. 6.)

GAO found that the United States achieved its two major conference objectives--reaching agreement on a flexible plan for implementing broadcasting satellite service and obtaining adequate orbit and frequency capacity to meet domestic needs--and compromised to an extent on some other objectives. The technical expertise of and computer support for the U.S. delegation at the conference were major contributors to the U.S. success. GAO points out areas, however, where additional State Department conference preparation and greater attention to administrative matters could enhance U.S. participation in future conferences.

U.S. ACHIEVED MAJOR OBJECTIVES WHILE  
MAKING SOME COMPROMISES AT CONFERENCE

The United States achieved one of its two major objectives by convincing other nations to support a broadcasting satellite service plan with significant flexibility in technical standards and procedures. The plan represents

a break with the traditional U.S. approach, which favored first-come, first-served access to orbit slots and frequencies.

Consistent with the second major U.S. objective, the conference-approved plan also assigns specific orbit slots and frequencies to each nation, depending on its stated needs. Although the U.S. was assigned its eight requested orbital slots for broadcasting satellites, the industry considers three of these slots economically or technically unusable at present. Some firms interested in operating the service estimated, however, that the other five slots are sufficient to meet present domestic needs. Each of the five desirable orbit locations has the frequency capacity for satellites delivering 32 channels of conventional television to half of the continental United States.

The United States was not successful in reaching agreement with the other nations on a desired higher maximum signal power level for the broadcasting satellites.

Officials from ten U.S. licensees and applicants for the broadcasting satellite service believe the overall conference result was favorable for the United States. However, a majority qualified their positive comments in regard to conference results concerning the satellite power level and/or orbit slot locations. Most officials said that conference results would allow their firms to move forward with the first phase of the new direct-to-home broadcasting service. (See pp. 8-14.)

#### THREE MAJOR FACTORS CONTRIBUTE TO U.S. SUCCESS

Delegates and government and industry observers at the conference said the United States was able to adequately protect most of its interests at the 1983 conference because of the quality of technical preparations, the availability of computer analysis during the conference, and the competence of a large U.S. delegation.

Technical preparations conducted by FCC, NTIA, the State Department, and a private sector advisory committee resulted in solid support for the orbit slot and frequency assignments the United States proposed at the conference. Preparations included detailed study of needed

technical standards and planning alternatives to propose at preconference meetings of the involved nations and at the conference itself.

The availability of computer terminals enabled the U.S. delegates to analyze technical proposals during the conference. The delegation had 34 private-sector and government members, many of whom were top U.S. experts on the broadcasting satellite service. (See pp. 14-18.)

MORE STATE DEPARTMENT INVOLVEMENT  
COULD HELP FUTURE CONFERENCES

More and earlier State Department advance work to anticipate the political positions of other nations and help negotiate their support for U.S. views could have aided the technically oriented delegation. For example, the support of one nation for the U.S. position on the power level was lost because the delegation did not use the proper proxy voting procedures. (See pp. 25-26.)

A lack of State Department attention to conference administrative matters resulted in required conflict-of-interest reviews of private-sector delegates not being made before the conference. In addition, poor coordination within the Department caused a last-minute change in negotiation-and-signature authority given to the delegation. Uncertainty about their authority resulted in concern by and confusion for the delegation leadership throughout the conference. (See pp. 26-29.)

Final preparations for the broadcasting satellite conference coincided with the establishment of the Office of the Coordinator for International Communication and Information Policy in the State Department. GAO found that the ability of this office to coordinate the conference effectively was hampered, at least initially, by the lack of interagency and intra-agency understanding of the coordinator's role. (See pp. 20-23.)

Overall, these problems had minimal impact on the outcome of the 1983 conference, but similar difficulties before or during future conferences--with broader issues and more nations involved--could affect the United States' ability to meet its objectives.

RECOMMENDATION TO THE  
SECRETARY OF STATE

GAO recommends that the Secretary of State improve the coordination of its participation in international telecommunications conferences and assure that delegations have the benefit of Department advice and involvement by (1) more clearly defining and delineating the authority and responsibility of the coordinator for international communication and information policy and (2) involving Department political experts early in conference preparation and as delegation members to help negotiate and anticipate support for U.S. positions. (See p. 31.)

VIEWS OF PROGRAM OFFICIALS

GAO met with officials from FCC, State, and Commerce and received their views on the factual contents of the report. Because State said that it had recently added both foreign service and civil service employees to the coordinator's staff, GAO deleted the proposal contained in its draft report that the Secretary consider assigning staff to the coordinator's office to develop technical expertise and maintain continuity. GAO made other revisions, which are explained in the report. (See pp. 7, 19, 31.)

## C o n t e n t s

	<u>Page</u>	
DIGEST	i	
CHAPTER		
1	BROADCASTING SATELLITE SERVICE AND THE 1983 INTERNATIONAL CONFERENCE	1
	The new broadcasting satellite service	1
	The International Telecommunication Union	2
	Federal policymaking in international telecommunications	5
	Objectives, scope, and methodology	6
2	UNITED STATES FULFILLS MOST OBJECTIVES AT BROADCASTING SATELLITE CONFERENCE	8
	How the United States fared at the conference	8
	U.S. achievements at conference due to several positive factors	14
	Conclusions	18
	Views of program officials	19
3	STATE DEPARTMENT CAN IMPROVE PREPARATION AND PARTICIPATION IN FUTURE CONFERENCES	20
	The new coordinator's office and its impact on the RARC-83 negotiations	20
	Greater State Department involvement can strengthen U.S. position at conferences	24
	Conclusions	31
	Recommendation to the Secretary of State	31
	Views of program officials	31
APPENDIX		
I	LIST OF PARTICIPATING NATIONS	32
	<u>ILLUSTRATIONS</u>	
	Satellite systems	3
	RARC-83 objectives/results comparison	9
	<u>ABBREVIATIONS</u>	
BSS	broadcasting satellite service	
DBS	direct broadcast satellite	
FCC	Federal Communications Commission	
GAO	General Accounting Office	
ITU	International Telecommunication Union	
NTIA	National Telecommunications and Information Administration	
RARC	Regional Administrative Radio Conference	
WARC	World Administrative Radio Conference	



## CHAPTER 1

### BROADCASTING SATELLITE SERVICE AND

#### THE 1983 INTERNATIONAL CONFERENCE

During the summer of 1983 the United States and 24 other nations met in Geneva, Switzerland, to decide on technical standards and plan for the advent of the new broadcasting satellite service (BSS)<sup>1</sup> in the Western Hemisphere. (See list of nations in app. I.) This conference was convened by the International Telecommunication Union (ITU), a specialized agency of the United Nations. On May 23, 1983, the Chairman of the Subcommittee on Commerce, Justice, State and the Judiciary, Senate Committee on Appropriations, requested that we examine the coordination of involved federal agencies and review the conference results.

This report on the results of last summer's Regional Administrative Radio Conference (RARC-83) on BSS follows our earlier report reviewing U.S. preparatory efforts for the conference.<sup>2</sup> In that report we noted that preparations for technical issues to be considered at the conference were progressing well but that some other preparations were not as advanced. For example, confirmation of the U.S. delegation was delayed and some federal officials were concerned about the lack of funding for preparations. The report stated that there was little formal advance planning among the responsible agencies as to who would fund important activities such as computer support and meetings with other nations. The report found that when these activities were funded, arrangements were usually made on an "ad hoc," last-minute basis. In addition, we reported that some participants believed that additional bilateral and multilateral meetings with other nations should have been held to discuss conference issues.

#### THE NEW BROADCASTING SATELLITE SERVICE

A broadcasting satellite will transmit a high power signal that can be received by small, relatively inexpensive, dish-shaped antennas measuring approximately 2.5 feet in diameter. These antennas, mounted on rooftops or other locations to afford unobstructed views of the satellites, will enable homes and offices to receive television programs and information services directly from satellites orbiting in space.

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<sup>1</sup>The Federal Communications Commission (FCC) uses the term "broadcasting satellite service" in reference to international frequency allocation matters, and the term "direct broadcast satellite service" (DBS) when discussing domestic policy. Since the two acronyms refer to the same service, we will, for simplicity, use BSS exclusively in this report.

<sup>2</sup>U.S. Preparations for an International Conference on Broadcast Satellites (GAO/RCED-83-121, Mar. 4, 1983).

Conventional communications satellites have been carrying commercial television and other information for American business since 1974. The television programs were intended primarily for reception by earth-bound distribution hubs such as broadcast stations and cable television systems. Reception of these lower-power, conventional "fixed" satellites has typically required dish antenna receivers up to 20 feet wide and costing thousands of dollars. Only a small number of consumers with such expensive "backyard earth stations" today are able to receive programs directly from these conventional satellites. In 1982 the FCC authorized the use of "broadcasting" satellites to transmit a signal much more powerful than current communications satellites that will allow use of inexpensive dish-antenna receivers at homes. See figure 1 on the next page to contrast existing communications satellite systems with those planned for broadcasting satellites.

