October 21, 1969

Dear Mr. Morris:

Thank you for your October 6, 1969 letter concerning the domestic satellite communications problem. I am enclosing herewith the data which you requested regarding the use of satellites for telecommunications purposes, and hope you will find the material useful in your studies of educational television. I am sure that COMSAT would also be happy to provide you with background information in this area, and suggest that you write directly to them.

A copy of the President's Task Force on Communications Policy Report, referred to in your letter, may be obtained by writing to the Government Printing Office, North Capitel. and H Streets, N. W., Washington, D. C. 20401.

I regret that I am unable to furnish you any additional information regarding the on-going review of the national telecommunications effort.

Sincerely,

Clay T. Whitehead Staff Assistant

Connet

Mr. Lloyd P. Morris 2947 North 78th Court Elmwood Park, Illinois 60635

Enclosures

cc: Mr. Whitehead/Mr. Kriegsman/Central Files



October 6, 1969

Mr. Clay T. Whitehead Staff Assistant THE WHITE HOUSE Washington, D.C.

> RE: THE QUESTION OF DOMESTIC DIRECT BROADCASTING SATELLITES; SOME PREVIOUS CORRESPONDENCE; SOME COMMENTS TO FCC ON DOCKET 18294; PREPARATION OF US/FCC POSITION FOR WARC GENEVA 1971.

Dear Sir:

1. In connection with the above subject I understand you developed a list of comprehensive and good questions on the subject, and as attached to a letter of August 19, 1969 to EIA Satellite Telecommunications Subdivision.

2. Being interested in this subject from an educational telecommunications systems angle for some school board committee point of view, being a school board advisory member of another EIA committee, and having already written you twice (including a copy of my comments on FCC Docket 18294) as an indication of interest, I would like to ask if you can send me a copy of this list of questions mentioned above?

3. Some comments in the Press gave me the impression that you had a group studying this question of Satellite broadcasting, and I inquire as to whether or not you may have available some additional report, information, or references that would add to the satellite telecommunications story.

4. I would like to get a better understanding of this broad satellite picture and would appreciate any additional information that you might be able to provide.

5. Being in the White House perhaps you can send me the more complete identification and procurement and source detail for the President's Task Force on National Telecommunications Policy Report. 6. Thank you so very much for any help on the above items.

Yours very truly,

Llugilpmannis

Lloyd P. Morris 2947 North 78th Court Elmwood Park, Illinois 60635

LPM:es cc:Encl. JCF

Telecommunications Reports

Page 3

COMSAT DISAGREES '100%' WITH GRAVEL'S CHARGES ON SATELLITE SERVICE PROPOSALS FOR ALASKA; SENATE BILL WOULD ALLOW STATES TO OWN STATIONS

A charge by Sen. Mike Gravel (R., Alaska) that the Communications Satellite Corp. "appears to be engaged in a deliberate campaign to undermine the immediate application of satellite communications" services in Alaska was rejected by Comsat Friday, Sept. 19.

Comsat Chairman James McCormack, replying to a letter from Senator Gravel, expressed "100 per cent disagreement" with the charges made by the Alaska Senator two days earlier. Mr. McCormack said that Comsat is making every attempt to work with "all interested parties. . . in an effort to bring satellite communications to your state by way of a system which is both operationally suitable and economically attainable."

Meanwhile, Senator Gravel introduced a bill in the Senate to amend the Communications Satellite Act of 1962 to permit state ownership of satellite terminal stations." In a message read to the Senate when he introduced the legislation, Senator Gravel said it would produce cost savings and other benefits.

He declared that the "era of satellite communications has been stymied, let me qualify this to say, has been perverted by traditional use of formulas predicated on the amortization of terrestrial or submarine methods of transmission and distribution."

In his letter to Comsat, the Alaska Senator complained about cost figures that have been quoted regarding the furnishing of satellite services to Alaska. He said he has been furnished cost figures which indicate that "Alaska could have a comprehensive communications system within a price range that would make economic sense. . .Comsat's regressive position is seriously impairing the developments of an adequate communications system for Alaska."

Mr. McCormack pointed out that the figures referred to by Senator Gravel were included in a presentation intended to describe "several of the many alternative system configurations which appear. . .to provide suitable communications services for Alaska from an operational standpoint."

The Comsat Chairman pointed out that William Miller, of Comsat-the target of Senator Gravel's complaint--used the term "optimum solution" in reference to several configurations ranging in cost from \$10,000,000 to \$20,000,000 per year. Mr. McCormack said that Mr. Miller was presenting examples of more comprehensive satellite systems which "would provide a more favorable solution to Alaska's present and future communications requirements," but that lower costs have also been stated in discussing possible system configurations.

SPACE BUSINESS Daily

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Tuesday, October 21, 1969

Page 227

11th Year, Vol. 46, No. 36

COMSAT REPEATS READINESS TO INITIATE DOMESTIC SATCOM

The Communications Satellite Corp. says it has the money and is ready to start now on a domestic communications satellite system, which, among other functions, would carry programming of the television networks. ComSat detailed its plans in a report to Clay T. Whitehead, who is heading a White House study on domestic satellite communications (SPACE Daily, Oct. 16). Initiation of a domestic satcom is awaiting a ruling by the Federal Communications System on how the system should be operated and who shall do the operating.

COMSAT ADVANCES SATELLITE TV PLAN

Would Supplant A.T.&T. as Prime Carrier of Shows in Bid to Ease Congestion

By JACK GOULD

The Communications Satellite Corporation has informed the White House of its immediate readiness to construct and operate a domestic satellite television system that would serve commercial and noncommercial TV networks and ease the mounting congestion in the nation's communications facilities.

James McCormack, chairman of Comsat, successfully appealed to Clay T. Whitehead, special assistant to President Nixon, to declassify the plans so that he could discuss its details this week with the presidents of the Columbia Broadcasting System, the National Broadcasting Company, the American Broadcasting Company and the Corporation for Public Broadcasting. The meeting may be held on Wednesday, probably in New York.

Stanton Proposal

A major feature of the Comsat plan would be to supplant the American Telephone and Telegraph Company as the prime carrier of TV shows from coast to coast, but Dr. John V. Charyk, president of Comsat, predicted that the utility's ground relay facilities would be quickly occupied by other communications requirements.

Mr. McCormack went to the White House after learning last Wedneesday morning tthat Dr. Frank Stanton, president of C.B.S., would recommend that evening that the TV industry construct its private satellite relay system rather than submit to the demands of A. T. & T. for an increase of \$20,000,-000 a year for the distribution

of TV shows.

Even before Dr. Stanton spoke before the Audio Engineering Society at the New York Hilton, A. T. & T. issued a statement of its corporate position, saying that it was not immediately intereested in constructing a new domestic satellite and suggesting that it would be "wise public policy" to entertain applications from all comers.

A.T.&T. has been the prime relayer of broadcasting material since radio's earliest days and its unexpected statement clearly augured a major electronic upheaval in American communications.

A. T. & T. is known to be sensitive over consumer complaints about the efficiency of its existing service to individual subscribers and business concerns. The company was said to be anxious to correct that condition beforee assuming new and highly complex ventures.

At the White House, Mr. Whitehead agreed to the declassification of the Comsat plan, originally submitted on Sept. 8, with the proviso that its contents be made known only to the broadcast presidents meeting with Mr. McCormack. Neither Comsat nor the TV networks would divulge or discuss the text, but a copy was obtained through other sources in Washington after the declassification.

Told that the plan had become independently known, Dr. Stanton said that the Comsat proposal had appealing financial features.

The networks would be spared the initial construction investment, which he had placed at about \$100-million, and relieved of the cost of training maintenance crews.

In New York, the passive A.T. & T. attitude was explained by a high official on the ground that the thousands of miles of cable and microwave facilities now leased on a wholesale basis to the television industry might be used on a retail basis for individual customers. The earnings potential was described as possibly greater than the \$65-million a year sought from relaying TV.

greater than the soo-million a year sought from relaying TV. The chief feature of the Comsat plan would be to enable all users of a domestic satellite system to gain direct access to the system without going through the established commercial carriers ,a policy that applies to the international use of satellites. Eliminating the so-called "middleman" and his charges would make Comsat a full carrier in its own right and able to offer its domestic service not only to TV but to press associations, cable television networks if they are eventually authorized, and other industrial users. If the ground facilities of A.T. & T. should become overcrowded, Dr. Charyk told the White House, Comsat would be in a position to lend a helping hand in carrying long-distance calls.

With the present state of satellite communications techniques, Comsat believes the domestic system could carry with reliability 14 TV channels, any one of which would be available to handle simultaneouly as many as 1,800 telephone calls in an emergency.

Both domestic and international political considerations entered yesterday's developments. Isolated objections have been voiced to network domination of a private satellite television system, although Dr. Stanton had specifically acknowledged that the system would be open to all rivals. Comsat, on the other hand, is a private organization chartered by Congress.

Ironically, A.T.&T. holds an excess of 20 per cent of Comsat stock but the shares are also widely held by the public.

Dr. Charyk specifically observed that transfer of United States domestic traffic to a United States domestic satellite system would lead to reduced ownership dependency on Intelsat, the international group controlling satellites in global use.

This step, he said, would alleviate foreign concern over United States domination of space communications, a sore point with many countries lacking the economic and technical resources for launching satellites.

The COMSAT plan dovetails closely with many of the hopes of the commercial networks and of the possible users.

and of the possible users. For the efficiency of the whole system, COMSAT said that it believed it should own those ground stations that would send and receive signals to and from satellites. These might be placed in or near strategic cities generating the largest volume of television programs or other informational matter. For broadcasters interested only in receiving programs from the satellites, the operation could be a matter of choice, with either the owner

in the second

choice, with either the owner or the satellite service assum-ing the job of maintenance. The Comsat plan stresses that there will be continuing need for ground communica-tion facilities, such as those operated by A. T. & T. But the corporation adds that not many more years can be wasted in the operation new space facilities capable of cop-ing with the expected deluge of computerized data transmis-sion, facsimile and other forms of recorded materials, as op-posed to TV programs intended for general public consumption.

THE WHITE HOUSE WASHINGTON

16 October 15, 1969

To: Herb Klein Jerry Warren

From: Tom Whitehead

There apparently is going to be a fair amount of interest stirred up by the story in the New York Times this morning regarding CBS's plans in the communications satellite area. We have a White House study under way. I have been in contact with most of the industry, and, if you get any inquiries, please check with me.

(MESSAGE PHONED TO THESE TWO OFFICES)

concat

THE NEW YORK TIMES. THURSDAY. OCTOBER 16, 1969

A.T.&T. Backs Private Communications Satellites

By JACK GOULD

Telegraph Company, in a major

poration.

The A.T. P. T. statement v. s

Julian Goodman, president of By MACK EDOLD States of the National Eroadcasing Com-The American Telephone and the National Eroadcasing Com-elegraph Company, in a major 10 my, called for prompt "ex-cutive action" to make res-cutive action to make res-turned action to make res-cutive action to make res-cutive action to make res-cutive action to make res-turned action to resturned action to res-resturne Telegraph Company, in a major policy innovation, said yester-day that ' the wisest public pol-icy" distance that any group or organization that any group or organization be allowed to apply for operation of a do-mestic communication satellite system. Traditionally, the utility has favored that such a communi-favored that such a communi-to the component of a free national TV riers of information, either mate of a free national TV riers of information, either mate or a free national TV riers of information, either mate or a free national TV riers of information, either mate or a free national TV riers of information, either mate or a free national TV riers of information, either mate or a free national to communications Satellite Cor-tion previously supported the move.

Support of Network Chiefs

move.

The A.T. & T. statement was issued following disclosure of the recommunications Satellite Trank Stanton, president of Dr. Frank Stanton, president of Dr. that the recommunications Satellite Columbia Broadcorling System, that the their schements of the networks and abandon their economic dr. pendence on A.T. & T. and pri-vately oparate their own satellite system for relaying programs coest to coast. Dr. Stanton formally deliv-ered his remarks last night st a meeting of the Audio En-gineering Society of the Navy York Hilton, but the substance of his text became known a day earlier.

In its statement, A. T. & T. said it believed opening a door to any applicant to run a satel-lite communications system "would allow fiertibility and in-centive for cre-tive private ini-tiative and would provide the tintive and would provide the most appropriate means for an orderly development of comes-tic satellites.

Although it was inviting pos-slible rivalry in space communi-cations, A. T. & T. called for a careful appreisal of the avail-ability of enough channels and satellites and their componion ground stations; a subject of ex-faustive economic and technical

"Lobing in the future," the statement continued, A. T. & T. Involucies that, when it makes good toolined controls conta to do so, it will note contained tion to use satellites in its own operations. Our recent study indicates that entellite costs Extended that enternite costs currently may be less favorable occupated to torrestrial costs than appeared to be the case some years ago." What prompted Dr. Stanton's remarks was A. T. & T.'s re-quest for a rate increase, esti-mated at nearly 44 per cost

for relaying city-to-city pro-grams of the three major television networks. The total cost to the three instor chains has been put at \$65-million, an in-crease of \$20-million.

Observers of the continuing controversy over satellite con-numications were intrijued by the statement of Constitution over goas private or anization over has claimed privation over domestic satellites.

Only time will tall, che sat-work observer taid, vista a Connat contemplates u carteding A. T. & T. to relay comestic programs.

May De Mey to Sarthyd

Frivately, many retworks sta the economic edvantage to re-ning their own satellite pra-tom as essential to their the mate survival.

Initis Surviva. United Press International the news egency, endored Dr. Stanton's proposal and hepet the press would gain recess to two private samplers stands the continent rule thereby reduce journalistic trans faite costs.