For inhabitants of many rural areas, BSS may offer the first inexpensive opportunity to receive a television signal of any kind. Other areas will receive a wider variety of program material where currently there is little choice. In addition to direct reception at homes and offices, BSS signals may also be received by commercial broadcast, cable, low power, and master antenna television systems, in the same way that signals from conventional satellites are received today and relayed to system viewers. Because BSS signals can be received and used in the same way as conventional satellites, they may complement existing sources of television programming, rather than only compete for their audiences.

Even though full-fledged BSS is not serving the United States today, eight companies have been authorized to construct the satellite systems. The results of RARC-83 enabled the companies to apply to FCC for modification of their construction permits to comply with the international agreement. At the time of the conference three other applications were pending and four more firms filed applications as of January 1984. An early BSS operator, using satellites with lower power than anticipated for future systems, is providing five channels of programming in some parts of the country. More powerful BSS systems are to be launched beginning in early 1986, according to the latest announced plans of licensed firms.

#### THE INTERNATIONAL TELECOMMUNICATION UNION

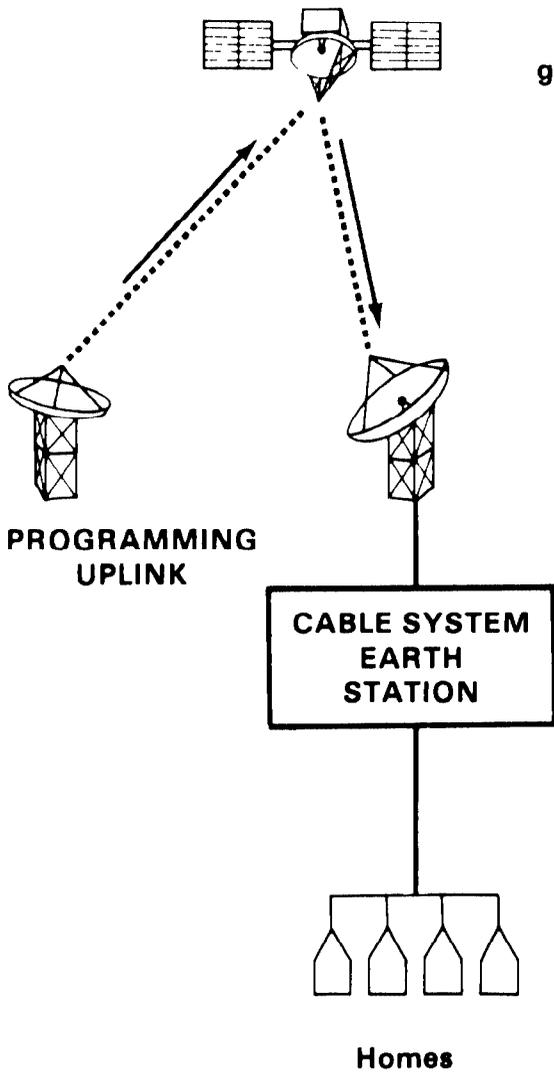
The United States is a member of the International Telecommunication Union (ITU), a specialized United Nations agency that is the primary world forum for cooperation and coordination in telecommunications.

Figure 1

**SATELLITE SYSTEMS**

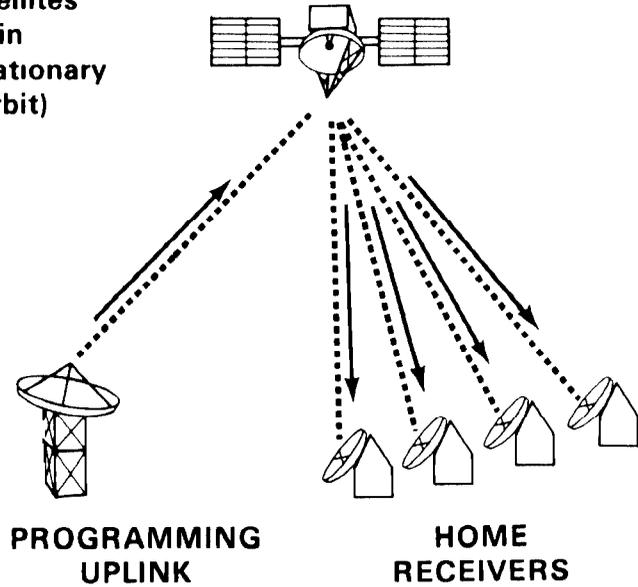
**EXISTING FIXED COMMUNICATIONS SATELLITE SYSTEM**

Low Power Signal



**PLANNED BROADCASTING SATELLITE SYSTEM**

High Power Signal



The ITU is responsible for managing the electromagnetic spectrum<sup>3</sup> and developing the rules by which nations can use this limited resource with minimal interference. The ITU was formed in 1932 by the merger of the International Telegraph Union (established in 1865) and the signatories of the International Radiotelegraph Convention. ITU became a United Nations agency in 1947. ITU's 159 members are divided into three regions--region 1: Europe, Africa, and the Soviet Union; region 2: North and South America; and region 3: the remainder of Asia, Australia, and the Pacific Islands.

The electromagnetic spectrum and the geostationary orbit<sup>4</sup> are the two critical finite resources in international telecommunications. The demand for global communications is increasing, as is the number of satellites scheduled for launching. More nations, particularly emerging Third World nations, are competing for available resources, as are a variety of new services, such as BSS. Although it has succeeded in avoiding serious problems in the use of radio frequencies thus far, the ITU is under considerable stress as the result of sharply increased Third World nations' demands for communications services such as shortwave broadcasting frequencies and satellite communication links on some routes.

Decisions at ITU conferences are increasingly made for political as well as technical reasons. As with most United Nations agencies, the ITU operates on the principle of one country/one vote, and most decisions have been made by consensus. In recent years, however, the controversy over methods for allocating the spectrum and the relative equity of differing approaches has intensified. The problem centers on whether spectrum and orbit assignments should be made on a first-come, first-served basis or

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<sup>3</sup>The electromagnetic spectrum is light and radio waves. These waves transmit energy resulting from charged particles undergoing acceleration (electric current). This energy creates magnetic fields that travel through space with a constant speed ( $2.998 \times 10^8$  meters per second) and which may be received and converted to an analogous electric current. A frequency or channel is a portion of the spectrum having a defined number of cycles per second.

<sup>4</sup>The geostationary orbit is an orbital path in the plane of the earth's equator in which a satellite can be placed and remain fixed relative to a given point on earth. Most communications satellites operate in this orbit, also called geosynchronous orbit, approximately 22,300 miles from earth.

whether advance planning<sup>5</sup> should be used for making assignments. The United States and other developed nations traditionally favor the first approach, contending that spectrum and orbit assignments should be made in terms of a country's current ability to use them. Those favoring the advance planning approach maintain that the less technologically developed nations must be assured equitable access to both the spectrum and the geostationary orbit and that unless allotments are rationed, latecomers will not have access to their share of these resources when they need them.

The United States has recognized the need for planning some international telecommunications services but has opposed detailed advance plans for such services as communications satellites. In 1977 ITU nations met to plan BSS at a World Administrative Radio Conference (WARC). The conference adopted a detailed plan for regions 1 and 3, but the United States succeeded in convincing the other nations at the conference to postpone detailed planning for service in the Western Hemisphere until a later date. The plan adopted for regions 1 and 3 (Africa, Asia, Australia, Europe, and the Pacific) assigned geostationary orbit slots and frequencies averaging four television channels per nation in region 3 and five channels per nation in region 1. Since the assignments were made without regard to each country's actual needs, relatively large countries such as West Germany and France were given the same number of channels as were the very small nations of Monaco and Luxembourg. The ITU Administrative Council later set the dates of June 13 to July 17, 1983 for the region 2 conference to plan BSS in the Western Hemisphere.

#### FEDERAL POLICYMAKING IN INTERNATIONAL TELECOMMUNICATIONS

In the United States, authority for international telecommunications and information policy and participation in ITU conferences is divided among departments and agencies having different perspectives and responsibilities. The Department of Commerce's National Telecommunications and Information Administration (NTIA) develops and presents executive branch views on telecommunications

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<sup>5</sup>"First-come, first-served" is a term commonly used to refer to "a posteriori" assignment of frequencies and orbital slots as they are needed while "advance" planning refers to "a priori" assignments of those resources before they are actually needed.