One communications engineer

said there was no reason that a domestic satellite system could not have at least 12 chancould not have at loss 14 could usle and invite others to partic-pate on a provide forsis. He added, however, that he could environ antituit complexities if there were not enough row

If there were not enough reasons to satellites. The predicted that many la-dustrial concerns, noticity the alrines, might so it the string right of access to a priving satellite system and predicted that they would have no these that they would have no these that they would have no these that they systems also might want room for distribution of progress of their own cright-tion, he noted.

progress of their own origina-uon, he noted. A demestic satellite system has been proposed and analyzed for nearly five years, but it was enreed that Dr. Stanton had to nic d renewed in the provide the ly because cost consolates on costs are determined to surply technology to have cover the technology to keep commenpontes.

Comsat alaska Comm

October 13, 1969

Dear Mr. Gravel:

Your letter for the President regarding the Communications catellite Corporation has been referred to me for further consideration. We are indeed pleased to have your views.

As you point out in your letter, the communications industry is very complex and very interconnected. The Communications Satellite Act of 1962 tried to grapple with many unknowns in setting up the Communications Satellite Corporation. The Act has been very successful in providing for rapid introduction of satellites into international communications, and this has been of great benefit in tieing the United States to the rest of the world. It is entirely appropriate that seven years later we review the role of satellite communications within the United States and internationally, and consider whether or not any changes may be in order.

You can be assured that we are giving your views serious consideration.

Sincerely,

Peter M. Flanigan Assistant to the President

Honorable Mike Gravel United States Senate Washington, D. C.

cc: Mr. BeLieu Mr. Flanigan Mr. Whitehead Mr. Kriegsman Central Files

CTWhitehead:ed

10/10/69

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To: Mr. Flanigan

From: Tom Whitehead

Thought you should answer this.

October 10, 1969

Doar Mr. Gravels

Your letter for the President regarding the Communications Satellite Corporation has been referred to me for further consideration. We are indeed pleased to have your views. As you point out in your letter, the communications industry is very complex and very interconnected. The Communications Eatellite Act of 1962 tried to grapple with many unknowns in setting up the Communications Satellite Corporation. It is entirely appropriate that seven years later we review the role of satellite communications within the United States and internationally, and consider whether or not any changes may be appropriate. The Act has been very successful in providing for rapid introduction of satellites into International communications, and this has been of great benefit in ticing the United fintes to the rest of the world.

Do assured dut we are giving your views serious consideration.

Singraty,

Peter Flanigan Assistant to the President

Cong.

Honorable Mike Gravel United States Senate Washington, D. C.

cc: Mr. Kullea b.r. Mairan Mr. Whitehead Mr. Kriegsman Central Files

CTV: hitehead:cd

October 7, 1969

Dear Mike:

Thank you for your letter to the President in further reference to the matter of Alaska Satellite communications.

I know the President will be interested in having your additional views on this matter and you may be assured they will be given careful consideration.

With warm regard,

Siacorcly,

Renach E. Readen Deputy Acclutant to the Decklerat

Honorable Mike Gravel United States forms Vashington, D.G.

bee: w/incoming to Clay Whitehead for FURTHER ACTION

KEDDELT CONS

Thursday 10/2/69

2317

A Berlin ..

3:10

Checked with Eloise Frayer re the letter to the President dated 9/26 from Sen. Mike Gravel re Comsat and Alaska Communications.

She indicated the mail room received it last night; they just got the letter today. Mr. BeLieu will send an interim reply and will send the letter on to you for further draft reply.

Reserved 10/10/69

in Two office

1 Sept 69

Enited States Senate

MEMORANDUM

Dr. Clay T. Whitehead The White House

Tom,

F.Y.I.

B. W. Poirier

. .

Aniled States Seraie

WASHINGTON, D.C. 20510

September 26, 1969

The President The White House Washington, D.C.

ALASKA

Dear Mr. President:

At the moment the White House has several study groups mobilized to grapple with the domestic satellite issue, the Alaska satellite requirement, and Alaskan communications generally.

I would like to bring to your personal attention some existing deficiencies. I hope you will insure that your study groups not overlook appropriate corrective action. It is extremely important that this be done in a timely manner to avoid any agreements within the International Communications Satellite Conference (INTELSAT) which would be detrimented to the United States or to any region of the United States.

The complexity of the issue precludes a detailed presentation in this letter, but a few major elements should be identified. A brief discussion will illustrate their impact on the issues and on the public's right to finally be blessed with the rewards of its investments in space research.

I feel confident your review will bring you to the conclusion that:

- the Communications Satellite Corporation is unmanageable in its present form with industrial compatitors on its board of Ciractors.
- the Communications Satellite Corporation, as now chartered, cannot serve as an international agent and act simultaneously as a responsive and successful domestic institution.

- the United States should assure that the eventual INTELSAT agreement will not impede full and free utilization of satellite technology for domestic regional or domestic national public communications.
- the widest public access to aducational and public broadcasting is the highest priority in the land for domestic applications of satellite communications.

In reviewing the hearings that led to enactment of the Communications Satellite Act of 1952, the record reveals the difficulty of legislating a new technology about which so little was then known. The main thrust was to instrumentalize American leadership in international application of the new science. Today we can look on the Act with far more expertise.

The Communications Satallite Corporation (COMSAT) has been seriously hindered by foreign governmental interests in lucrative submarine cables and their inflated profits. COMSAT has on its board of directors industrial representatives of compatitors who have often litigated in opposition of COMSAT. It is little wonder that public COMSAT stockholders have not enjoyed a return on their investments. Moreover, the instrict public which paid for the research locating to this science has yet to enjoy continuous domestic banefits.

Yet the United States by its Memorandum of Understanding with India of September 18, 1969, will provide domestic services to that country by 1972 through a NASA satellite. Without cuarrelling with the generous and reasonable India project, it is periodomical that the United States has not been able to cope with her own applications.

The domestic issue has been permitted to stick in a quagmire of competitive, vested interest of network broadcasters and communications curviers. The profitective has dominated the issue through devices of international commitments, technical regulations and other machinations to keep the issue boiling in uncertainty.

This national dispute is impacting disastrously on critical needs of our society for public, cultural telecasting and for scholarly exchanges between our academic institutions. It delays vitally needed solutions for certain regions such as Alaska or our overseas possessions like American Somoa.

I urge you, Mr. President, to offer amendments to the existing law which will provide the organizational structure, independent of foreign interests, to bring domestic satellite communications to the American public.

With kind regards.

Very respectfully.

Milta Gruval

COMMUNICATIONS SATELLITE CORPORATION

LUCIUS D. BATTLE Vice President for Corporate Relations

September 19, 1969

Dr. Clay T. Whitehead The White House Washington, D.C. 20500

Dear Tom:

I attach a copy of Jim McCormack's response to Senator Gravel. You will note that we ended up referring to the position Comsat had taken with respect to the White House study. We did not, however, mention a letter, and I hope that this reference, which we considered necessary, will not stir up interest in our full position.

If you have any questions, please call me.

Best regards.

Sincerely,

Lucius D. Battle

Attachment

COMMUNICATIONS SATELLITE CORPORATION

JAMES McCORMACK Chairman

September 18, 1969

The Honorable Mike Gravel United States Senate Washington, D.C.

Dear Senator Gravel:

This is in reply to your letter of September 16 strongly attacking Comsat for appearing "to be engaged in a deliberate campaign to undermine" satellite communications for Alaska and for a "regressive position (which) is seriously impairing the development of an adequate communications system for Alaska." As painful as I find it to have to express one hundred percent disagreement with these statements, it would be even more painful to let them stand unchallenged on the record.

As the one U.S. communications entity solely devoted to progress in satellite communications, we can assure you that we have, from the beginning, actively pursued every visible opportunity for promoting satellite communications for Alaska.

Until the award of the sale of the Alaska Communications System to RCA, our efforts of necessity were confined to the area of our authorized activities, that is, interstate and international communications via an INTELSAT satellite. Even so, cur enthusiastic efforts were unavoidably somewhat retarded by the concern of the Air Force managers of ACS that our application for an Alaska earth station might adversely affect the sale of ACS as directed by the Congress. The approval of the Talkeetna earth station by the Federal Communications Commission therefore came a good many months later than we had hoped for, but at least it was approved, and construction is now well along. In this connection, we should acknowledge the extensive help and support we received in this matter from two successive governors of Alaska and the many good citizens who have served on their communications task force.

We also want to emphasize again, as we have done many times in the past, that we have always regarded the Talkeetna station not just as a facility to improve interstate and international communications but even more importantly as the potential hub of an intra-state system for the happy day when U.S. domestic satellite communications may be authorized.

Accepting the disadvantage of adding even more bulk to this letter, I add two enclosures. The first is a copy of my letter to Mr. Robert W. Sarnoff, President of RCA, on the event of the announcement of the ACS award to RCA. As you will see, I urged with all of the persuasion at my command the immediate commencement of joint planning for "satellites for communications within Alaska."

The second enclosure presents an excerpt from the position taken by Comsat with respect to the White House domestic satellite communications study presently under way. As you will see, we put primary emphasis on the importance of an early decision in this matter because of its very great bearing on the future of Alaska communications.

Let me now turn to the specifics of your letter which are the apparent basis for your charges, to which my preceding comments relate. You refer to a press report of statements made by a Comsat official, Mr. William Miller, during his and my recent visit to Anchorage to participate in a public forum on the potential of satellite communications in Alaska. Comsat began discussions on this subject with the late Senator Bob Bartlett in the fall of 1967. We have been involved in various discussions since that time with members of the Alaskan Congressional delegation and with various state and federal officials.

Our purpose has been to develop various satellite system configurations which -- operating in conjunction with existing and possible future terrestrial facilities -could assist in resolving the communications needs of Alaska. Mr. Miller's comments in Anchorage were made in accordance with this purpose.

His speech in Anchorage was a continuation of Comsat's desire to present as accurate a portrayal as possible of the variety of satellite systems which can be established in Alaska as well as an estimate in each case of the costs which would be involved.

In short, his presentation was intended to describe several of the many alternative system configurations which appear, in Comsat's judgment, to provide suitable communications services for Alaska from an operational standpoint.

Mr. Miller used the term "optimum solution" in reference to several configurations ranging in cost from \$10 million to \$20 million per year.

The configuration estimated to cost \$10 million per year would provide approximately 300 voice channels and one dedicated television channel through a 124-station network.

The system estimated at \$20 million per year would provide about 1,500 voice channels and one dedicated television channel through a 163-station network, including six of the very large, high-capacity antennae. Quite obviously, there are other ways in which satellite communications could be introduced in Alaska which would entail less annual costs. We do not deny this fact. Any less expensive proposals, however, would provide a satellite system of less capacity (either in space or on the ground or both) and thus fewer communications services for Alaska.

In your letter you refer to lesser cost figures confirmed by the highest authorities in the field. I am unfamiliar with the specific figures to which you refer and would be grateful if you would make them available to us with an indication of what services they would encompass and in what time frame, both factors being important to any accurate determination of cost for a satellite system for Alaska.

You may recall that -- as the result of a specific request from your office -- Comsat made a presentation to the Alaskan Congressional delegation on July 31 at the Capitol in which we described a system costing less than \$10 million a year, designed to meet your estimates with respect to what Alaska could afford.

Mr. Miller's recent presentation in Anchorage was consistent with the July 31 presentation. His more recent cost estimates simply reflected examples of more comprehensive satellite systems which, in our judgment, would provide a more favorable solution to Alaska's present and future communications requirements.

With respect to your request for a cost effectiveness study on the subject of satellite communications in Alaska, it has been my opinion that the various alternative systems which Comsat has presented publicly on many occasions had fulfilled your request. If such is not the case or if we have failed to provide you with sufficient material, including cost estimates, on these various systems, I do hope you will accept our apology. We will be happy to review any of these presentations with you. Moreover, we are open to any suggestions you might have on any other more effective ways in which Comsat can promote the solution of Alaska's communications deficiencies by way of satellite communications.

I can assure you in all sincerity, Senator, of our most earnest intentions on this subject, and that we shall continue to make every attempt to work with all interested parties -- including state and federal agencies -- in an effort to bring satellite communications to your state by way of a system which is both operationally suitable and economically attainable.

Sincerely,

Jans Mc Commonly

James McCormack



COMMUNICATIONS SATELLITE CORPORATION

26 June 1969

Mr. Robert W. Sarnoff President Radio Corporation of America 30 Rockefeller Plaza New York, New York 10020

Dear Mr. Sarnoff:

The announcement in this morning's press of RCA's successful offering for the Alaska Communications System gives me the reason for writing to you to emphasize the aspect of communications in our 49th state which seems to me to be of greatest interest. That is satellites for communications within Alaska.

As you may be generally informed, Comsat has made a major effort over the past two years to initiate satellite communications for Alaska. Handicapped by the absence of a commercial partner with which to work while the Air Force system was up for sale, we have nevertheless succeeded at least in securing approval by the Federal Communications Commission of an interstate/international earth station at Talkeetna.

To our way of thinking, however, this is only the beginning. This station can serve equally well as the keystone in a network of ground facilities for Alaskan state-wide services, and that is the point I want to emphasize.

We in Comsat are convinced that with forward-looking joint planning RCA and Comsat can in one giant stride help move Alaska communications from the poorest in our nation to a place along with the best. Educational broadcasting can be provided for, as can all of the other tools of economic and sociological development which depend in a substantial way on good communications. Mr. Robert W. Sarnoff 26 June 1969

We believe moreover that the necessary cooperation will be forthcoming from federal and state authorities as a comprehensive and feasible joint satellite-terrestrial plan is produced.

I want to give all the weight I can to the idea of a major joint endeavor by RCA and Comsat toward the wide-scale introduction of satellite communications in Alaska. We should definitely include the possibility of a satellite designed specifically for Alaska, as well as the prospects for adding Alaska to the proposed overall U.S. domestic satellite system. A specially tailored Alaskan satellite system could well be the pilot for the larger system, an idea with very interesting potentials.

Sincerely,

S/ James McCormack

Excerpt from position taken by Comsat with respect to domestic satellite communications in connection with study by White House:

"In the case of Alaska, a critical time is at hand to determine the most effective and economical configuration for Alaska's internal and external requirements. The Alaska Communications System has recently been awarded to RCA, with a commitment by RCA for expansion, improvement of service and reduced rates. A major satellite earth station is under construction at Talkeetna, situated between Anchorage and Fairbanks. Proposals for an early capability for satellite communications in Alaska are under study by Comsat, NASA, RCA, and the responsible officials and representatives of Alaska. Any proposal that looks toward the maximum use of satellite links for Alaska's internal and external requirements, and toward an early connection of both with a domestic system, will work toward much improved and lower cost communications for the 49th state. Failure to provide timely access to satellites will chain the chief Alaska traffic streams to conventional facilities and will in the end make all communications more expensive for users in Alaska. The communications requirements of Alaska should be considered as an urgent, integral part of the domestic inquiry."

MIKE GRAVEL

Almited States Senate

WASHINGTON, D.C. 20510

September 16, 1969

Mr. James McCormack, Chairman Communications Satellite Corporation 950 L'Enfant Plaza, S.W. Washington, D.C.

A-KI-I

Dear Mr. McCormack:

The <u>Anchorage Daily Times</u> of August 30th quoted William Miller of your organization as advising Alaska that an "optimum solution" for satellite communications would cost between \$10 and \$20 million" annually just for the satellite and the earth stations.

This is an outrageous statement, and I am surprised that you permit such statements by a purported expert. Certainly there is no limit to the amount of money that can be spent on communications. But the "optimum solution" is far below the \$10-20 million annual range. Considering the number of meetings we have had on this point I cannot excuse Comsat's public insistence on an inflated figure as a case of simple misunderstanding. Comsat appears to be engaged in a deliberate campaign to undermine the immediate application of satellite communications in Alaska for the full range of intra-Alaska communications services.

The cost figures that I have, confirmed by the highest authorities in the field, indicate that Alaska could have a comprehensive communications system within a price range that would make immediate economic sense. In meetings with your representatives, these cost figures have never been denied.

Since February I have been attempting to secure from your organization a cost effectiveness study that

LOPI PK

Mr. James McCormack

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has been repeatedly promised as forthcoming. I trust that its eventual appearance will withstand the light of public examination.

Comsat's regressive position is seriously impairing the development of an adequate communications system for Alaska. I challenge Comsat to publicly justify the \$10-\$20 million annual program Mr. Miller so blithely talks about in print.

Sincerely,

Mike Gravel

cc:

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Members of the Board of Directors of the Communications Satellite Corporation

Members of the Federal Communications Commission

Dr. Clay T. Whitehead, Office of the President General James D. O'Connell, Director, Office of Telecommunications Management, Executive Office of the President

Satellite Communication System For The State Still Is In Doubt

Information on satellite Communications Satellite communications for Alaska Corp. was aired in the past two days,

but at the close of the first Alaska conference on satellite telecommunications, it was million annually for just the still doubtful when the state satellite and earth stations.

could expect such things as television.

The proposed satellite communication network for the state was described as the "optimum solution," by William Miller, project

However, he said the network would cost some where between \$10 to \$20

The smaller price he quoted live television and educational would provided limited service to a limited area, while the higher cost would bring greater service to a larger area. At the close of the conference Friday afternoon, Chairman George Sharrock.

A vast amount of expert manager for the also chairman of the Alaska the meeting provided a "better perspective of our problems" in communication and "better ideas on how to solve them."

He said committees organized during the course of the conference would continue to look into such aspects as the realistic requirments of the state, the amount of revenues needed and sources for these revenues, possible use of a commercial system by the conventional,

and satellite systems and a realistic timetable for full satellite communication.

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Committee reports were the last item on the agenda Friday. The committees had been

formed primarily to investigate aspects of the satellite demonstration program. Sharrock said, however, that until "we know where the money for this is coming from," he could not state definitely that the demonstration, using television as an educational medium, would go ahead.

The cost of this demonstration, according to Dr. Charles Northrip of the educational broadcast commission, who headed the requirements committee, would be in excess of \$2 million. Although the state would obviously participate in the funding of this program to some extent, he said, "it is premature at this time" to outline full funding. More exploration, said Northrip, was needed in this area.

ANCHORAGE DAIL

Anchorage, Alaska, Saturday Evening, August 30, 1969

91st CONGRESS 1st Session

S. 2928

IN THE SENATE OF THE UNITED STATES

SEPTEMBER 18, 1969

Mr. GRAVEL introduced the following bill; which was read twice and referred to the Committee on Commerce

A BILL

To amend the Communications Satellite Act of 1962 to permit State ownership of satellite terminal stations.

Be it enacted by the Senate and House of Representa tives of the United States of America in Congress assembled,
 That (a) section 103 of the Communications Satellite Act
 of 1962 (47 U.S.C. 702) is amended by—

5 (1) striking out the word "and" where it appears
6 at the end of paragraph (9) thereof and inserting in
7 lieu thereof a period; and

8 (2) adding at the end thereof the following new9 paragraph:

10 "(11) the term 'State' means the government of a11 State of the United States, the government of a political

II

subdivision of any such State, or an instrumentality of the government of any such State or political subdivision.".

4 (b) Section (c) (2) of that Act (47 U.S.C. 721 (c)
5 (2)) is amended by inserting therein, immediately after the
6 words "authorized carriers", the words "and States". And
7 that the word "system" in both places of this subparagraph
8 will be changed to "systems".

9 (c) Section 305 (a) (2) of that Act (47 U.S.C. 735
10 (a) (2)) is amended by inserting therein, immediately after
11 the words "communications common carriers", a comma and
12 the words "to States,".

1.

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COMMUNICATIONS SATELLITE CORPORATION

JAMES McCORIAACK Chairman

20 August 1969

Mr. Horace P. Moulton Vice President and General Counsel American Telephone and Telegraph Company 195 Broadway New York, New York 10007

Dear Horace:

You may have noted in Chairman Hyde's dissent in the recent MCI decision that he "strongly favors introducing new competition to the present carrier system, such as through domestic satellite authorization".

I take for granted, in light of the practicalities and of all FCC decisions to date affecting Comsat/carrier relationships that he is not thinking of Comsat, alone, trying to compete with the carriers. I would certainly hope, further, that he is not thinking of separate satellite systems outside the Comsat/carrier context, at least initially. This would leave open mainly (optimistically) the possibility of some sort of a Comsat/carrier consortium, structured perhaps rather like the preliminary concepts I have discussed with Dick Hough and Lowell Wingert over the past three years and more.

To meet the "competition" point, however, I believe it is apparent we will have to be more flexible than evidenced in Comsat's earlier filings as to access to the system and maybe other conditions of its use.

I don't mean to exaggerate the importance of this isolated comment by Mr. Hyde. It does, however, as we know, reflect a view rather widely held outside the carrier community, the total weight of which must have supplied some of the reasons why the government has so long delayed in authorizing anyone to start anything. Mr. Horace P. Moulton 20 August 1969

It was partly with this thought in mind that I recently said to Dick Hough that I thought we will be well advised in any new plan for domestic services to take a pretty friendly view toward the interests and claims of the major potential customers on the question of access to the system, whether or not in the end they may find that the privileges produce fewer practical advantages for them than they may now visualize. I think Dick did not disagree with me.

I fully recognize that of all the parties at interest in this matter only Comsat is really in a hurry, having nothing to gain by delay. I hope, however, that AT&T will continue to see advantages in getting something reasonable started reasonably soon.

In any case, <u>if</u> Comsat can succeed in being nominated to produce a new domestic scheme, in consultation with everybody of course, it seems to me imperative that the scheme be as flexible as possible as to the ways in which at least the large users may use the system. The goal would be to present to such interested parties the concept of a common-user system offering to them a significant degree of independence in the ways in which they might be served by the system.

Sincerely,

Yim

CC: Mr. Harold M. Botkin Mr. James E. Dingman Mr. R. R. Hough

COMMUNICATIONS SATELLITE CORPORATION

August 18, 1969

HOBERT E BUTTON The Special Assistant to the Chairman

Dear Walter:

The attached constitutes technical information to be submitted to the FCC as the basis for our contention that it is feasible, without undue effort, to identify earth station sites which are suitable to serve the Domestic Pilot Satellite System, and which would be located in the vicinity of even major U.S. cities.

The study deals with the avoidance of mutual interference between earth stations and radio-relay stations in the frequency bands presently shared by the two services, and in particular with the problem of rain scatter interference.

Based on measurement results and theoretical analysis, 47 sample sites near 30 major U.S. cities were isolated and shown to be free from mutual harmful interference. The relative ease with which the site selection was accomplished leads us to believe that a) many more suitable locations could be found near the cities investigated, and b) sufficiently many suitable sites could be found near most other cities in the United States.

It occurred to me that this material might be of use to you as background bearing on the domestic satellite system.

Sincerely,

Attachment

Mr. Walter R. Hinchman Room 110 Executive Office Building Washington, D.C. 20500 ASSESSMENT OF MUTUAL INTERFERENCE BETWEEN EARTH STATION SITES OF A DOMESTIC SATELLITE COMMUNICATIONS SYSTEM AND TERRESTRIAL RADIO-RELAY SYSTEMS

1. INTRODUCTION

As part of the preparatory studies for the implementation of a domestic satellite communications pilot system as proposed by the Communications Satellite Corporation, a detailed assessment of interference probability between 47 receive-only earth station sites* and the respective surrounding terrestrial radio-relay systems was made. The result, based on conventional interference calculation methods and criteria of tolerable interference in accordance with overall circuit quality requirements at 4 and 6 GHz** indicated that none of the sites would cause or be subject to harmful interference.***

Recently, an additional investigation into the interference probability expected as the result of hydrometeor scatter between the earth station sites and the terrestrial radio-relay facilities was completed. The following discusses the findings of this study.

For derivation of 4 GHz interference criteria see Annex I. *The computations assume co-channel interference over the entire 4 or 6 GHz band with each radio-relay facility.

Page 2

2. HYDROMETEOR SCATTER INTERFERENCE

The results of past work on the scattering of microwave energy by hydrometeors* have been used to derive a coordination model which, when applied on a case-by-case basis to each earth station site and each nearby terrestrial radio-relay station, offers some estimate of the potential interference threat by the same criteria which were applied to the "conventional" modes of propagation.

Annex II discusses the derivation of the coordination model. It is believed that the measured data used for the model are representative for the hydrometeorological environment of most of the earth station sites; however, several simplifying assumptions** in the model tend to render it pessimistic so that in practice heavier rainfall conditions than assumed could still be tolerated. Preliminary measurement programs tend to support this contention.

Interference calculations made by means of this model and the criteria developed in Annex I show that no harmful interference is expected to result from radio-relay emissions into any of the earth station sites at 4 GHz.

*"Precipitation Scatter Interference between Space and Terrestrial Systems", prepared for NASA by Communications & Systems, Incorporated, under Contract NASw-1216.

**Assumption of "worst case" antenna pattern envelopes, neglect of signal attenuation over the scatter paths, and assumption of high temporal correlation of the hydrometeor density-altitude profile.
A potential expansion requirement of the "receive-only" sites to incorporate transmit capabilities at 6 GHz suggests that the interference probability into terrestrial radio-relay stations be also investigated.

It was found that the transmission of message carriers. produces a sufficiently low spectral density to preclude harmful interference through the hydrometeor scatter mode, and the same holds true for TV transmissions under the proviso that no more than 10% of any month TV will be transmitted from any of these sites.

3. CONCLUSIONS

The results of the analysis discussed in the preceding were obtained in much the same manner as, but with more comprehensive treatment of certain technical factors than previous analyses which supported, successfully, applications to the Commission for permission to construct and operate satellite communications earth stations in the shared 4 and 6 GHz bands. Interference predictions for 47 domestic earth station sites indicate that no harmful interference from and into terrestrial radio-relay stations within the shared 4 and 6 GHz bands is to be expected.

The identification of the 47 interference-free sites is the result of a three-step study during which several potential sites near each of 30 major U.S. cities were "cleared" from map information alone, and subsequently visited to isolate one or two acquirable and physically desirable sites in each case. Approximately half of the initially chosen locations had to be discarded after inspection for reasons other than potential interference. The final step was, where necessary, a recalculation of interference probability using specific information gathered during the inspection.

The following Table lists most of the cities near which sites were selected; median distance between the sites and the center of the nearest city is 22 miles:

Albuquerque, New Mexico Bakersfield, California Billings, Montana Boise, Idaho Butte/Helena, Montana

Denver, Colorado El Paso, Texas Eugene, Oregon Eureka, California Fresno, California

Grand Junction, Colorado Great Falls, Montana Idaho Falls, Idaho Las Vegas, Nevada Medford, Oregon Phoenix, Arizona Rapid City, South Dakota Redding, California Reno, Nevada

Riverton, Wyoming Sacramento/San Francisco, California Salt Lake City, Utah San Diego, California Seattle, Washington

Spokane, Washington Tucson, Arizona Yakima, Washington Yuma, Arizona

ANNEX I

INTERFERENCE CRITERIA FOR EARTH STATION RECEIVERS IN THE SHARED 4 GHz BAND FOR A DOMESTIC SATELLITE COMMUNICATIONS SYSTEM

I. INTRODUCTION

Criteria of allowable interference from radio-relay transmitters into telephone channels of the communication-satellite system in the shared 4 GHz band are based on the premise that interference should not contribute more than a small percentage of the total channel noise during most of the time, and should not contribute more than fractionally to the small percentages of time during which relatively high channel noise levels are allowed.