Although the first-come, first-served characterization is accurate, officials involved in international negotiations have said it should not be taken to mean that nations not first in line are not served nor that the U.S. has been insensitive to all nations' need for reasonable access to orbit/frequency resources. They said the present "a posteriori" system for other services does require advance notice of the nation's orbit/frequency need, coordination with other nations, and publication of the assignment, all through the ITU.

and information policy and manages the government utilization of the spectrum. The Department of State incorporates the policies into U.S. foreign policy in general, and consults with other governments on U.S. policies. State also accredits delegations and oversees their actual participation in international conferences. The FCC plays a major role in policy development in its oversight and regulation of the domestic and the U.S. international communications industry. The determination of which agency had the lead role in preparations depended on programmatic considerations. For RARC-83 FCC was in the lead because BSS is a domestic service operated by private industry.

The private sector, as a developer of new technologies and provider of telecommunications systems and services, also plays a prominent role in policymaking through its participation on committees, advisory groups and delegations. Other agencies--the Department of Defense, Department of Justice, U.S. Information Agency, U.S. Agency for International Development, Department of the Treasury, Office of Management and Budget, and the U.S. Trade Representative--all have roles in international telecommunications and information policy, but their involvement in the 1983 regional conference on BSS was minor. (See further discussion of the federal policymaking structure in ch. 3.)

#### OBJECTIVES, SCOPE, AND METHODOLOGY

We sought in this review to examine coordination among agencies during final U.S. preparations and during conference negotiations to determine how preparation or coordination might have affected the achievement of conference objectives. We also assessed the technical results of the conference in light of the U.S. preconference objectives, and examined how the results affected the BSS service conditionally permitted by FCC before the conference.

Our work was done primarily at the Washington, D.C., headquarters of FCC, NTIA, and the Department of State. We interviewed agency officials and reviewed agency documentation of the conference and preparations and related legislation. In addition we interviewed various private sector officials involved in broadcasting satellite service.

To examine coordination among agencies during preparation for and participation in the conference, we interviewed officials from each involved agency and observers from the private sector on how responsibilities were divided and carried out, and reviewed documents relating to coordination and communication between agencies. We analyzed conference documents, including cable traffic between the delegation in Geneva and the home team in Washington, D.C., and the position papers and supporting materials developed at State, FCC, and NTIA during preparations.

To assess the technical results in light of the U.S. preconference objectives, we gathered and reviewed documentation of the technical standard-setting for the conference and reports on

the results. We also interviewed the key officials involved, many of whom also served on the delegation. Interviews with officials of 10 U.S. BSS licensees and applicants also aided this assessment and indicated the impact of the conference results on the conditional licenses FCC granted before the conference. We compared conference results to the preconference objectives, but we did not evaluate the reasonableness of the conference objectives.

Our work was conducted from July through December 1983. With the exception of not obtaining official agency comments because the requesting subcommittee asked that the report be expedited, our review was performed in accordance with generally accepted government auditing standards. In lieu of official comments, we met with program officials of the three agencies and received their views on the factual content of the report. We incorporated these views in the report as appropriate and have summarized significant views of these officials at the end of chapters 2 and 3 of the report.

## CHAPTER 2

### UNITED STATES FULFILLS MOST OBJECTIVES

#### AT BROADCASTING SATELLITE CONFERENCE

The U.S. delegation at the RARC-83 conference fulfilled its major preconference objectives of obtaining adequate geostationary orbit and frequency capacity and providing for procedural/technical flexibility and minimal coordination with other nations to begin or change broadcasting satellite service. The delegation was less successful, however, in achieving conference agreement on the desired power level for the satellites' signal and locations for three of eight orbital slots assigned to the United States.

Overall U.S. success is attributable to preconference preparations, a competent U.S. delegation, and the availability of computer analysis at the conference. While the United States did not achieve all of its objectives for this conference, the impact on the quality and availability of BSS is negligible in the short term and uncertain in the long term.

#### HOW THE UNITED STATES FARED AT THE CONFERENCE

The United States substantially achieved its major conference objectives--to obtain adequate orbit locations, frequencies, and procedural flexibility to accommodate domestic BSS. The RARC-83 delegates adopted the basic U.S. approach of assigning orbital slots to service areas--each with the full range of frequencies available and a flexible set of procedures. The conference set an important precedent by providing significant implementation flexibility in a detailed orbit/frequency assignment plan without negative impact on any nations' access rights to the geostationary satellite orbit. The plan permits a wide range of BSS configurations and technical standards. Table 1 summarizes and compares U.S. RARC-83 objectives and results.

The positive result noted in item 3 of the table is a significant advance over the region 1 and 3 plan outlined in chapter 1. The RARC-83 agreement spells out procedures designed to identify systems that can be implemented without affecting other nations' BSS systems beyond the previously agreed-upon level of interference. The procedures are intended to expedite the introduction of service, while assuring that orbit slots and frequencies allocated in the plan are protected. The RARC-83 procedures also specify how a nation may implement an interim system without modifying the plan. Although this procedure may require the consent of other nations, the process is less formal than that required for modification of the plan.

Table 1

A Comparison of Major U.S. Objectives  
and the RARC-83 Results

U.S. preconference objective	Conference results
1. Secure enough orbit/spectrum resources to meet present demand--eight orbit slots with 36 channels from each.	U.S. received eight orbit slots with 32 channels from each. Three of the orbit slots did not fully meet U.S. objectives.
2. Provide adequate spectrum for the Fixed Satellite Service and Broadcasting Satellite Service by dividing the 12.1 to 12.3 GHz band at 12.2 GHz.	The 12.1 to 12.3 GHz satellite band was split at 12.2 GHz between the services giving each 500 MHz. <sup>a</sup>
3. Seek sufficient flexibility in plan and procedures to permit interim and/or varying systems, minimal coordination with other countries and future modification of BSS characteristics.	Procedures adopted include flexibility, minimal coordination, and allowance for modification of system characteristics.
4. Maintain focus on technology and procedures rather than on extraneous political issues.	Conference focus strayed to Falkland Islands dispute and equatorial nations' claim to sovereignty over the geostationary orbit above their territory.
5. Achieve U.S. objectives while providing for other region 2 nations' requirements.	High-capacity plan adopted met majority of nations' requirements.
6. Adopt high level for satellite power received on earth and a more sensitive receiving antenna standard.	Slightly lower power level adopted resulting in a U.S. reservation; <sup>b</sup> and a less sensitive antenna standard was adopted.
7. Make channels capable of either sense of polarization (the plane in which signals are transmitted).	Plan adopted allows for only one sense of polarization, U.S. took reservation. <sup>b</sup>

<sup>a</sup>One GHz (gigahertz) is one billion cycles per second. One MHz (megahertz) is one million cycles per second.

<sup>b</sup>A reservation on an ITU agreement means that a nation takes exception to a specific decision of the conference and gives notice as to how it will act on the disagreement.

In line with the U.S. desire to avoid the specific assignment of orbit locations and frequencies characteristic of the rigid region 1 and 3 plan, the region 2 nations agreed to assign nations equitable groups of frequencies from orbit slots depending on the number of channels and service areas they proposed. The full complement of BSS frequencies is available from each orbit slot, but the size of the frequency group assigned to a country depends on its particular needs. The group assignment of frequencies allows nations to use them as they see fit, as long as they do not exceed predefined limits on interference with other nations' satellites.

RARC-83 also accepted the U.S. proposal that countries be able to use satellite systems with different characteristics than those specified in the plan without modifying the plan, provided that interference limits are maintained. In addition, because countries are expected to bring their satellites into use gradually rather than all at once, a satellite's interference to other designated satellite assignments not in use may be disregarded until the other country notifies the ITU that it intends to use the assignment. The eight U.S. orbit slots were among 48 designated at the conference to serve all of the Western Hemisphere.

Given the U.S.-proposed flexible planning approach, FCC estimated that eight eclipse-protected orbit slots,<sup>1</sup> each capable of serving half of the continental United States, would meet domestic needs. FCC also recommended that each orbit slot accommodate a number of satellites, transmitting a total of 36 channels. The conference adopted nearly the full U.S. proposal: satellites transmitting a total of 32 channels from each slot.

To help meet requirements for orbit and frequency capacity, the United States proposed technical satellite characteristics designed to provide the greatest possible number of usable orbit slots and frequencies. The conference adopted most of them to achieve a high capacity plan. Some industry and government officials said, however, that one technical standard important to reasonably priced home service--the high satellite signal power level as received at the earth's surface--was not adopted.

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<sup>1</sup>A satellite requires sunlight to generate electricity for operation. However, it is eclipsed by the earth--i.e., blocked from the sunlight for up to 70 minutes at a time during the spring and fall equinox periods of 44 days each. The time of the eclipse depends on the location of the satellite and its service area. If the satellite is in orbit west of the most westerly ground station, the sun blockage will occur after local midnight throughout the broadcast area. If the satellite has a more easterly position, outages will occur earlier in the evening during "prime time" viewing, causing a significant disadvantage to that position.