This premise was agreed on during the earlier days of satellite communications when the extent of fading over a satellite link was not yet well known and when radomes were still considered necessary to protect an earth station.

In the meantime substantial operating experience with satellite circuits through radome-less antennas has been gained, and while carrier fading and noise increase has been shown to be primarily due to a rainy environment, the effect is relatively small.

It appears, therefore, desirable to investigate whether for small percentages of the time the time fraction assigned to interference noise may be reassessed.

II. DISCUSSION

Rain absorption in the up- and down-links may be assumed to be statistically independent of each other; noise temperature increase must be assumed to be correlated with down-link absorption.

Figure 1 shows rain absorption at 4 and 6 GHz along a 20° elevated ray path as a function of surface rainfall rate. The curves were derived from Figure 2 of C.C.I.R. (Oslo, 1966) Report 234-1 under the assumption of a 5 km long equivalent rain bearing distance (NBS Tech. Note 101 [Revised]).

The receiving system noise temperature of an earth station in the absence of rain is given by:

$$T_{o} = T_{r} + \left(\frac{W-1}{W}\right) T_{W} + \frac{T_{s} + T_{g}}{W} \circ K$$
(1)

and in the presence of rain by:

$$T_{p} = T_{r} + \left(\frac{w-1}{w}\right)T_{w} + \frac{T_{g}}{w} + \frac{T_{s}}{aw} + \left(\frac{a-1}{aw}\right)T_{rain} \circ K \quad (2)$$

where

Tr = noise temperature of receiver and following stages, °K; w = waveguide loss factor; Tw = waveguide temperature, °K;

- T_g = ground contribution to antenna noise temperature, °K;

= rain absorption factor;

Train = effective temperature of the rain, °K.

If T is made artificially larger by omitting, in equation (2), a from the next-to-last right hand term, and \underline{w} from the last right hand term, one obtains:

$$T_p' = T_0 + (\frac{a-1}{a}) 290 \ ^{\circ}K > T_p$$
 (3)

assuming, conservatively, that the rain has a noise temperature of 290°K. This equation permits the conversion of the 4 GHz absorption values to receiving system noise temperature.

Figure 2 shows T_p'/T_o versus surface rainfall rate for $T_o = 200$ °K. Since it has to be assumed that down-link absorption and noise temperature increase are correlated, the corresponding resultant increases in channel noise are combined. If the nominal (no fading) signal/noise ratio is called s_o/n_o and if it is assumed that the nominal thermal noise in the down-link accounts for no more than 80% of the total noise, the signal/noise ratio for a rainfall environment

which produces an attenuation "a" can be computed from

$$s/n = \frac{s_0/a}{n_0 (0.2 + 0.8 T_p'/T_0)}$$
 (4)

so that the total dB increase in channel noise (for a linear system) is

$$\Delta n = 10 \log \left[a \left(0.2 + 0.8 T_{\rm p}^{\prime} / T_{\rm o} \right) \right]$$
 (5)

Equation (5) is valid since up- and down-link fading are not expected to be correlated for small percentages of time.

Figure 2 shows An as a function of surface rainfall rate.

The distribution of surface rainfall rate believed to be extremely conservative for most areas of the world is shown in Figure 3. It is the cumulative distribution of one-minute hourly rates for New Orleans, Louisiana (Handbook of Geophysics and Space Environments, Air Force Cambridge Research Laboratories, 1965 edition, page 5 - 4).

Figure 4 shows the circuit noise objectives for the domestic system, assuming that, for 0.3% of any month, a noise power of 50,000 pWp could be tolerated. Interpolation between the 20% and 0.3% points is log-normal. Also shown in Figure 4 are the cumulative distributions of channel noise power due to up- and down-link fading, using the 6 GHz curve from Figure 1 and the Δn (4 GHz) curve from Figure 2 in conjunction with the distribution of Figure 3.

It can be seen that the percentage of time during which the channel noise power will exceed a value of 50,000 pWp as the result of up- or down-link fading is quite small (< 0.01% of the time, maybe twice to three times that for the worst month), so that as a consequence most of the percentage of time (0.3% of any month) during which the 50,000 pWp level may be exceeded may be allocated to interference.

A reasonable allocation of 0.25% of any month to 10 entries would result in an interference criterion of -130 dBW received interfering carrier power not to be exceeded for 0.025% of any month for each entry.



SURFACE RAINFALL RATE (mm/hr)

FIGURE 1.

ATTENUATION DUE TO ABSORPTION ALONG A 20° ELEVATED PROPAGATION PATH AS A FUNCTION OF SURFACE RAINFALL RATE.



SURFACE RAINFALL RATE (mm/hr)

FIGURE 2. INCREASE IN RECEIVER NOISE TEMPERATURE AND TOTAL DOWN-LINK NOISE AT 4 GHz AS A FUNCTION OF SURFACE RAINFALL RATE (NOMINAL EARTH STATION RECEIVER NOISE TEMPERATURE $T_0 = 200$ °K).



FIGURE 3. CUMULATIVE DISTRIBUTION OF INSTANTANEOUS SURFACE RAINFALL RATE AT NEW ORLEANS.



PERCENTAGE OF ANY MONTH

FIGURE 4. CUMULATIVE DISTRIBUTIONS OF TOTAL ALLOWABLE CHANNEL NOISE POWER AND OF FADING DUE TO UP- AND DOWN-LINK ABSORPTION.

ANNEX II

A MODEL FOR PRECIPITATION SCATTER INTERFERENCE COORDINATION BETWEEN DOMESTIC SYSTEM EARTH STATIONS AND MICROWAVE FACILITIES SHARING THE 4 AND 6 GHz COMMON CARRIER BANDS

The system transmission loss between a horizontally directed radio-relay antenna with gain g_m and a high gain (\geq 45 dB) earth station antenna whose main beam axes intersect under an angle θ , and whose main beam intersection volume ("common volume") is filled with a medium of effective bistatic radar cross section η is given approximately by:

$$L_{s} = \frac{163 u_{m} \sin \theta}{\eta \sqrt{g_{m}} \lambda^{2}}$$
(1)

with the assumption that for both microwave and earth station antennas the relationship between gain and beamwidth:

$$g\Omega^2 = \pi^2$$
 (2)

holds.

The unit of length (distance, wavelength, etc.) in equation (1) is [km]; λ is, as usually, the wavelength of the rf signal. The term u_m is the slant range from the microwave station to the beam axis intersection. Equation (1) loses its validity for small angles of θ ; but most earth station antenna main beams serving a domestic satellite communications system will have elevation angles of no less than 20°, and with the assumption that no measurable precipitation will occur above an altitude of 16 km, the smallest angle of θ observable will be 16.3°.

For the 4 GHz shared frequency band, the wavelength λ is 7.5 x 10⁻⁵ km, and g_m is customarily taken as 10,000 (=40 dB). Using these values, one obtains the curve of Figure 1 showing minimum values of $\eta L_s/\sin \theta$ as a function of slant range u_m. The term $\eta L_s/\sin \theta$ is the normalized unit radar cross section system transmission loss for beam axis intersection.

Altman* derives height profiles of reflectivity Z exceeded for small percentages of time, and incorporating all precipitation measured during the summer months. This model is likely to be representative of the Western and Northern U.S. and is being used here to assess transmission system loss to be expected over a precipitation scatter interference path, assuming that precipitation scatter is, most of the time, isotropic; i.e., that the bistatic radar cross section can be substituted by the reasonably well known backscatter cross section.

*"Precipitation Scatter Interference between Space and Terrestrial Systems", Communications Systems, Incorporated, prepared for NASA, Contract NASw-1216. Since beam altitude of a more or less horizontally launched microwave beam is related to ground distance from the microwave site in a unique way (ray tracing in a model atmosphere), the altitude profile of Z may be replaced by a distance profile. Likewise, the frequency-independent reflectivity Z may be replaced by the frequency-dependent unit volume backscatter cross section η .

Page 3

Since the criterion for co-channel interference into a domestic earth station which is exposed to potential interference from 10 radio relay transmitters is given by a pertransmitter interference level of -130 dBW not to be exceeded and a second for more than 0.025% of any month (see Annex II), and since an available rf power of 10 dBW at the radio-relay transmitter is a representative value, a system transmission loss of 140 dB to be exceeded for 99.975% of any month from 10 entries is equivalent to the above criterion.

Similarly, a 6 GHz equivalent criterion for potential interference from the earth stations into the radio-relay receivers is given by a system transmission loss of 132 dB to be exceeded for 99.9975% of any month for 6 entries of potential interference.

Figure 2 shows unit volume backscatter cross section as a function of slant range u_m not exceeded for 0.025% of any month at 4 GHz, and not exceeded for 0.0025% of any month at 6 GHz. Figure 3 shows the combination of Figures 1 and 2 to yield normalized* system transmission loss exceeded for the appropriate percentages of time versus slant range. These curves assume beam axis intersection.

For distances smaller than 180 km at 4 GHz, and 220 km at 6 GHz, some beam separation is required. In order to assess the effect of beam separation, it is necessary to manipulate equation (1) in a suitable way. To that end the gain/beamwidth relationship of equation (2) must be abandoned for one of the antennas; instead, its actual or approximated pattern must be integrated along the other antenna's main beam for which equation (2) is assumed to remain valid. This leads to the expression:

$$L_{s} = \frac{256}{\overline{\eta} \lambda^{2}} \cdot \left(\int \frac{g_{\psi} dx_{e}}{x_{m}^{2}} + \int \frac{g_{\phi} dx_{m}}{x_{e}^{2}} \right)^{-1} \quad (3)$$

if one stipulates that $\overline{\eta}$ constitutes an effective weighted mean value of unit volume radar cross section throughout the volume which contributes most to the integrals. Since, as will be seen, relatively small linear beam separations are of interest here, the unit volume radar cross section on the earth station beam axis, at the point of closest beam approach, may be used for $\overline{\eta}$.

*True system transmission loss divided by the sine of the scatter angle (sin θ).

$$g_{\psi} = \begin{cases} 0.25/\psi^{2.5}, \psi > .0145 \\ g_{m}, \psi \leq .0145 \end{cases}$$
 (4)

and manipulating the first integral of equation (3), one obtains the inequality:

$$\int \frac{g_{\psi} dx_{e}}{x_{m}^{2}} \leq \frac{1}{u_{m} \sin \theta} \int \frac{\pi/2}{\psi_{0}} \frac{0.25 \sin \psi d\psi}{\psi^{2.5} \sqrt{\sin^{2} \psi - \sin^{2} \psi_{0}}} = \frac{I(\psi_{0})}{u_{m} \sin \theta}$$
(5)

Page 5

wherein ψ_0 is the angular beam separation as seen from the microwave facility, and θ is redefined as the angle between the earth station beam axis and the ray from the point of closest beam axis approach on the earth station beam axis to the microwave site.

The second integral of equation (3) may be shown to conform to the inequality

$$\int \frac{g_{\phi} dx_{m}}{x_{e}^{2}} < \frac{g_{\phi 0} \pi}{d \cdot \sin \mu} = \frac{J}{d}$$
(6)

where d is the distance between earth station and radio-relay station, and μ is the angle between the microwave beam axis and the direction to the earth station as seen from the microwave site; it conforms to the inequality:

Page 6

$$\mu > Max(\psi_0, h(u_m)/u_m) = \mu_{min}$$
(7)

The antenna gain term g_{ϕ_0} is the maximum earth station antenna gain component in the direction of the microwave beam; it is a function of ψ_0 , as follows:

$$\phi_0 = \frac{u_m}{u_e} \left(\psi_0 - \frac{\Omega_m}{2} \right)$$
(8)

The function $h(u_m)$ is the altitude of a microwave beam at distance u_m from the microwave site, assuming a zero degree elevation angle in a CRPL Reference Atmosphere with $N_s = 313$.

It is now possible to reformulate equation (3) to read:

$$L_{s} = \frac{256}{\eta \lambda^{2}} \left(\frac{I(\psi_{0})}{u_{m} \sin \theta} + \frac{J(\psi_{0}, u_{m})}{d} \right)^{-1}$$
(9a)

or

$$L_{s} = \frac{163 u_{m} \sin \theta}{\eta \lambda^{2} 0.637[I(\psi_{0}) + J(\psi_{0}, u_{m}) \sin \theta u_{m}/d]}$$
(9b)

Equation (9b) is very similar to equation (1); the term \sqrt{g} is replaced by 0.637 times the term in square brackets. A

Page 7

further simplification in the direction of conservatism is possible since it is easy to see that the term u_m sin θ/d is equal to or less than unity. Hence:

$$L_{s} \geq \frac{163 u_{m} \sin \theta}{\eta \lambda^{2} 0.637 [I(\psi_{0}) + J(\psi_{0}, u_{m})]}$$
(10)

This leaves only an assessment of g_{ϕ_0} . Measurements on large diameter (>8 meters) antennas have shown that the smoothed directivity patterns of such antennas may be represented by the equation -

 $g_{e} = \begin{cases} 0.063/\phi^{2.5}, \ 0.0174 \le \phi \le 0.84 \\ 0.1, \qquad \phi > 0.84 \end{cases}$ (11)

The value of g_{ϕ_0} is to be computed from equations (8) and (11). The beamwidth Ω_m in equation (8) can be derived from equation (2) with knowledge of the microwave antenna gain g_m (here assumed to be 40 dB).