### Some U.S. objectives not fully realized

The United States did not achieve all of its RARC-83 objectives. Of the eight orbit slots the United States received, three are in marginal locations. In addition, the RARC-83 did not adopt the United States' preferred higher satellite power level. While it is doubtful that the United States could have done more to obtain better locations for its satellites, some observers stated that it could have gained more support for its proposed power level. How the United States' failure to meet all of its objectives will affect the domestic industry is negligible in the short term and uncertain in the long term.

The general assessment from the 10 BSS licensees and applicants we interviewed was that the overall conference result is favorable to U.S. interests. Six of the licensees did qualify their positive assessment of the conference with comments on the failure to obtain the higher satellite power level and/or the unfavorable location of some of the orbit slots. Eight of 10 BSS licensees and applicants interviewed in late 1983 indicated that they planned to move ahead with their plans for BSS service.

As noted in table 1 in this chapter, the United States was not successful in having some proposals adopted and filed reservations concerning two technical standards in the RARC-83 agreement. One expressed disagreement with the conference decision on the maximum satellite power received on the ground. The other stated United States disagreement with the specification in the RARC-83 agreement of polarization for the 32 channels. The United States proposed that polarization be left unspecified to allow the combination of channels to give enough frequency capacity for the domestic industry's proposed enhanced television formats.

### U.S. accepted some marginal orbit slots

Even though the United States was able to obtain eight orbital slots, it could not get all of them in optimum locations. The U.S. request submitted before the conference was for eight eclipse-protected orbit slots, each capable of serving two time zones (half of the continental United States). However, for the conference to agree on a viable plan, U.S. compromises were necessary on three of the eight slots. Such an eventuality was recognized before the conference and was included in the fallback positions given to the delegation by the State Department.

The three compromise U.S. slots are at 61.5°, 166°, and 175° West longitude above the equator. The latter two orbit slots are capable of serving only the Pacific time zone, Alaska, and Hawaii--not the full western half of the United States, thus making them less economical to use. The other orbit slot could be used to provide half-continent coverage but its easterly location lacks eclipse protection that would give access to sun power until after

prime-time hours all year. This slot may become more feasible in the future when improved batteries or other technology overcome the eclipsing problem.

Other nations also compromised on orbit slots. Canada also had to accept compromise slots offering little eclipse protection. Cuba accepted a compromise orbit slot and Mexico gave up a number of channels and was assigned four orbit slots different from those it requested. Brazil gave up one orbital slot in the compromise.

Licenses and U.S. delegates stated that the five favorably located slots, each capable of serving half of the continent with 32 channels, will be more than sufficient to meet current U.S. needs. Some said these slots would meet the long-term demand for BSS, believing that the expense of establishing service and competition from other television sources, such as cable and earth-bound broadcasters, would severely limit the number of satellite companies willing and/or able to provide service. In addition, some licenses and delegates believed that the United States had overestimated its needs. Others cited the difficulty in coming up with hard numbers, but noted they were based on plans of actual applicants.

#### U.S. lost vote for higher satellite power level

The United States preferred a higher power level than was proposed and passed by other countries in region 2. The higher power level would allow smaller, more inexpensive receiving antennas and the introduction of enhanced television pictures. Several other countries, led by Canada and Brazil, preferred a lower power level even though this would increase the size and cost of receiving antennas. Canada and Brazil found the added cost acceptable because, with smaller numbers of viewing households and/or a significant number of homes with cable service, the increased receiver cost was expected to be more than offset by the decreased cost of lower power satellites. In addition, the service area of a high power satellite is not restricted by national borders, which means that citizens of neighboring nations could receive the foreign broadcasts directly with inexpensive home receivers. Both Canada and Brazil were concerned about the possibility that their citizens might find neighboring countries' programming more attractive and readily available if other countries were free to use higher power levels.

According to its chairman, the U.S. delegation was able to show the Canadian and Brazilian delegations that their planned BSS systems could coexist without perceptible interference from neighbors using the higher power level. These countries' position on the power level could not be changed, however, and they were able to gain enough support from other nations to adopt the lower power limit in the "Final Acts" of the conference by a vote of 12 to 9.

By taking a reservation to this power level provision, the United States reserved the right to use the higher power level while promising to minimize the impact it would have on service in other countries. Even though the BSS licensees supported taking the reservation, none will require the higher power for their first generation of satellites, scheduled to be operational in this decade. And only one licensee--CBS, Inc.--indicated before the conference a definite need for the higher power level in the future. CBS at that time was developing a type of enhanced television picture that is said to double current state-of-the-art picture quality and could require a power level greater than what the conference approved.

Even though the United States took a reservation on the power issue, it is uncertain that higher power satellites will ever be authorized. According to one delegate, a former FCC commissioner, the United States has never exercised a reservation taken at previous conferences. He said he seriously doubted whether FCC would approve a domestic license that called for a higher power than specified in the RARC-83 Final Acts. However, FCC officials said that although the United States would coordinate the use of the higher power with Canada, they have no plan to withhold authorization for higher power satellites, if proposed. According to one FCC official, the application for higher power would be carefully considered to determine whether exercising the reservation is warranted.

#### Plan adopted represents break with past U.S. opposition to planning

The detailed yet flexible plan in the RARC-83 Final Acts could be seen as a turning point in the U.S. approach to international agreements on most communications services. The United States has traditionally favored the first-come, first-served arrangement for access to orbit slots and frequencies as they are needed. At the 1977 world conference on BSS, the United States had opposed the detailed advance plan favored by regions 1 and 3 because that rigid, conservative plan would waste orbit and spectrum resources and hinder utilization of technological advances. As noted in chapter 1, the United States in 1977 succeeded only in convincing region 2 nations to put off detailed planning. However, total opposition to advance planning for BSS was rejected early in the preparatory process for the 1983 conference, according to an FCC official, and instead the flexible planning approach was pursued as an improvement on the plan of regions 1 and 3.

The RARC-83 agreement for the BSS in region 2 serves as an interim pact among the Western Hemisphere nations to begin the new service and also as a proposed addition to the ITU Radio Regulations. Only a World Administrative Radio Conference (WARC)--a meeting of all the ITU nations--can revise the radio regulations, which have the status of a treaty among nations. The RARC-83 plan for BSS will be submitted to the next world conference on space services, known as the "Space WARC."

Space WARC has the large task of studying the use of the geostationary satellite orbit and the planning of space services utilizing it in two sessions, 1985 and 1988. Although some observers consider the adoption of the RARC-83 agreement only a formality on the Space WARC agenda, the groundbreaking RARC-83 agreement could be taken by some nations as a precedent for the broader Space WARC agreement involving all services using the geostationary orbit. The issue of whether equitable access to the orbit and frequency resources would be better assured by the first-come, first-served approach or by the advanced planned approach must now be resolved for many other services in all regions. This presents a further challenge for the United States to help develop an agreement on accommodating widely varied interests. Because of RARC-83's success, FCC officials now downplay the potential that Third World nations at the broader Space WARC will push for a rigid plan in which the United States would have the most to lose. These officials contend that the United States may again be able to convince other nations to accept flexible planning of orbit and frequency resources.

#### U.S. ACHIEVEMENTS AT CONFERENCE DUE TO SEVERAL POSITIVE FACTORS

The United States' success in adequately protecting its interests at the conference and in convincing region 2 nations to adopt a flexible plan is due to a number of factors: the quality of technical preparation, the availability of computer assistance at the conference, and the general competence of the large U.S. delegation. U.S. preparations for the 1983 conference included development of an innovative planning approach for BSS and estimating U.S. needs for orbit slots and frequencies. Those involved in the conference preparation recognized also that the success of the conference would depend heavily on computer analysis of a large number of variable factors, such as each nation's orbit/frequency requirements and technical standards. They were therefore prepared to utilize computer analysis. Finally, the delegation included many U.S. industry and government experts in broadcasting satellites who had been involved in conference preparations for years.

#### Technical preparations aided U.S. position at conference

Technical preparations for the conference provided ample justification for the orbit slots and frequencies the United States requested and produced a solid basis for the technical proposals the United States made at RARC-83.

Preparatory activities by several federal agencies and private industry were tied together by interagency coordinating groups. The earliest group focusing on RARC-83 preparations was Ad Hoc Group 177, a committee formed in 1980 by the Interdepartmental Radio Advisory Committee under NTIA. Information on individual agency activities was shared and a subgroup worked on computer software for the conference. The State Department had

its own coordinating committee during early RARC-83 preparations, which included FCC and NTIA representatives. While participating on the State and NTIA committees, FCC was carrying out its own preparations before the conference. Two FCC proceedings were ongoing: one to prepare recommended positions and orbit/frequency requests for RARC-83 and one on how to regulate domestic BSS, which included accepting applications from firms interested in providing the new service. FCC also established an industry advisory committee to develop recommendations for RARC-83 policy.