It turns out that, for $\psi_0 \ge 2^\circ$ and $u_m \le 300$ km, ϕ_0 is larger than 0.84 so that in that range $g_{\phi_0} = 0.1$.

Likewise, for $u_m \leq 300$ km, $h(u_m)/u_m$ is less than .035 (2°), so that $\mu_m = \psi_0$.

This permits $J(\psi_0, u_m)$ to be expressed as:

$$J \leq \frac{0.1 \pi}{\sin \psi_0} \tag{12}$$

for $\psi_0 \ge 2^\circ$ and $u_m \le 300$ km.

Hence, the system transmission loss may be written as:

$$L_{s}(\psi_{0}) \geq L_{s}(\psi_{0} = 0) \cdot \frac{\sqrt{g_{m}}}{0.637[I(\psi_{0}) + 0.1 \pi/\sin\psi_{0}]}$$
(13)

where $L_{s}(\psi_{0} = 0)$ is the systems transmission loss for beam axis intersection, see equation (1) and Figure 3.

Figure 4 shows the fraction in inequality (13) in terms of its decalogarithm which describes directly the discrimination loss in dB as a function of beam axis separation angle ψ_0 (in degrees). The values between $\psi_0 = 0.1^\circ$ and $\psi_0 = 2^\circ$ were interpolated to conform with the axis intersection case.

The curve of Figure ⁴ may be used to determine, for each slant range u_m , the angular discrimination ψ_0 required to make up the system loss deficit encountered for the on-axis case for that slant range. E.g., Figure 3 yields, for a $u_m = 100$ km, in the 4 GHz case, a deficit of 5.3 dB to meet the criterion ($\theta = 90^\circ$). Figure 4 shows that a discrimination angle of $\psi_0 = 2.6^\circ$ will just provide the necessary additional loss.

If it is found that, in a given case, the 4 GHz criterion for interference from radio-relay stations into an earth station is not met for one such radio-relay station, but with a large margin for all others, it is permissible to assign the entire interference allowance (0.25% of any month, Annex II) to that one entry. This would permit to relax the level of the criterion by at least 9.0 dB.

The permissible trade-off between level of the criterion and the number of interference entries, for hydrometeor scatter, is shown in Figure 5.

Similarly, if an earth station transmits only 10% of any month, a 9 dB higher interference level is tolerable at a terrestrial radio-relay receiver when the interference is due to hydrometeor scatter.



SLANT RANGE um (km)

FIGURE 1.

NORMALIZED SYSTEM TRANSMISSION LOSS FOR UNIT RADAR CROSS SECTION VERSUS SLANT RANGE.



VERSUS SLANT RANGE.



FIGURE 3.

NORMALIZED SYSTEM TRANSMISSION LOSS VERSUS SLANT RANGE.







FIGURE 5.

EQUIVALENT CRITERIA RELAXATION VERSUS NUMBER OF SIGNIFICANT INTERFERENCE ENTRIES AT 4 GHz.

Statement by the Chairman to Shareholders



James McCormack, Chairman

Your presence here this afternoon testifies to your special interest in COMSAT and the work we are doing. For that reason, we will assume that you have seen our annual report. Dr. Charyk and I will accordingly try here to supplement it and not duplicate it.

Speaking of the annual report, the center spread must have given great satisfaction to all who are interested in the development of the global satellite system. Pictured there are the 23 land-based earth stations which were in actual operation around the world at the time the report was put together. They extend throughout Western Europe; in the Western Hemisphere from Nova Scotia to Chile; and in the Pacific area from our west coast to as far away as Thailand. Within the next year, the number of stations will have increased to more than 40.

This is the visible proof of the commitment to this marvelous new technology by the governments and telecommunications authorities of many countries.

Sixty-eight nations are now members of the International Telecommunications Satellite Consortium (INTELSAT), in which COMSAT is the U.S. working participant and designated by the Secretary of State as the U.S. representative.

The idea of satellite communications has from the beginning been a magnet. With successful execution of the technology, with satellites and earth stations that really work, the idea has become a powerful, practical force in the development of world communications. The remaining key to the success of the consortium has been organized effort.

Earth Station Development

Promotion of INTELSAT membership and of the building of earth stations where they make economic sense has been a major program on COMSAT's part. At all times since INTELSAT was formed we have had assigned to the task three or four first-rate staff officers, whose travel schedules have no doubt raised questions with their families as to whether Mother might just as well have married a traveling salesman or a sailor.

In this program, I want to note especially the great cooperation we have had from the State Department, without which our endeavor could not have succeeded. The group at State, headed by Mr. Frank Loy, and the U.S. ambassadors and embassy staffs around the world, have been consistently generous in their support of our activity. This teamwork affords an example of what can be accomplished when the interests and abilities of the government are put together harmoniously with those of private enterprise.

As most of you will know, the consortium now operates under a set of Interim Agreements, negotiated in 1964 to remain in force for five years or until superseded by more permanent arrangements. COMSAT, by the terms of the Communications Satellite Act of 1962, is the U.S. participant. In addition, by the terms of the Interim Agreements, COM-SAT serves as manager for the consortium. The primary responsibilities of the manager are for the satellites: research, development, procurement, arrangements for NASA launch services, and technical operation of the resulting system. The manager has also performed a number of duties in the fields of administration, finance, coordination of world traffic requirements, public information, and the like.

International Conference

The Interim Agreements called upon the United States to convene a Conference early in 1969 to work on the so-called Definitive Arrangements. This was done, and the first session of the Conference was held in Washington during the last week of February and the first three weeks of March. It is said to be the largest international conference ever held here. In addition to the 68 member nations, more than 20 other nations were represented by observers.

The U.S. Delegation was headed by Mr. Leonard Marks who was appointed with the rank of Ambassador by President Johnson last fall. Ambassador Marks performed distinguished service during the first session, resigning at the end of it to return to private life.

At the end of the four weeks, the Conference agreed upon the appointment of a Preparatory Committee to continue discussions during the months immediately ahead, with a view to reconvening the full Conference when the work of the Preparatory Committee so justifies, perhaps in November.

A great deal was accomplished at the first session of this Conference. I would say that the principal accomplishments were three.

First, there was considerable mutual education on what satellite communications encompass. member firms of the New York Stock Exchange which hold shares of the Corporation's stock in their names for beneficial owners, and which have received no voting instructions from the beneficial owners, to vote such shares without instructions under the rules of the Exchange on certain, generally uncontested matters.

(4) Provide for the filling of vacancies on the Board of Directors by the appropriate series of shareholders in situations where there

are no remaining Directors, or only one remaining Director, of a series.

Appointment of Independent Public Accountants

By a vote of 7,735,831 shares in favor and 20,189 against, the shareholders re-appointed the public accounting firm of Haskins & Sells to serve as the Corporation's independent public accountants until the 1970 Annual Meeting of Shareholders.

Shareholders' Proposal

By a vote of 6,987,471 against and 566,209 in favor, the shareholders rejected a proposal submitted by Mrs. Wilma Soss and Messrs. Lewis and John Gilbert of New York. The proposal would have required the Board of Directors to fix a dollar ceiling on annual pensions payable under the Corporation's Retirement Plan.

Communications Satellite Corporation Board of Directors



HAROLD M. BOTKIN



DOUGLAS S. GUILD



GEORGE MEANY



PHILIP W. BUCHEN



WILLIAM W. HAGERTY





JOSEPH V. CHARYK





RUDOLPH A. PETERSON



JOSEPH H. McCONNELL



BRUCE G. SUNDLUN



FREDERIC G. DONNER



JAMES McCORMACK



LEO D. WELCH

Time for a communications countdown

A solid, economic payoff to the American public is long overdue from one important area of the space program. The use of communications satellites to lower the cost and improve the efficiency of domestic television, telephone, and record communications could and should have started years ago.

The world of communications, however, works on political rather than technological schedules. Since 1962, when Congress finally produced the awkward compromise known as the Communications Satellite Act, there has been no perceptible progress toward putting satellites to work for business and the public within the borders of the U.S.

Last week, the Federal Communications Commission was on the verge of giving Communications Satellite Corp. a go-ahead for a demonstration project. Then, the White House slapped a 60-day hold on FCC. The new delay is to give Administration policymakers time to come up with yet another set of recommendations. But the 60-day period will also give all the communications lobbyists on Capitol Hill time to rebroadcast the caveats and cautions that have stopped progress so far.

The problem, and it is time to face it directly, is that satellites will compete with and cause changes in existing broadcasting and telecommunications systems and practices. But the question for the Administration to ask is why any company capable of bringing off a project like a satellite communications system should not be allowed to participate.

Other countries aren't waiting. The Soviet Union has had a domestic satellite system in operation for several years. Intelsat, the international system, is working beautifully between many nations, including the U.S. Now, Canada, borrowing U.S. technology, rockets, and launch facilities, plans to have its domestic satellite network in operation in 1972, long before this country has anything working.

It's about time for the nation that watched television live from the moon to put its technology to work on getting a message from New York to Chicago.

Business Week August 2, 1969

authorized Upors

EXECUTIVE OFFICE OF THE PRESIDENT OFFICE OF TELECOMMUNICATIONS MANAGEMENT WASHINGTON, D.C. 20504

August 6, 1969

MEMORANDUM FOR MR. WHITEHEAD

Attached copy of the letter concerning the Apollo communications was sent to the FCC today. Also, copies have been sent to the carriers.

Ralph

Ralph L. Clark

EXECUTIVE OFFICE OF THE PRESIDENT OFFICE OF TELECOMMUNICATIONS MANAGEMENT WASHINGTON, D.C. 20504

OFFICE OF THE DIRECTOR

August 6, 1969

Honorable Rosel H. Hyde Chairman Federal Communications Commission Washington, D. C. 20554

Dear Mr. Chairman:

This is with reference to the request of the Communications Satellite Corporation for continuation of the direct contractual relationship between the National Aeronautics and Space Administration and the Communications Satellite Corporation for communications supporting the Apollo project.

The Commission's opinions of July 20, 1966, as amended February 1, 1967, concerning the so-called "authorized user" matter cited this service as an example of a situation "where the requirement for satellite service is of such an exceptional or unique nature that the service must be tailored to the peculiar needs of the customer and, therefore, cannot be provided within the terms and conditions of a general public tariff offering."

Nevertheless, when the question of continuation of this arrangement was raised some weeks ago, it was considered that it might be possible for the service to be handled through one of the terrestrial carriers. However, a number of circumstances have subsequently arisen which make it essential to continue the present arrangement.

The future service requirements in support of Apollo will involve a pattern of operational relationships between the Government, Comsat, which operates the satellites, and the operators of earth (and ship) stations similar to those which presently prevail. The satellite portion of the NASCOM service was established by INTELSAT under a special allotment arrangement, based expressly upon the requirement of the U.S. Government associated with the Apollo missions. Further, these services involve the provision of non-standard circuits of less than CCITT quality. In order to assure that these arrangements are not impaired to the detriment of the space program, and in the belief that the interjection of U S. terrestrial carriers into this pattern would not provide any benefits, we have concluded that the service should continue to be furnished directly by Comsat. It is therefore in the national interest that the direct contractual relationship between Comsat and NASA for provision of the NASCOM service in support of Apollo be continued. NASA has been instructed to renew or extend its contract with Comsat.

Sincerely,

muel D. O'Connell J

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CO FYI

COMMUNICATIONS SATELLITE CORPORATION

ROBERT E BUTTON July 22, 1969 The Special Assistant to the Chairman

Dear Tom:

The attached refers to an interesting CPB-FCC-COMSAT-NCTA project. We propose to show what public service programming can do on a wired system, first in an established locality (Project A), then starting from scratch whereby an ETV station can generate its own revenue (Project B) and then to tie it in with social problems directly and forcefully to show what can be done through communications to solve those problems (Project C).

You will possibly ask, what has this to do with COMSAT? Actually quite a lot. I hope to cast COMSAT in the role of innovator, in this case by planting the seed of an eventual interconnected CATV system using satellite transmission, and to show that we have a logical direct relationship with broadcasting in any form. And other good and worthy objectives.

Yours,

attachment

Mr. Clay T. Whitehead Staff Assistant to the President Room 103 Executive Office Building Washington, D.C. 20500

MEMORANDUM FOR THE RECORD

July 11, 1969

SUBJECT: MEETING - July 10, 1969

PRESENT: Messrs. Macy, Schildhause, Coston, Roth, Penwell and Button

> PROJECT A: CPB Programming Responsibility for presently un-used channels in a selected CATV Franchise Area

Action: NCTA to produce further 20 localities and note unused channel capacity.

CPB to propose preferred locality for initial effort

CPB to consider budget and project manager for initial effort.

PROJECT B: Selection of locality where an ETV station can become franchisee, thus developing its own revenue source.

> Suggested areas: Oakland San Jose Framingham South Boston

Action: CPB to consult with ETV station managers to determine interest.

PROJECT C: Installation of CATV in Model Cities Program

Action: CPB consultation with government agencies concerned, re joint funding.

NOTE: Public announcements regarding any of above?

From: Lydie Hull

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July 22, 1969

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Since you may not yet have received the letter of July 18th we discussed on the phone this morning, I am sending you another. Will you please discard the first Xerox copy when it is received.

Thank you.

Lyde Hull

COMMUNICATIONS SATELLITE CORPORATION

JAMES McCORMACK Chairman

18 July 1969

The Honorable James D. O'Connell Director of Telecommunications Management Office of Emergency Planning 1800 G Street, N. W. Washington, D. C.

Dear Mr. O'Connell:

We have received copies of letters furnished to the carriers by NASA for extension of the present NCS/NASCOM satellite circuits after September 30, 1969. This extension would renew the service being provided for the past three years to NASA for the very vital Apollo communications requirements which, as you know, has been an important and successful part of the Apollo effort.

The satellite portion of the NASCOM service was established by INTELSAT under a special allotment arrangement, based expressly upon the urgent requirement of the U.S. Government associated with the Apollo missions. The INTELSAT partners, in their decision to provide this service based on the long-term commitment of NASA and the Signatories involved and the urgency of the requirement, clearly indicated that the satellite service arrangements were unique and not intended to establish a precedent for regular commercial service.

The unique NASCOM satellite services include sharing of units between earth stations (Ascension and Canary Island links) and providing of non-standard circuits of less than CCITT-CCIR quality. NASA is now contemplating extending this same type of service, modified by an additional nonstandard service of a single circuit to two earth stations (ship-borne), with switching between the ships based on their immediate requirement. NASA also desires that this ship service be a part-time service, which would provide for availability of its priority requirements but at a cost less than the full-time service.

As you can see from the above, Comsat is in the anomalous position of being requested by NASA to quote to the carriers for a service which we have never tariffed and provided to them and would only contemplate providing on the basis of an underlying long-term agreement with the Government. The chances that INTELSAT will provide an extension of the NASCOM service under terms and conditions similar to those proposed by NASA would be enhanced by an absence of unresolved disputes within the U.S.

Comsat believes that the unique aspects of the present service will, in large measure, be reflected in the extension of the service beyond September 30, 1969 which is proposed by NASA. We accordingly request a determination by your Office that the establishment of this service to NASA, as an authorized user, be extended to include the future requirements for NASCOM. This determination should be made by your Office before Comsat proceeds with arrangements necessary for extension of the NASCOM service.

The urgency of this service and its importance to safeguarding the lives of the crews of manned Apollo missions underscores the importance of extending the direct, and outstandingly successful, service being provided by Comsat.

Sincerely,

James My Cormack

- 2 -
COMMUNICATIONS SATELLITE CORPORATION

Second Draft Tentative Agenda for Regular Meeting of Board of Directors July 18, 1969

Summary Business*

- Presentation of Secretary's Certificate with respect to notice of Meeting.
- (2) Approval of minutes of Regular Meeting of Board of Directors held June 20, 1969.
- (3) Summary financial report for June 1969 and detailed report for May 1969.
- (4) Report on conduct of satellite operations.

Regular Business

- (a) Action on recommendations of Finance Committee
- (b) <u>International Matters</u>: <u>Report</u> on work of the Preparatory Committee on Definitive Arrangements for the Global System.
- (c) <u>Satellite</u> Programs:
 - (1) <u>Report on status of INTELSAT III Program,</u> including arrangements for the launch of F-5 and settlement of controversy with TRW of incentives payable for F-3.
 - (2) <u>Report</u> on status of INTELSAT IV Program and authorization of agreement for the delivery and launch of vehicles in the INTELSAT IV Program.

*Unless discussion is requested at the Meeting, these matters will, without discussion, be deemed to have been presented or to have been acted on at the Meeting in the way proposed in the materials accompanying the Agenda.

<u>Vice President or</u> <u>Office Director</u> <u>in Charge of</u> Preparing Item

Lane

Lane

Matthews (written report)

Sampson (written report)

Matthews (Policy Paper)

Johnson (Oral Report)

Reiger/Acheson (Oral Report)

> Meyer (Policy Paper)

To Whitehead

- (3) Report on development of the SPADE System, including actions taken by the Thirtyninth meeting of the ICSC.
- (4) Report on status of proposal for the pro-Sampson (Oral Report) vision of aeronautical satellite services.
- Earth Stations Matters: Report on FCC proceed-(d) ing involving authorization of an earth station (Oral Report) on Guam.
- Establishment of bank account in Maryland for (e) (Written Item) Comsat Laboratories.
- McCormack/Lane Reconstitution of the committees of the Board. (f) (Written Item)
- Report and recommendation with respect to (g) COMCET litigation.
- Acheson (Oral Report)

Reiger

(Written Item)

Acheson

Matthews

(h) Other Business.

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COMMUNICATIONS SATELLITE CORPORATION

ROBERT E. BUTTON The Special Assistant to the Chairman

July 9, 1969

Dear Tom:

Attached is our reply to the NASA proposal of a joint team project for experimentation in domestic uses. Informally, we had intended to start this process with John Macy and perhaps with Alaska, although the latter is in somewhat of a state of confusion.

I have some hopes that this will grow into a dialogue amongst possible users in a way that could facilitate future decisions on possible hardware.

Sincerely,

Attachment

Mr. Clay T. Whitehead Staff Assistant to the President Room 103 Executive Office Building Washington, D.C. 20500 July 8, 1969

Dear Mr. Shapley:

Thank you for your response of July 2, 1969 suggesting we form a joint Comsat/NASA team to consider the use of our respective facilities to experiment with various uses of a domestic satellite system. We are in complete agreement with the suggestion and as a first step would propose that a complete inventory be taken of the precise facilities that might be available for such experimentation within a one-year time period commencing September 1969. If this were considered as the first phase of our team effort, the second phase, which could begin as soon as the inventory had been taken, would consist of individual discussion with all interested parties who wished to make specific proposals for use of the system.

For the first phase I have designated Mr. Robert D. Briskman as Comsat representative and have asked him to be available at your earliest convenience for joint discussions.

We welcome the opportunity to move this project into an action phase and want to put our available assets into making it successful.

Sincerely,

SIGNED

Joseph V. Charyk

Mr. Willis H. Shapley Associate Deputy Administrator National Aeronautics and Space Administration Washington, D. C. 20546

June 19, 1969

MEMORANDUM FOR GENERAL O'CONNELL

Thank you for your memorandum of June 16th regarding correspondence between your office and NASA on the procurement of communications satellite service to support the Apollo program.

Your position seems enimently reasonable with regard to the timing of a conference with the terrestrial carriers. However, I still have reservations about the authorized user question and the question of certification of national interest. I would like to discuss this with you before a final decision is reached in this matter.

> Clay T. Whitehead Staff Assistant

cc: Mr. Flanigan Mr. Whitehead Central Files

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EXECUTIVE OFFICE OF THE PRESIDENT OFFICE OF TELECOMMUNICATIONS MANAGEMENT WASHINGTON, D.C. 20504

OFFICE OF THE DIRECTOR

June 16, 1969

MEMORANDUM FOR MR. CLAY T. WHITEHEAD

Attached, for your information, are copies of an exchange of correspondence between my office and NASA regarding the procurement of communications satellite service to support the NASA Apollo program.

Since the correspondence seems self-explanatory, I will not restate the problem in this memorandum. I would simply state that NASA shares our concern that the terrestrial carriers be afforded a hearing. In conversations at the staff level we have been advised that NASA intends to confer with the terrestrial carriers about this procurement, and the only unresolved problem seems to be timing. We feel that it would be in the Government's best interest for NASA to have the hearing at the outset rather than after this office should approve the procurement.

Attachments

OFFICE OF TELECOMMUNICATIONS MANAGEMENT WASHINGTON, D.C. 20504

OFFICE OF THE DIRECTOR

June 13, 1969

Mr. Willis H. Shapley Associate Deputy Administrator National Aeronautics and Space Administration Washington, D. C. 20546

Dear Mr. Shapley:

This is in response to your letter of June 6, 1969, requesting my approval for the direct procurement from the Communications Satellite Corporation (Comsat) of satellite communications circuits in support of the NASA Apollo program. These circuits would be between commercial earth stations in the United States and NASA tracking ships and earth stations on Grand Canary and Ascension Islands and at Carnavon, Australia. Service to these points is now being provided under direct contracts entered into in 1966 between NASA and Comsat, and the appropriate foreign carriers.

The principal reason given in your letter that a direct procurement would be in the national interest is that these communication services are critical to the success of manned missions, and a direct procurement not involving an intermediate terrestrial carrier would allow a greater margin of safety for the astronauts and create a greater probability for success of the Apollo missions. It is NASA's belief that contracting with the terrestrial carriers for its future requirements for the manned space flight program would introduce an unnecessary element of risk into the program and that this would not be in the national interest.

As I told you in our telephone conversation of June 10, I fully appreciate the inherent dangers involved in the manned space program, and I accept NASA's conclusion in this respect, because NASA is the agency with the responsibility for the safety and success of the Apollo program. One aspect of this which causes me some concern, however, is my understanding that if this direct procurement is authorized, NASA would then discuss the matter with the terrestrial carriers with a view toward permitting them to show that procurement through one of them might be in NASA's best interest. If there is a possibility that such a presentation might persuade NASA that indirect procurement of this satellite service through one of the terrestrial carriers would be in NASA's best interest then I would suggest that the terrestrial carriers be heard by NASA <u>before</u> any action is taken by this office, or the FCC. It would not seem appropriate for me to send a letter to the FCC advising that a direct procurement is necessary for safety reasons and then have NASA take a position later that the same, or an adequate, margin of safety can be achieved through indirect procurement.

Even if there is no possibility that the terrestrial carriers can persuade NASA that indirect procurement would meet NASA's requirements, it would seem that NASA would be placed in a difficult position if no discussions are held in response to their request, or if such discussions are held <u>after</u> a NASA-DTM-FCC determination upon which the terrestrial carriers have had no prior opportunity to comment. It seems clear that either the FCC, NASA, or the DTM must give the terrestrial carriers a technical explanation of the reasons why NASA has concluded that a direct procurement of this service is in the national interest. The most appropriate place for this discussion is at NASA, which has the facts first hand and the responsibility for the Apollo program, and the most appropriate time is before a determination is made by the Executive Branch that a direct procurement would be in the national interest.

There is a statement in your letter that NASA will probably save at least 15% in the charge for this service if there is a direct procurement which eliminates the intermediate carrier. As you are well aware, I am sure, the rate permitted by the FCC to be charged for a particular communication service is not always directly related to the cost of providing that service. The FCC has established a composite rate policy with regard to international service which reflects the lower cost of providing some types of service by satellite; and the United States Government, as a major user of both cable and satellite circuits, benefits from this. As a matter of fact, at the time that the 30 circuit matter was pending, the Department of Defense estimated to the Holifield Committee that as a result of the consolidated rates which were scheduled to be put into effect by the FCC in 1966, the annual savings to DOD would be \$6.3 million. The Committee Report stated, "These savings contrast with the \$1.6 million annual savings which would have been realized by dealing with Comsat directly on the 30 circuit procurement, " (See Seventh Report by the Committee on Government Operations, H. Rept. No. 613, 90th Cong., 1st Sess., pp 9-10.)

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It does not appear, therefore, that the contention that there would be a 15% cost saving is an acceptable basis for concluding that direct procurement would be in the national interest. A conclusion based on that premise would be completely counter to the FCC policy on composite rates, and would mean that every specific procurement of satellite service by a Government department or agency would necessarily be in the national interest. The effect on departments and agencies, such as the Department of Defense, which depend on both satellites and cables to meet their requirements could be uncertain and possibly adverse.

I would appreciate your advising me, therefore, as to how NASA proposes to handle the matter of affording a hearing to the terrestrial carriers. After that procedural matter is resolved and I receive a firm and unchangeable statement that NASA considers direct procurement to be in the national interest, I intend to furnish appropriate advice promptly to the FCC.

Sincerely,



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION WASHINGTON, D.C. 20546

OFFICE OF THE ADMINISTRATOR

JUN 6 1969

Honorable James D. O'Connell Director of Telecommunications Management Executive Office of the President Washington, D. C. 20504

Dear Mr. O'Connell:

As you are aware, in 1966 NASA entered into contracts with the Communications Satellite Corporation, and with three foreign carriers, for satellite communications services as part of the NCS/NASCOM communications network supporting the Apollo Program. These contracts will expire on September 30, 1969, and must be renewed or new contracts entered into for similar services.

For the past several months we have been conducting an intensive review of NASA's future requirements for communications support of Apollo and follow-on programs. In connection with identifying future requirements, we have also sought to determine the contractual scheme most appropriate for fulfilling them, taking into account the "authorized user" opinion of the Federal Communications Commission dated July 20, 1966, as amended by a further opinion dated February 1, 1967. NASA has concluded that it would be desirable for Comsat to continue to furnish the satellite communications services now being provided to NASA, subject to certain changes which will be discussed below, under direct contractual arrangements with NASA, and it is the purpose of this letter to request your approval of such arrangements.

The need for your approval of the continuation of NASA's direct contractual relationship with Comsat arises out of the position taken by the FCC regarding the authority of Comsat to contract directly with an agency of the United States Government for the provision of communications satellite services. In its July, 1966 opinion, the FCC stated that Comsat would be authorized to deal directly with U. S. Government users:--

"... in only those instances where the requirement for satellite service is of such an exceptional or unique nature that the service must be tailored to the peculiar needs of the customer and therefore cannot be provided within the terms and conditions of a general public tariff offering."

The services which Comsat had been authorized to furnish to NASA for support of the Apollo Program were cited specifically by the FCC as a case in which a direct relationship between Comsat and the Government user was appropriate.

In its February, 1967 amendment to the "authorized user" opinion, the FCC broadened the criteria for determining those circumstances in which Comsat may deal directly with a Government agency. The FCC noted that its previous opinion had pointed out that " . . . Comsat may be authorized to provide service directly to the Government whenever such service is in the national interest." The FCC further stated that "Clearly, in view of the foregoing, the DTM is the focal point for the judgment of the Executive agencies as to the national interest." And, in emphasizing that it would rely heavily on the advice of the DTM in this regard, the FCC added that:--

"While no specific procedures or criteria (other than the national interest) are proposed with respect to this governmental facet, in all cases where Comsat seeks to deal directly with the Government we shall act promptly after receipt of advice from the DTM." Thus, it appears that NASA will be able to continue its direct contractual relationship with Comsat for the services, provided you approve such an arrangement as being in the national interest, and so advise the FCC.