The U.S. estimate of needed orbit and frequency capacity presented at the conference was based on interest expressed by firms applying to provide the new satellite service, FCC's proceeding on preparations for RARC-83, and data developed by the industry committee. In its final report to FCC, the advisory committee estimated that four orbit slots would be sufficient to meet demand through the turn of the century. FCC considered this estimate, but based on the results of its proceeding relating to BSS, believed that it was below what would be required. FCC had conditionally authorized the construction of eight satellite systems requiring approximately 36 channels and at that time had another five applications pending for an additional 34 channels. In total, these 13 applications asked for channels that would exceed the capacity of four orbit slots for domestic needs. As a result, FCC recommended to the State Department that the United States seek eight orbit slots.

Although the United States submitted a request for eight orbit slots to RARC-83, room for compromise was provided in the State Department's instructions to the delegation. The United States had the largest orbit slot and frequency request, but it was not forced to reduce it, as were other countries such as Mexico and Brazil. The delegation's ability to demonstrate that the United States had already approved eight licenses and had others pending was an important justification for the large request. In the final plan, the U.S. slots made up for almost 17 percent of the orbital slots assigned.

U.S. participation in international discussions during preparations also greatly assisted in gaining acceptance for the flexible planning approach ultimately approved for region 2. The United States met with seven other nations<sup>2</sup> participating in the panel of experts<sup>3</sup> prior to the 1983 conference and attended the conference preparatory meeting to help write a report that served as the technical basis for the conference. These meetings provided the United States with an opportunity to gain acceptance

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<sup>2</sup>Argentina, Brazil, Canada, Cuba, Mexico, Panama, and Venezuela.

<sup>3</sup>The ITU organizes such committees during the preparation phase for a multilateral exchange of information on relevant technical matters. The panel tries to narrow the agenda for the conference and agree on which nations will be responsible for certain preparations, such as developing computer software.

for some of its objectives and to identify areas of mutual interest and difference. For example, the panel of experts evaluated planning approaches at four separate meetings before the conference and recommended that RARC-83 adopt the U.S.-proposed flexible planning approach. In addition, the panel accepted the U.S. recommendation that the plan permit a wide range of service configurations and technical standards. Participation in the panel of experts also enabled the United States to develop adequate computer capability to aid in its preparations and participation in the conference.

#### U.S. computer analysis proved valuable

The United States had an important role in developing the computer software used by the ITU to analyze BSS plans put forward during the conference. In addition, because those preparing for the conference recognized that computer analysis would be essential in developing an orbit and frequency assignment plan, the United States maintained its own computer facilities to perform analyses during the conference. Without this capability, it seems doubtful that the conference could have produced a plan acceptable to the United States and other nations with large requirements.

The computer software used by the ITU for RARC-83 was developed principally by the United States, Canada, and Brazil. The United States' contribution was the "Spectrum Orbit Utilization Program" (SOUP), developed by Operations Research Inc. under contract with the National Aeronautics and Space Administration (NASA) and further refined with support from NTIA and FCC. The program is used to estimate the level of interference between satellites placed in various orbit locations. As the U.S. contribution to conference preparations, the SOUP software was transferred to the ITU computer for use during the conference. The United States retained the software on its own computer and continued to adapt it for most efficient use.

The "official" recognition given to the ITU's software and limitations on access to the ITU computer made the U.S. computer facility vital to the delegation. Official runs on the ITU computer took several days to process and the ITU indicated at the conference outset that it would allow only three (later increased to four) computer runs of proposed plans during the conference. Only the official computer results could be incorporated into any conference agreement. The U.S. delegates were able to use terminals tied to an FCC computer to supplement the limited use of ITU's computer and for general communications with Washington. The United States modified its own software in order to analyze the unexpectedly high number of requests by nations for orbit and frequency resources. The computer link to Geneva was also used during the conference by NTIA and State Department officials in Washington with their own terminals. (See discussion of the Washington "home team" in ch. 3.)

The delegation chairman said that the availability of computer terminals in Geneva gave the United States the ability to immediately analyze problem areas and increased our credibility with other nations' delegations. For example, the U.S. delegates were able to demonstrate how a proposal for a flat percentage reduction in each nation's requirements would not improve the overall plan. Another benefit was in the U.S. ability to test the official program changes before submitting them to ITU for processing. According to the chairman, this alleviated several possibly embarrassing situations. The following is an example of how the U.S. delegation's computer capability was used to help achieve U.S. objectives.

Despite final acceptance of the U.S. recommendation for a flexible orbit slot and spectrum plan, the formulation of such a plan accommodating all nations' requirements looked doubtful in the early stages of RARC-83. Revised requirements submitted by region 2 nations totaled over 2,000 channels, an increase of 82 percent over what had initially been expected. According to U.S. delegates, the first plan run on the ITU computer was based on these requirements and resulted in extremely high and unacceptable levels of interference between satellites. A second run with somewhat reduced requirements also resulted in unacceptable interference. Cuba then proposed an alternate plan in which each nation would accept fewer channels--up to a maximum of 16 channels each. This simple approach was appealing to a number of region 2 nations because it would have cut the American and Canadian channel request significantly. The Cuban proposal therefore provided the impetus for the U.S. to develop--along with Canada, Brazil and Mexico--the fourth and final plan with much greater capacity for an official run on the ITU computer. The U.S. capability to do computer analysis independently on alternate plans proved invaluable in this situation. Without U.S. computer analysis it would have been impossible to collaborate with Canada and Mexico on the high capacity plan that was ultimately adopted. According to the FCC, the plan adopted has twice the channel capacity of regions 1 and 3 combined, while using less of the geostationary orbit.

#### Delegation size and experience advantageous for United States

The delegation's size and experience played an important role in its success at RARC-83. Delegation and home team members said that the size, experience, and qualifications of the delegation were a major asset. The U.S. delegation of 34 government and private sector members, along with 9 additional support staff, was the largest at the conference.

Several members of the U.S. delegation had served on FCC's advisory committee and had helped prepare the U.S. objectives for the conference. Government and industry observers described the delegation as comprising many U.S. experts on broadcasting satellites. Members included engineers from private industry and FCC as well as officials specializing in ITU and domestic regulation.

Although not all of the delegates played a major role at the conference, the chairman said that they provided necessary human resources in sufficient number to attend the multitude of meetings, prepare reports, and perform computer analyses. Committee and subcommittee meetings were held concurrently throughout the conference, often starting early in the morning and continuing until late at night. The large delegation assured that the United States was represented at these meetings and that the delegation, as a whole, did not get worn down. In contrast, 12 of the 25 nations sent three or fewer delegates (see app. I).

Not only was the delegation large, it was experienced and technically well qualified. Several of the delegates, including the delegation chairman, had attended previous international conferences and were familiar with the ITU mechanism and with other nations' delegates. Several delegates stated that this familiarity in itself was invaluable. The ITU is unique among international organizations in that many of the representatives attend all conferences and foreign meetings.

### CONCLUSIONS

The United States delegation was able to fulfill its pre-conference objectives to obtain adequate geostationary orbit and frequency capacity, procedural/technical flexibility, and minimal coordination required to begin or change service. These results successfully protect domestic interests in BSS. The United States, anticipating a large domestic demand for BSS, obtained eight of the 48 orbit slots designated to serve the Western Hemisphere.

Despite substantial success in achieving conference objectives, the delegation did not meet all of them. The United States was unable to have all of its eight slots optimally positioned, but the long-term impact on the domestic BSS industry is uncertain and short-term impact is negligible. In addition, the United States was not able to win approval for a desired higher satellite power level, but a U.S. reservation to the RARC-83 agreements could eliminate the impact of that decision. Some U.S. licensees said that the slightly higher power level was not needed.

Three major factors contributed to the general success of the conference for the U.S. First, the technical preparations by both government and industry contributed significantly to U.S. achievements. The United States developed an innovative planning approach that not only satisfied its requirements, but which was acceptable to the rest of region 2. FCC helped justify the large request for orbits and frequencies with actual licensees and with data developed by its private-sector advisory committee. Secondly, the plan adopted could not have been devised without the U.S. computer software development before the conference and the availability of the FCC computer for analysis during the conference. The third factor was the overall delegation expertise in telecommunications and familiarity with conference proceedings.

Many U.S. delegates were experienced at negotiating in ITU meetings, and most were technically well qualified, giving overall credibility to the delegation.

United States agreement to a detailed advance plan for BSS represented a break with what had been the past U.S. position--first-come, first-served access to orbit/spectrum resources. Although the United States was able to convince the other region 2 nations to build procedural and technical flexibility into the BSS plan, it faces a larger challenge at the 1985 and 1988 Space-WARC sessions, where Third World nations could push for a rigid plan to assure their future access to the geostationary orbit and frequencies used for a broad range of space telecommunications services. As a large telecommunications user, the United States has much to lose in a rigid plan for their future use.