The services which Comsat is presently providing under its contract with NASA can be divided into two distinct categories: (1) service via satellites between U.S. earth stations and U.S. Navy-operated range instrumentation ships located in the Atlantic, Indian, and Pacific Oceans, and (2) service between U.S. earth stations and satellites located over the Atlantic and Pacific Oceans, which links up, respectively, with service provided by foreign carriers to earth stations located on Grand Canary Island (Spain) and Ascension Island (United Kingdom), and at Carnarvon, Australia.

With respect to the service between U.S. earth stations and the range instrumentation ships, the existing contract with Comsat provides for service from the Comsat earth station at Brewster, Washington, to a ship in the Pacific Ocean Area, and from the Comsat earth station at Andover, Maine, to two ships in the Atlantic/Indian Ocean Area. Service to the Pacific ship is provided on a full-time basis, while service to the Atlantic and Indian Ocean ships is provided on a shared basis with the earth stations on Grand Canary and Ascension Islands.

Experience in the use of the service to the ship stations, and the plans for future Apollo flights, have enabled NASA to reduce its requirements to actual use of only one ship at one time in the Atlantic/Indian Ocean Area and one ship at one time in the Pacific Ocean Area. Thus, although two ships may be physically located in the Atlantic/Indian Ocean Area, only one of them will actually be providing communications service at any given time. Similarly, if either of these ships is moved to the Pacific, which may be done in connection with certain missions, only one of the two ships then located in the Pacific will be actually providing communications service at any given time, although both may be utilized alternately in the course of the same mission. It is also a possibility that all three ships will be located in the same ocean area at one time, with alternate use of one ship at any given time.

In addition, it is NASA's intention to reduce all of the communications service to and from the U.S. earth stations and the ships to part-time availability, with actual use amounting to approximately twenty days, on each of not more than four occasions a year. Government operation of the communications facilities aboard each of the three Government ships will continue.

The reduction of the ship service to actual use of only one ship at one time in the Atlantic/Indian Ocean Area and one ship at one time in the Pacific Ocean Area, and even that on a part-time basis, will create a variety of novel technical and operational problems. For example, channels will have to be switched rapidly from one ship to another in the same ocean area. Continuous coordination between Comsat and each of the Government ships will be required in order to assure the quality and reliability of the circuits. Furthermore, it is envisioned that Comsat will have to distribute these circuits to different satellites for different missions.

Because of the complex and constantly changing interfaces between the satellites and the Government-operated ship stations, and the need for close coordination between Comsat and the Government regarding differing requirements, a direct contractual relationship between Comsat and the Government will clearly meet the unique or exceptional circumstances test propounded by the FCC in its original authorized user decision. In addition, a direct relationship between NASA and Comsat should result in substantial cost savings to the Government. Although an approximate amount for such savings cannot readily be predicted at this time, because there is no basis for estimating the rates for the part-time service that Comsat and the commercial carriers might offer to fulfill NASA's future ship-service requirements, we believe it can be assumed that the differential in rates will be at least 15%, as discussed further below.

For the reasons, therefore, that NASA's requirements for satellite communications service to the range instrumentation ships are unique in nature, and that they could probably be furnished by Comsat at a significantly lower cost to the Government, NASA submits that the provision of such services by Comsat under a contract directly with NASA would be in the national interest.

NASA's requirements for communications satellite service to the earth stations at Carnarvon, Australia, and at Grand Canary Island and Ascension Island, will remain substantially the same, except that it has not vet been determined whether the service to the latter two stations will be required on a full-time, part-time, or shared basis. In determining whether NASA should contract for the U.S. portion of these services through Comsat, or through a commercial U.S. carrier or carriers, careful consideration was given first to the operational problems that might arise as a result of the interjection of commercial carriers between the NASA operating center and Comsat, as the operator of the earth stations and manager of the space segment. NASA's loss of direct access to Comsat could become a critical factor to the success of a manned mission, and the safety of the astronauts, in the event of a service outage during the launch, initial orbit determination, or trans-lunar insertion phases of the mission, when immediate restoration of the service would be vital. NASA believes. therefore, that contracting with commercial carriers for its future requirements would introduce an unnecessary element of risk into the manned space flight program, and that this would not be in the national interest.

NASA has also considered the relative cost of obtaining the U.S. portion of the services to the three foreign stations from Comsat and from a commercial carrier or carriers. Although we have not attempted to solicit quotations for these services from commercial carriers, other experience indicates that there would probably be a minimum differential of at least 15% between the rates offered by Comsat, and by a commercial carrier. On the basis of Comsat's present rates to NASA for the U.S. portion of the services to these three stations, this 15% factor would result in about \$94,500 a year in additional costs to NASA for procuring the same type of service from a commercial carrier. In view of the budgetary limitations now confronting the U.S. space program, we believe that it would be decidedly in the national interest if NASA could avoid these additional costs by continuing to contract directly with Comsat for these services.

In the light of the above, it is requested that you approve, as being in the national interest, the continuation of the direct contractual relationship between Comsat and NASA for the provision of the service between the U.S. earth stations and the tracking ships, and of the U.S. portion of the service to the three foreign earth stations. We would also appreciate your prompt action on this matter, because of the comparatively short time remaining before the present contracts expire.

Sincerely yours,

. Willis D. Shapley Joon

Willis H. Shapley Associate Deputy Administrator

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EXECUTIVE OFFICE OF THE PRESIDENT OFFICE OF TELECOMMUNICATIONS MANAGEMENT WASHINGTON, D.C. 20504

OFFICE OF THE DIRECTOR

June 16, 1969

Memorandum for Mr. Clay T. Whitehead:

Subject: Communications Satellite Traffic -- United States Mainland and Hawaii

This memorandum highlights the existing and projected estimates of subject traffic. The number of equivalent duplex voice circuits using INTELSAT satellites is as follows:

USER	Actual 1June 1969	End 1969	End 1970	End 1971	End * 1972
Commercial	99	140	-	-	-
Government	30	39	-	-	
Total	129	<u>179</u>	278	385	<u>614</u>
% of Total Pacific Ocear	22.2	17.1	19.5	19.5	25.5

An estimate of the value to the INTELSAT Consortium of the traffic volume depicted above is as follows:

Space Segment Revenue to INTELSAT

End 1969 rate End 1970 rate End 1971 rate End 1972 rate \$7,160,000 per year ** 11,120,000 per year *** 15,400,000 per year *** 24,560,000 per year ***

000 D. O'Conne

* See ICSC 38-10

** Based on \$20,000 per year per unit of utilization (1/2 duplex voice circuit) *** Rates are expected to be reduced nominally during future years.

- MR. UNITE HEAD

Tom,

Compat

THE WHITE HOUSE WASHINGTON

6/13/69

Here in Bill Hickman's

pice. . He's got Waleworth planning to be "soring an burnador for MITELSAT and a few other screw-mps. The

box is misleading and simplistic.

But overall it is an im -

provement over prat reputing - Abbott

New U.S. policy gives ground in the air

Nations have long sought to dominate world communications, just as they have vied for mastery of the seas. But today, the U.S. is finding it prudent to loosen its hold on the International Telecommunications Satellite Consortium (Intelsat). The aim: to make Intelsat more attractive for other nations to join, therefore more successful.

For one thing, the U.S. is willing to sacrifice some of the power wielded in Intelsat by Communications Satellite Corp. (Comsat), the chosen corporate instrument for U.S. satellite communications.

A conference of the 68 Intelsat nations met in Washington last February and March to draft a permanent charter for their consortium. Roadblocks developed, and Comsat's role was a major issue. Under a five-year-old interim agreement, Comsat is the system's sole manager- and U.S. dominance in both ownership and operating control disturbed many Intelsat members. They wanted an international secretariat to act as manager. But the U.S. fought to maintain Comsat's role.

Switch. When Intelsat talks resume this month, the U.S. will have relaxed its rigid stand that Comsat should remain sole manager. U.S. officials are now telling other consortium members that the U.S. can "live with" an international secretariat for financial, legal, and administrative activities.

According to the new U.S. approach, Comsat would be hired as technical manager-a far cry from total re-ponsibility. The contract would run for a limited period, probably seven years, and would be renewable at the option of Intelsat's governing board.

The technical manager would be charged with design, development, pro-. curement, and operation of the satellite system, including the telemetering necessary to keep it functioning. The secretarfat, on the other hand, would handle the day-to-day operation of the corporate entity, budgeting, planning, and housekeeping jobs.

Sweeteners. To speed up negotiations for a permanent charter, the U.S. is making other sacrifices, too. Most of them affect how much the U.S.-with some 52% of Intelsat's stock-should control the consortium. Now, U. S. negotiators are willing to give up U.S. veto power over the actions of the organization's governing board (now called the Interim Communications Satellite Committee).

At this year's earlier meeting, the U.S. was silent on the subject of regional systems covering several nutions, but the U.S. delegation was clearly against the idea. Now, the U.S. is considering rules for making such systems possible. They

must be geographically compact, coordinated technically through Intelsat, and must work no economic harm to the world system.

Apparently these restrictions would rule out the French government's Symphony satellite system, proposed for French-language coverage of France, Quebec, and parts of North Africa. But they would allow the operation of a Southeast Asian or Latin American system. A regional system looks economical for such intracontinental systems as an international communications link over the Andes mountain range, where terrain

agreeing that vestment will continue to be counted in the rate base if Intelsat goes corporate.

Traditionally, U.S. companies have no set up corporate entities to deal with mul tinational communications groups, such a the submarine cables consortium.

Results. The shift in the U.S. position, if approved by the other Intelsat countries, will cost Comsat in prestige, but will not scriously affect its revenues. The changes in the U.S. position were hammered out in recent weeks by a group of top-level U.S. communications experts. Comsat participated in the talks and is not expected to fight the shift, accepting it apparently in the name of U.S. national unity.

U. S. negotiators have briefed represen-

Old position	New position			
Comsat must be manager	Comsat will be responsible only for technical operations			
No regional, multinational satellite systems	Regional systems to be permittee			
Voting to be based on stock	One country, one vote			
J.S. to hold veto power	U.S. will surrender vato			

difficulties make terrestrial cables or mi- tatives of 19 countries since the new posicrowave extremely expensive.

up an Intelsat general assembly. Some authorities think, however, that the U.S. might be willing to relax its stand against one-man, one-vote decision making. Before, it favored weighted voting, according to the percentage of shares owned. The general assembly would act as a forum and broad policymaking body.

Concessions. Bowing to the wishes of many foreign countries, the U.S. is expected to permit Intelsat to acquire a legal identity or corporate-like status. This shift in position indicates that two Comsat problems have been cleared up.

One problem was taxes. Up to now, Comsat treated its Intelsat investments as if it were a partnership, allowing depreciation for tax purposes. If Intelsat became corporate-like, this arrangement normally would be dead. But the Internal Revenue Service is expected to give a provisional go-ahead for a continuing depreciation allowance, even if Intelsat's status changes.

The other problem involved calculation of rates based on the Comsat investment in Intelsat. The Federal Communications

tion was drafted. William W. Scranton, The U.S. maintains its proposal to set head of the U.S. delegation, has made two trips to Europe to signal the change in the U.S. position. Scranton stresses that his first criterion throughout the talks will be the continued high competence and growth of Intelsat and that the U.S. is eager to achieve a quick agreement. He also says the positions are not totally frozen and that changes can be made. Scranton's deputy, Abbott M. Washburn, has had similar meetings with Canadian communications officials in Ottawa and numerous conferences with other diplomats in Washington.

The U.S. wants to be certain its new position is well understood. In this regard, James J. Wadsworth, a former U. S. delegate to the United Nations, plans to resign his FCC seat to become a full-time roving ambassador for Intelsat.

Thirty-eight member countries will have delegations at the preparatory muching (dubbed Prep-Con) in Washington June 23, where the U.S. position will be discussed. After this meeting, delegations will return to Washington in November and, if all goes well, will put final touches to the agreement.

COMMUNICATIONS SATELLITE CORPORATION

JOSEPH V. CHARYK President June 12, 1969

Mr. John E. Naugle Associate Administrator for Space Science and Applications National Aeronautics and Space Administration Washington, D. C. 20546

Dear Mr. Naugle:

In reference to your invitation of May 8 to a meeting tomorrow on the subject of ATS satellites for experimental purposes, we thought it might be helpful to put in your hands before the meeting some possibilities which have been studied by us with a view to broadening the range of possibilities for satellite experiments and demonstrations. These suggestions, we believe, would open an optimum range of applications for available spacecraft while complying with the requirements on the use of ATS satellites that have been imposed by the Federal Communications Commission.

As you know, Comsat, in concert with NASA, has had considerable experience in making operational use of ATS satellites for television transmission at times when commercial facilities were not available. As a result we have established reliable procedures and working relations with NASA. In any program making use of ATS satellites with a variety of ground equipment, Comsat would be in a unique position to make optimum use of benefits gained from such operational experience with ATS satellites. In addition, Comsat has a unique body of skilled personnel trained in the operation of different types of earth station antennae and equipment.