#### VIEWS OF PROGRAM OFFICIALS

FCC's Managing Director and NTIA's Special Assistant for International Affairs judged this chapter generally balanced and accurate. Minor technical and editorial comments have been incorporated to reflect comments made by FCC, NTIA, and State Department officials.

## CHAPTER 3

### STATE DEPARTMENT CAN IMPROVE

#### PREPARATION AND PARTICIPATION IN FUTURE CONFERENCES

More and earlier Department of State involvement in assessing and negotiating international support for U.S. positions may have helped the RARC-83 delegation achieve more U.S. objectives. While a new office under the Department's Undersecretary for Security Assistance, Science and Technology was established in early 1983 to coordinate policymaking and serve as a focal point for U.S. preparations, its role and authority were not clearly defined. In addition, a number of administrative and substantive matters lacked attention prior to or during the conference.

Specific instances where State might have better fulfilled its responsibilities include: earlier and greater Department involvement in anticipating other nations' positions and negotiating support for U.S. positions, such as the higher power level; incomplete conflict-of-interest disclosure and review required by law for private-sector delegates to international conferences on telecommunications; and late determination of the negotiation and/or signature authority needed by the U.S. delegation at RARC-83. In addition, questions were raised about the extent of telecommunications expertise in the coordinator's office and the role of the home team appointed for this conference. These factors point out areas of weakness that should be addressed and resolved before the heavy schedule of ITU conferences during the remainder of the 1980s gets underway.

#### THE NEW COORDINATOR'S OFFICE AND ITS IMPACT ON THE RARC-83 NEGOTIATIONS

State had a limited opportunity to coordinate preparatory activities for RARC-83 because the Office of the Coordinator for International Communication and Information Policy was established in the latter stages of preparations. Most preparatory work had been initiated by the time the coordinator was officially appointed in 1983, and the office lacked staff to support conference preparation efforts. The coordinator did establish and direct the "home team" of agency officials in administrative, political, and technical areas to assist the delegates negotiating at the conference. For this technical conference, the home team was asked for little support but did provide a source of information on conference proceedings for agency officials in Washington, D.C.

Because the Office of the Coordinator was a new organization, and since international conferences have been held for decades without its participation, there was some initial resistance to its role. Officials both at State and in other agencies involved in preparations for international conferences indicated that the Office of Coordinator was trying to perform or planned to take on some of their responsibilities.

Coordination of international telecommunications policy, especially between State and other agencies, has been the subject of repeated congressional attention. The State Department created the coordinator's office, reporting to the Under Secretary for Security Assistance, Science and Technology in 1981; it was not staffed, however, until early 1983. In a September 1983 letter responding to the Senate Committee on Foreign Relations, the Secretary of State noted the importance of international communication and information to U.S. national security, competitiveness in world markets, and to foreign relations in general. The Secretary cited the need for coordination of several agencies' efforts in the formulation and implementation of policy. The Secretary said the establishment of the Office of the Coordinator was "to provide a needed senior-level focal point for U.S. government policy in this area."

On November 22, 1983, the Department of State Authorization Act, Fiscal Years 1984 and 1985 (Public Law 98-164), was approved--with Section 124 putting into law what had been initiated by Department action. In addition, it provided that the coordinator have the permanent rank of ambassador, subject to Senate confirmation.<sup>1</sup> According to the law, the coordinator's duties include maintaining liason with bureaus and offices of the Department, other executive branch agencies, congressional committees, and the private sector in the area of international telecommunications. The coordinator also is to supervise and coordinate the activities of the Senior Interagency Group on International Communications and Information Policy and is to assist the Undersecretary for Security Assistance, Science and Technology in the formulation, coordination, and oversight of the Department's international communications and information policy. The coordinator also chairs such agency and interagency meetings and groups as the President may delegate by executive order.

Coordinator's role among many offices  
with international telecommunications  
responsibilities is unclear

The coordinator's office has met with some resistance because it appeared to take over functions of other State Department offices and other federal agencies. While this perception is partially attributable to the fact that the role of this office in international telecommunications policy-making is new, it is also caused by the lack of clearly defined authority for the office in relation to other offices.

The United States has participated in the ITU for many decades. Within the State Department, a number of offices and bureaus have traditionally provided support for ITU conferences:

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<sup>1</sup>22 U.S.C. 2707.

- The Office of International Communications Policy in the Bureau of Economic and Business Affairs interacts with the ITU and other organizations. The office handles operational aspects of conferences, including coordinating participation and technical preparations with other government agencies and the private sector. In addition, it has periodically participated in bilateral and multilateral meetings with other nations between conferences.
- The Office of the Deputy Assistant Secretary for International Economic and Social Affairs in the Bureau of International Organization Affairs ensures that policies developed by various State Department offices and other government agencies mesh with broader foreign policy considerations. The office must see that positions developed for ITU conferences are consistent with U.S. positions set forth in other United Nations groups.
- The Office of International Conferences in the Bureau of International Organization Affairs assists involved State Department offices with the selection of the U.S. delegation for international conferences. It also must ensure that delegates are properly briefed, funded, accredited as official representatives of the United States, and provided with support personnel and equipment during conferences.

Of these offices, the Department's Office of International Communications Policy was previously the lead office for ITU conferences and had developed working relationships with other agencies. Although the new coordinator's office was to exercise oversight and coordination of State Department work in this subject area, the coordinator and RARC-83 delegates said that this role was unclear, at least initially, and led to problems in working with other groups. According to the director of the Office of International Communications Policy, this situation has improved since the conference--although aspects of the working relationships still need to be clarified.

In addition to its coordinating responsibilities within State, the Office of the Coordinator supports the Undersecretary for Security Assistance, Science and Technology at State as chair of the Senior Interagency Group, composed of representatives of NTIA, FCC, NASA, Department of Defense, and others. The group's purpose is to ensure effective interagency coordination of U.S. international communication and information policy. To explain the role of the Office of the Coordinator before Congress in March 1983, the coordinator said that her office would serve as "the focal point within the administration for formulating and implementing policies concerning broad international communication and information interests." Additionally, as part of its duties for State, the Office of the Coordinator oversees delegations to international telecommunications conferences.

The establishment of the coordinating office at State has added to tension with other federal agencies, especially the Commerce Department's NTIA, over the extent of State Department responsibilities in international telecommunications policy. The President's March 27, 1978, Executive Order (No. 12046), Sections 2-401 and 5-201, assigns these responsibilities to the State and Commerce Departments. The executive order names the Secretary of Commerce as the President's "principal advisor" on telecommunications policies, and directs him to develop and set forth--in coordination with the Secretary of State--policies and programs that relate to international telecommunications issues. On the other hand, the executive order gives the Secretary of State the "primary authority" for the determination of U.S. positions with respect to international organizations such as the ITU.

The confusion over the role of the coordinator, NTIA, and the Senior Interagency Group prompted the Departments of State and Commerce to approve a written agreement in September 1983 on responsibilities for international communication and information policy. The agreement holds NTIA responsible for the development and presentation of executive-branch telecommunication and information policy and for federal government spectrum management. The Department of State is responsible for incorporating international communication and information policy with other aspects of U.S. foreign policy, for negotiations with other governments, and for U.S. relations with intergovernmental organizations. The Senior Interagency Group is one of several forums for airing the suggestions and concerns of federal agencies in this policy area. While the agreement describes the general roles of each agency in this policy area, there is no clear separation of the responsibilities that could be seen as conflicting when considering Executive Order No. 12046 and the functions given to the State Department's coordinator. In fact the September 1983 agreement states that it should not be "construed to alter the statutory or other responsibilities of any Executive department or independent agency," and therefore does not change existing functional statements.

#### Some delegates critical of coordinator's office staffing

In addition to the apparent confusion over the coordinator's role and broad responsibilities in this policy area, the staffing of the office before and during RARC-83 was criticized by some delegates. They viewed the office as having insufficient staff or being technically unable to contribute significantly to RARC-83. In contrast to the government and private sector officials who prepared the U.S. objectives and position papers for the conference, the coordinator's office was mainly staffed with foreign service officers initially unfamiliar with BSS. As of May 1983, the coordinator's staff totaled five, one of whom was assigned to monitor RARC-83. Other delegates questioned whether the coordinator's office should develop technical expertise, considering that its primary responsibility is in foreign relations, and technical expertise is available in other offices and agencies. The deputy

coordinator pointed out that the coordinator could draw on the expertise of the Senior Interagency Group and several State bureaus, all of which existed before the coordinator.

The development of continuity and telecommunications expertise to monitor and oversee conference participation could be negatively affected by staffing the office primarily with foreign service officers. According to a Congressional Research Service report,<sup>2</sup> the foreign service personnel system has not traditionally recognized the value of such expertise and continuity for career advancement and instead regularly rotates officers to new assignments. The report also pointed out that without highly qualified and consistent staff resources, the ability to gather needed data, monitor foreign and international activities, analyze policies, and prepare and oversee international negotiations may be substantially hampered.

Congressional concern with staffing the coordinator's office was highlighted with the passage of Section 104 of the State Department Authorization Act for Fiscal Years 1984 and 1985, which mandated 11 additional permanent full-time officers and secretaries for a new total of 22 staff positions. While the additional 11 positions have not yet been appropriated, the Office of the Coordinator reported that as of June 19, 1984, 12 persons were working there in professional positions--five of them filled by foreign service officers and seven with civil service employees. In addition, they reported that as of June 19, another seven new staff members had been selected and are being processed to fill vacant positions. All but one of the seven new members hired will be civil service employees.

GREATER STATE DEPARTMENT INVOLVEMENT CAN  
STRENGTHEN U.S. POSITION AT CONFERENCES

The Department of State can enhance U.S. participation in future international telecommunications conferences. On the basis of our review of RARC-83, we believe that the Department could improve its support of conferences if it provided

- earlier and greater involvement of Department political experts in anticipating other nations' positions on key issues,
- more and earlier attention to administrative and political matters when preparing delegations for conferences, and
- clear definition and planning of the home team's supporting role.

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<sup>2</sup>International Telecommunications and Information Policy: Selected Issues For The 1980s; A Report Prepared for the Committee on Foreign Relations, United States Senate. Congressional Research Service, Washington, Sept. 1983, p. 17.

The coordinator for international communications and information policy acknowledged problems in coordinating preparations for RARC-83 stemming from resistance by other offices and agencies to the role of the coordinator. To improve preparations for future conferences, the coordinator outlined several measures planned or already taken. These include (1) holding weekly State Department coordination meetings, (2) preparing internal "post-conference" reports that highlight the strengths and weaknesses of preparatory efforts, (3) developing a data bank to include profiles of other countries' telecommunications policies and representatives, (4) appointing an executive director in the coordinator's office to be the key staff member for each important conference, and (5) initiating broad bilateral discussions with other countries encompassing more than ITU matters. The coordinator said that the office will also track all administrative preparations for conferences in order to assure that they are accomplished promptly. Although these efforts should aid the preparation and coordination of future conferences, the areas we identified based on our review of RARC-83 highlight additional concerns that need to be addressed.

#### Early involvement of State Department experts could aid U.S. delegations

A RARC-83 vote to set the standard for the satellites' power level highlights the need for earlier and greater State Department involvement in obtaining support for U.S. conference positions. In this instance, the U.S. proposal for a higher power level unexpectedly lost by three votes. Several factors suggest that more and earlier involvement of State Department experts could have better aided the delegation in achieving the U.S. objective for the higher satellite power level:

- the small margin of the loss,
- the delegation's confusion about the proper method of obtaining proxy support, and
- the reality that more and more decisions at the ITU are being made on a political basis.

The conference delegation succeeded in persuading a number of countries to side with the United States on the power level issue, but other efforts to gain support were not utilized effectively. For example, the delegation's attempt to obtain Haiti's backing for the U.S.-supported power level failed because of an administrative problem. Although Haiti was not attending the conference, the delegation's inquiry found that Haiti was willing to support the United States by proxy. But according to the delegation chairman, the supporting proxy was received by telegram, which was unacceptable. ITU rules require that proxy votes be in writing and signed by the particular nation's minister of state or communications. The chairman explained that the U.S. delegation was unaware of this until it was too late and had attention been paid

to this earlier, an acceptable proxy could have been obtained. State Department officials said that the problem was caused by the delegation leadership, which tried to handle the proxy matter during the conference themselves without heeding State Department experts. State officials did not deny, however, that the Department had ultimate responsibility for proxies or that the matter of proxy support from other nations could have been accomplished more effectively earlier than the actual conference session.

Additional supporting votes might also have been obtained from other countries. According to U.S. delegates, Honduras and Panama had representatives present at the conference who were open to the U.S. position on the power level. However, the representatives could not support the United States. In Honduras' case, the delegation had not presented the correct credentials and therefore could not vote. The Panama delegation could not support the U.S. on this issue because its government had not given advance approval to support the U.S. Some delegates said that if the United States had undertaken preconference discussions with Honduras and Panama, or if timely steps had been taken to enlist proxy support, the United States might have won the power level vote. State Department officials said that a better understanding by the delegation leadership of the Department's role in such political matters also would have improved the outcome. They noted a reluctance by some delegation members to realize that ITU conferences were very political forums as well as very technical ones.

The coordinator at State said that the preparatory and negotiation phases of conferences could be aided by such improvements as holding more preconference meetings with other nations, improving briefings of the delegation on the politics of other region 2 nations, and including more political experts on the delegation earlier. The coordinator referred to the fact that the Department added a State Department Latin American political specialist to the delegation "at the last minute," against the advice of the delegation leadership. However, the specialist proved to be a valuable addition to the delegation and was one of two delegates fluent in Spanish. The delegation chairman said the foreign language skill proved extremely important at this conference and is a key skill that future delegations should possess. The State Department political specialist said the earlier involvement of political expertise in preparatory activities should be carefully handled because it could upset the process of reaching agreement among technical experts.

#### Little priority given to some administrative matters

The State Department is responsible for assuring that members of U.S. delegations are properly authorized to participate in international negotiations as official U.S. government representatives. It is also responsible for assessing the effect U.S. participation in a particular international conference will have on

existing international agreements and, therefore, determining the proper negotiating and signature authority for delegations. Even though preparatory efforts for RARC-83 started over 3 years before the conference and the U.S. delegates were nominated 6 months in advance of the conference, the State Department did not complete required conflict-of-interest reviews of private-sector delegates before the conference began. In addition, State Department officials said that an analysis of what legal effect the RARC-83 Final Acts would have and a determination of what negotiation and signature power should be granted to the delegation were not completed until just prior to the conference, creating conflict between the delegation and the Department.

#### Conflict-of-interest reviews not completed

Our report on RARC-83 preparations (GAO/RCED-83-121) noted a provision in the Department of State Authorization Act for fiscal years 1982 and 1983 (Sec. 120, Public Law 97-241, Aug. 24, 1982) designed to allow full private-sector delegate participation in international telecommunications meetings or conferences without the potential of violating conflict-of-interest laws.

Because violation of conflict-of-interest laws had been a concern before the WARC-79 conference, State Department guidelines prevented private-sector delegates from speaking in an official capacity at international conferences and limited them to advisory roles only. According to a State Department legal adviser, the Congress wanted a larger role for the private-sector delegates in ITU conferences because of the delegate's expertise and prominent role in U.S. telecommunications. Therefore, a law was passed specifically applying to the WARC-79 delegation (Sec. 406, Public Law 96-60, Aug. 15, 1979) allowing private-sector participation on that delegation.

The 1982 law applies to international conferences more generally and makes full participation by the private sector without conflict of interest possible by providing an exemption from sections of federal law on conflicts of interest. The Congress set a condition, however, for private-sector exemption which states that all such representatives "shall have on file with the Department of State the financial disclosure report required for special government employees." In addition, for a private-sector representative to speak for or represent the United States, the Secretary of State or his representative must certify that no government delegation member is as well qualified to represent the United States.

With respect to the RARC-83 conference, we found that the requirements for private-sector participation were not followed completely because of an apparent breakdown in administrative procedures and a lack of priority given to compliance with them. Of the 34 U.S. delegates attending RARC-83, 14 were from the private sector. The assistant legal adviser for management at State said that financial disclosure forms for only four of these 14 persons

had been received in his office. The review for apparent conflict of interest occurred more than a month after the conclusion of the conference. The assistant legal adviser stated that there had been a "slip up" of some kind in that the forms received from the private-sector delegates had been lost. The "Confidential Statement of Employment and Financial Interests" (Form OF-107) should be submitted to the State legal adviser (through the employing bureau) no later than 10 days prior to entrance on duty (22 C.F.R. 10.735-404, -408). Although the private-sector delegate is exempted from application of criminal conflict of interest, regulations require that the legal adviser review the form to determine if any real or apparent conflicts are indicated with regard to the particular matters on which the delegate might be expected to speak.

The Office of International Conferences in the Bureau of International Organization Affairs is responsible for collecting the required financial disclosure information from the private-sector delegates and forwarding it for legal review. The responsible program officer confirmed that all 14 private-sector delegates had filed the forms but the program officer could not explain what happened to the forms or what was done to correct the procedure for future conferences.

Late determination made on  
delegation's signature authority

Another RARC-83 administrative matter illustrating the need for greater State Department involvement is the late final decision on the proper authority to be granted to the delegation. In collaboration with other Department bureaus, the Office of Legal Advisor researches and determines the legal implications of U.S. participation in a international telecommunications conference and recommends the extent of authority U.S. delegates should be given.

Although the State Department had staff monitoring preparations for years before RARC-83, no decision on the proper signature authority was made until the week before the delegation left the United States. Rather than conferring full powers to negotiate and sign the Final Acts of the conference, the State Department gave the delegates only the power to negotiate the Final Acts. The authority to sign them was to be withheld until after the Final Acts were transmitted back to Washington for review near the end of the conference. This decision was made after the delegation chairman and vice chairman were earlier informed by Department staff that they would be given full negotiating and signing powers. The chairman and vice chairman contended this limit on their power at the conference was contrary to past practice and created uncertainty as to whether the chairman would actually be able to sign the Final Acts. The State Department delegate from the Bureau of Economic and Business Affairs said this uncertainty

was caused by the reluctance of the delegation leadership to discuss this change with State officials in Washington after being informed about it one week into the conference.

The decision on what authority to grant the delegation was late because the memorandum granting such authority was not received for review by the legal adviser's office until 1 week before the conference. The draft memorandum, prepared by the Office of International Communication Policy in the Bureau of Economic and Business Affairs, requested that the delegation be sent to Geneva with the authority to negotiate and sign the Final Acts. The acting assistant legal adviser for economic and business affairs recommended that negotiating authority only be granted to the delegation initially because the departmental review of the Final Acts' content had to be completed before signing. However, the chairman and vice chairman of the delegation said it was not until after negotiations had started that they learned that signature authority was being withheld. They said the reversal had not been explained to them and it was unclear until the end of the conference whether or not the chairman could sign. According to State Department cables, portions of the text were not received in Washington until shortly before the signing, and signature authority was sent by cable the night before the Final Acts were to be signed. The chairman said by that time, however, he had already decided to sign--with or without the Department's authorization--because he believed he had the authority to do so with his appointment by the President as ambassador to head the delegation. Had the United States withheld its signature the chairman said doubts would have arisen in the minds of other nations' delegates as to whether the United States had negotiated in good faith.

#### Home team provided delegation with limited support

The coordinator designated a home team to support the RARC-83 delegation during the conference. According to the coordinator, the home team was a group of agency officials selected for their ability to provide the delegation with administrative, political, and technical support. The RARC-83 home team provided limited support to the U.S. delegates in Geneva, however, due in part to the delegation's technical expertise, and therefore limited need for such support, and in part because the home team had not fully participated in conference preparation. Many delegates said the home team was unnecessary or that its support was limited to assistance in computer analysis. The chief FCC home team member concurred, saying that no more than half of FCC's home team members were consulted during the conference--and then only on computer matters. Many of the delegates said they had no contact with the home team.

The home team was established during the final stages of pre-conference preparation; it was officially designated on June 6, 1983, and held its first meeting June 9, 1983--four days before

the conference opened. Although the coordinator outlined home team responsibilities before the conference, some home team members did not have sufficient time to familiarize themselves fully with conference issues.

The delegation chairman said that the home team, headed by the coordinator, requested an inordinate amount of information to make decisions on conference issues. This caused confusion as to whether the role of the home team was to support or direct the delegation. The delegation leadership said they were instructed to report to the home team by sending cables with such information as weekly classified and unclassified activity summaries. By the end of the five-week conference, the delegation had transmitted 64 cables to the home team describing developments. The home team, meanwhile, sent 25 cables to the delegation, some of which requested further information and or contingency analyses to anticipate conference developments.

Some delegates said the detailed information requests from the home team raised the question of which group was supporting the other. They contended that the home team's information requests were excessive and time-consuming for the delegation but were of little value because the complex subject matter and rapidly changing negotiations almost guaranteed that the information was soon outdated. However, State Department officials contended that the delegation was informed in advance of these "routine" information requirements and that such documentation was necessary for future reference.

The coordinator was aware of concerns with the role and function of the RARC-83 home team. She contended, however, that the home team concept was "evolutionary in nature," and that formalizing the home team for RARC-83 was to provide experience on what kind of home team would best support conferences of varying types and purposes. The coordinator did not believe too much information was requested of the delegation because the State Department must have detailed information on conference negotiations in order to fulfill its responsibility to oversee international telecommunications policy. NTIA and State Department officials involved with past conferences pointed out that home teams of various configurations had also been designated to support past delegations, thus home teams were not a completely new concept.

The home team did aid in communications between the delegation and senior officials in State, NTIA, and FCC. The home team was able to keep involved agencies informed of conference developments due to its access to delegation cables and computer-transmitted communications. Distribution of information copies of cables to involved agencies has also been customary during past conferences. As stated earlier, however, the most notable assistance to the delegation from the home team during the conference came directly from the FCC computer facilities and staff.

## CONCLUSIONS

Although the importance of international telecommunications to the United States has been emphasized with the appointment of the State Department's coordinator to elevate and improve policy coordination, U.S. preparation for and support of the RARC-83 delegation fell short in important areas. Some preparatory matters lacked early involvement by State Department experts. The new coordinator's office at State did not entirely achieve its goals, but some of the difficulties encountered can be attributed to the newness of the coordinator's office, and uncertainty in other bureaus and agencies about the coordinator's responsibilities and procedures. Also, some of the problems may be peculiar to this conference because most preparations had been completed before the Office of the Coordinator asserted its role. Because the delegation leadership had been acting more or less independently before the coordinator's office became active, a conflict was created over the bounds of the coordinator's authority.

Several administrative and preparatory matters for RARC-83 were not given enough priority: clearance of private-sector delegates, determination of the needed negotiation and signature authority, and proper division of responsibilities between the home team and the U.S. delegation. These problems ultimately had minimal impact on the outcome of this regional conference, but similar failings before or during future conferences--with broader issues and more nations involved--could more significantly impair U.S. ability to meet objectives. More and earlier State Department involvement in such matters would improve U.S. participation in future conferences.

## RECOMMENDATION TO THE SECRETARY OF STATE

We recommend that the Secretary of State improve the coordination of its participation in international telecommunications conferences and assure that delegations have the benefit of Department advice and involvement by

- more clearly defining and delineating the authority and responsibilities of the Office of the Coordinator for International Communication and Information Policy, and
- involving Department political experts early in conference preparations and as delegation members in order to negotiate and anticipate support for U.S. positions.

## VIEWS OF PROGRAM OFFICIALS

NTIA's Special Assistant for International Affairs and FCC's Managing Director generally agreed on the accuracy of this chapter. The NTIA official believed, however, that the chapter did not fully recognize the important role of NTIA in policy development and presentation. He also objected to any implication

that the Department of Commerce had not provided full cooperation to State's Office of the Coordinator. We made no changes to this chapter in response to these comments because we believe we have recognized NTIA's role in both chapter 1 and chapter 3, and because we believe chapter 3 properly reports the cooperation that occurred.

State Department's deputy coordinator for international communication and information policy emphasized that the State Department was involved early in the preparations for this conference through its Bureau of Economic and Business Affairs. He pointed out that the Office of Coordinator was not established early enough to influence preparations for this conference. We noted the involvement of the Bureau of Economic and Business Affairs during our review. However, we found that the unit involved--the Office of International Communications Policy (see p. 22)--was concerned mainly with the operational and technical aspects of conferences. There was no indication that political expertise from one of State's area bureaus or offices was involved until shortly before the conference.

The deputy coordinator noted that some of the problems cited have not occurred since RARC-83 or have been corrected, in particular during the January-February 1984 WARC on high frequency radio. We could not examine this claim because our field work was complete by that time.

Finally, the deputy coordinator provided us with information (included on page 24) showing that State has recently added both foreign service and civil service employees to the Office of Coordinator staff. We therefore deleted the suggestion contained in our draft report that the Secretary consider assigning staff to the coordinator's office to develop technical expertise and maintain continuity.

## LIST OF PARTICIPATING NATIONS

The following 25 nations were represented by delegations at RARC-83 in Geneva:

<u>Country</u>	<u>Number of Delegates</u>
Argentina	8
Belize	<sup>b</sup>
Bolivia	1
Brazil	8
Canada	25
Chile	6
Colombia	5
Costa Rica	2
Cuba	3
<sup>a</sup> Denmark	1
Ecuador	5
<sup>a</sup> France	14
Honduras	2
Grenada	1
Guyana	1
Jamaica	3
Mexico	12
Nicaragua	1
<sup>a</sup> Netherlands (Antilles)	3
Peru	4
Suriname	3
<sup>a</sup> United Kingdom of Great Britian and Northern Ireland	16
United States of America	34
Uruguay	2
Venezuela	7

<sup>a</sup>European nations included to represent Western Hemisphere possessions.

<sup>b</sup>United Kingdom delegates represented Belize.





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