Comsat would be in a position to use its trained personnel, its previous experience with NASA in the use of ATS

satellites, and with Intelsat satellites, and with ground terminal equipment for some interesting applications which we think would have great promise. The standard earth station at Brewster, Washington and another in Hawaii could be used to work with an available ATS. In addition, Comsat could make available two small stations (30 ft. antennae) which have the necessary electronics capability to provide a TV channel or an appropriate number of voice or teletype circuits. This equipment could be used for an early demonstration of television service, both commercial and noncommercial, which may be particularly attractive in Alaska. Extremely interesting applications would be possible in educational and noncommercial program transmission, and in testing and demonstrating data channels for many possible applications. A particularly attractive application of data capability could be made in areas having a present requirement for data service but remote from any terrestrial transmission system. A striking case would be the case of oil exploration and extraction activities on the north slope of Alaska. In the educational field the applications are numerous, ranging from medical demonstrations on a TV channel to library research over data channels, as well as public education instructional programs.

It should be borne in mind that other satellites may well be available, now that the Intelsat III series has taken over most of the service provided by Intelsat. Comsat is in a particularly advantageous position to arrange for the best use of existing space and ground facilities through its participation in Intelsat and in the Earth Station Owners consortium, and hence would be a particularly suitable focal point to bring together the needs for demonstrational applications with the available satellite and ground facilities that are needed to carry them out, including the available capacity of ATS satellites.

We would be very happy to work with NASA officials and potential users of satellite service to put together in detail the desired satellite tests and demonstrations, making use of ATS and other facilities. We would put such proposals promptly before the FCC for approval, with which we would be in a position to commence such applications without delay.

We believe that these suggestions have an important bearing on the use of ATS satellites, and therefore have brought them to your attention in advance of the ATS meeting. It might be desirable if our suggestions could be made a major and early order of business at the meeting, since we believe that many interested parties would wish to know of the resources and capability that Comsat, in concert with NASA, could bring to a demonstration program that would employ ATS capacity and any other available facilities. The desirable applications could be activated at an early date, given FCC approval, before the details of commercial domestic satellite service have been settled by the FCC. To this end we think that the meeting tomorrow could have attractive consequences, to which Comsat could contribute a very great deal.

> Very truly yours, Joseph V. Charyk

COMMUNICATIONS SATELLITE CORPORATION

Date May 23, 1969

То:	DR.	CLAY	т.	WHITEHEAD	
From:	Robert E. B	utton	~		SA

Attached is a concise review of the 30-circuit case in the form of a record of hearings. Jim McCormack would like to expound a bit on the policy implications. I would suggest this take place during the week of June 2nd or June 9th, depending upon your availability.

Attachment

KARASIK

Union Calendar No. 239

90th Congress, 1st Session

House Report No. 618

GOVERNMENT USE OF SATELLITE COMMUNICATIONS-1967

SEVENTH REPORT

BY THE

COMMITTEE ON GOVERNMENT OPERATIONS



AUGUST 28, 1967.-Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

> U.S. GOVERNMENT PRINTING OFFICE WASHINGTON: 1967

85-006 O

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LETTER OF TRANSMITTAL

HOUSE OF REPRESENTATIVES, Washington, D.C., August 28, 1967.

Hon. JOHN McCORMACK, Speaker of the House of Representatives, Washington, D.C.

DEAR MR. SPEAKER: By direction of the Committee on Government Operations, I submit herewith the committee's seventh report to the 90th Congress. The committee's report is based on a study made by its Military Operations Subcommittee.

WILLIAM L. DAWSON, Chairman.

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COMMITTINE OF GOVERNMENT OFERETIONS.

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On August 32, 1987, the Committee on Generator Description



Union Calendar No. 239

1st Session

90TH CONGRESS) HOUSE OF REPRESENTATIVES (REPORT

No. 613

GOVERNMENT USE OF SATELLITE COMMUNICATIONS-1967

AUGUST 28, 1967 .- Committed to the Committee of the Whole House on the State of the Union and ordered to be printed nen and an University and an end of the second s

Mr. DAWSON, from the Committee on Government Operations, submitted the following

SEVENTH REPORT

BASED ON A STUDY BY THE MILITARY OPERATIONS SUBCOMMITTEE

On August 23, 1967, the Committee on Government Operations approved and adopted a report, entitled "Government Use of Satellite Communications-1967." The chairman was directed to transmit a copy to the Speaker of the House.

This report reviews recent developments in the Government use of satellite communications, which has been a subject of continuing study and investigation by the Military Operations Subcommittee since 1962. As stated in our report of last year:¹ "Our interest has been to assure that (1) military and other essential Government requirements for communications are effectively met; and (2) economies are realized by efficient use of this new technology and means of com-munication." The latest hearings, upon which the present report is based, were held on July 24 and 25, 1967.²

In this report we direct attention principally to three areas: (1) the military program for satellite communications; (2) Department of Defense procurement of satellite communications services from commercial sources; and (3) the general area of telecommunications management in the Federal Government.

¹ Government Use of Satellite Communications," H. Rept. No. 2818, 89th Cong., second sess., Oct. 19,

Government Use of Satellite Communications, in: hepr. (d. 2016, ostil Collar, sound star, ostil 1968, p. 1.
⁸ Government Use of Satellite Communications—1987," hearings before the Military Operations Sub-committee of the Committee on Government Operations, U.S. House of Representatives, 90th Cong., first sees. Hereinafter cited as "1967 hearings."

I. MILITARY SATELLITE COMMUNICATIONS

Largely as a result of the committee's recommendations, developed in earlier hearings and reports, the Department of Defense has established its own satellite system for hard-core military communications. The first phase is known as the initial defense communications satellite program (IDCSP). The first IDCSP launch on June 16, 1966, placed seven communications satellites (plus an additional one for a gravity gradient experiment) in near-synchronous orbit with a Titan III-C booster. The next launch on August 26 in the same year carried eight satellites, but it failed when a weakness in the payload fairing caused a blowup. The third launch on January 16, 1967, placed eight satellites successfully in orbit, followed by a replenishment launch of three more satellites (plus three experimental satellites) on July 1, one of which is not functioning normally. Now functioning in orbit for military communications purposes are 17 satellites. Eight more are being procured for replenishment purposes, with a launch tentatively scheduled for May 1968. This is the final procurement planned for the IDCSP family of random-orbiting, near-synchronous satellites.

Associated with the IDCSP satellites for communications purposes are several types of ground terminals. The Army has two fixed terminals (AN/FSC-9), with 60-foot-diameter parabolic antennas, one at Fort Dix, N.J., and the other at Camp Roberts, Calif., which were modified from earlier programs for use in the IDCSP. Fourteen transportable terminals (AN/MSC-46) with 40-foot parabolic antennas, weighing 123,000 pounds each, are being procured from Hughes Aircraft Co. for oversea locations. Two are now emplaced in South Vietnam, and one each in Hawaii, Philippines, Okinawa, West Germany, and Ethiopia. Deployment of the AN/MSC-46 terminals is scheduled for completion by February 1968.

The Army also has under contract with Radiation, Inc., a lighter weight terminal (AN/TSC-54), weighing 23,000 pounds, with an 18foot cloverleaf antenna, which will be transportable in a single C-130E aircraft or by helicopter. Thirteen of these smaller terminals are now on order, with delivery to be completed by June 1968. The first operational use is scheduled for September of this year.

The Navy will place small terminals (AN/SSC-3), with 6-foot antennas on ships. Two are now available and will be deployed in the Pacific. Five more of the small terminals have been ordered from Hughes Aircraft Co., with deliveries to be completed by October 1, 1967.

IMPROVEMENTS IN THE INITIAL SYSTEM

In its 1966 report the committee criticized the limited capacity of the IDCSP satellites and emphasized the importance of expanding system capacity for a better return on the substantial capital investment.³ For the whole IDCSP, including ground terminals as well as satellites, \$143,751,622 has been obligated through June 28, 1967.⁴ The most immediate possibilities for capacity expansion are in the ground terminals, and the committee is pleased to report that some progress has been made. The IDCSP was designed for not more than two voice channels, but modifications of the 40-foot terminals, with

³ H. Rept. No. 2318, 89th Cong., second sess., pp. 6, 16 1967 hearings, p. 54.

slight degrading of channel quality, will increase the number of channels to five. These modifications have been made to all five Pacific stations, are underway in the two European-based terminals, and will be incorporated in the remaining terminals as they are delivered. Additionally, some 30 modifications have been made to improve the performance of these terminals, which had experienced considerable difficulties in preliminary testing. There has been a significant gain in the mean time before failure, although the improved performance figures are still less than half the original specifications."

A second set of improvements, mostly in the antenna feed mechanism, is expected to increase terminal capacity from 5 to 11 voice channels. These changes are scheduled to be made from November 1967 through August 1968, with priority being given to the terminals in the Pacific area.

The significance of the increase in satellite capacity can be demonstrated in this way. Under the original terminal design, the 17 satellites in orbit offered at most a total of 34 circuits to military users. With the increase from two to five channels, the maximum circuits become 85. The stepup to 11 circuits per terminal will more than double that capacity. As the capacity increases, so do the opportunities for multiple access, that is, for several ground stations using the same satellite.

PLANS FOR SYSTEM GROWTH

Planning concepts, as presented to our committee in previous hearings, envisaged an advanced defense satellite communications program (ADCSP) to follow the IDCSP. At the time of the subcommittee's hearings last year, the Joint Chiefs of Staff were examining proposals for an ADCSP which had been submitted by the Defense Communications Agency, responding to a JCS statement of requirements. The subcommittee was told that on approval by the Joint Chiefs and the Secretary of Defense, the contract definition phase of the ADCSP would commence in fiscal year 1967, with an operational system planned for fiscal year 1970. These plans for an advanced system had been developed on the basis of an analysis of studies contracted out to six industrial firms and additional studies in-house by the military services.⁶ The ADCSP, it now appears, has been shelved, or at least modified

by a search for lower cost alternatives in a stretched-out time period. The plan called for the use of nine synchronous satellites and some 250 ground terminals. The 5-year cost of the project was estimated at \$500 million.7 Although the issues had not been finally resolved at the time of our recent hearings, DOD authorities now are thinking along these lines: Supplement and ultimately replace the IDCSP by several synchronous satellites within the existing state of the art, designated "Phase 2"; to be followed later on by more advanced synchronous satellites, designated "Phase 3." Planning was not sufficiently firm to identify the number of satellites in each phase. Hopefully, Phase 2 satellites would be in operation in the 1970 period, and Phase 3 satellites after 1972. Although the Departmental wit-

H. Rept. 618 O, 90-1-

 ¹⁹⁶⁷ hearings, p. 45.
H. Rept. No. 2318, 89th Cong., second sess., p. 17.
1967 hearings, p. 5.

nesses were not very sure about the details, they believed that JCSapproved military requirements would be met.8

The committee is not particularly concerned about semantic changes in system designations, so long as the basic premises are observed. These are, as outlined in our 1966 report:⁹

(1) The military needs its own system of satellite communications.

(2) The system should be established as rapidly as possible.

(3) The system should be replenished and maintained.

(4) The system should be upgraded or improved as technology permits.

(5) The system should be replaced by a newer and better one without impairing continuity of operations when upgrading or improvement have reached their useful limits in technology and cost.

Careful planning and good judgment will have to be used in following through on these basic tenets. It would be a mistake, on the one hand, to inflate the possibilities of the present system as an excuse to defer needed improvements; it would be a mistake on the other hand to settle for a limited system when new technological advances can be made. It appears today that the Department of Defense contemplates use of the IDCSP for a longer period than originally planned and leans rather heavily on the future promise of technological breakthroughs and improvements in the state of the art. The committee believes that keeping the program stretched skintight in this fashion could well impair system capabilities if unexpected failures develop.

The IDCSP was established after much wavering and indecision in the Department of Defense. It is by no means a perfect system. The capacity is extremely limited, even with the improvements to be made, and there are occasional gaps in coverage associated with random orbiting satellites. The duration of the satellites, better than originally expected, still is not certain. Considering the leadtime in procurement, steps should be taken forthwith to reinforce the IDCSP by synchronous satellites.

A useful opportunity presented itself when the United Kingdom, in September 1966, arranged to purchase through the U.S. Air Force several synchronous satellites for military communications. By increasing the procurement to include for its own use several satellites of the type now contemplated for Phase 2, the DOD could have obtained the advantage in time and price of a "package buy." A decision along this line is not yet foreclosed, 10 and the committee invites the Department of Defense to give it further consideration. An alternative is to solicit a competitive procurement of synchronous satellites with higher performance than the United Kingdom satellites. The satellites, considered alone, are relatively inexpensive, and several booster options are available for launching to synchronous orbit.

The committee also believes that Phase 3 should be a firm planning element rather than a vague concept with an indefinite future. The DCA and other Defense authorities are obliged, of course, to continually review and assess changing requirements, but constant shuffling

10 1967 hearings, p. 19.

 ⁸ 1967 hearings, pp. 12-13, 46.
⁹ H. Rept. No. 2318, 89th Cong., second sess., p. 15.

5

and reshuffling of plans, with many man-hours of technical effort devoted to these innumerable paper exercises, seems unproductive.

Regarding the search for lower cost alternatives, the committee makes these additional observations: Cost is always a consideration, and genuine savings are always to be sought, but communications are too essential to military performance to be sacrificed in the budgetcutting process. To give perspective on the cost aspects, the committee notes that the National Aeronautics and Space Administration plans to spend \$269 million for some seven experimental satellites in their applications technology satellites (ATS) program.¹¹ This program will explore important technical areas of communications satellite development on the civil side, such as direct broadcasting to home or community receivers. Undoubtedly the ATS program will develop important new knowledge and advance the state of the satellite communications art, but we do not believe that military requirements should take a lower priority in the national budget. Furthermore, we note that as the communications satellite system is expanded and operating experience gained, some of the high-cost Government resources for conventional radio communications can be eliminated, with substantial savings to the Government.

TACTICAL SATELLITE PROGRAM

Apart from the long-haul communications to be derived from the IDCSP and the follow-on programs, the Department of Defense is interested in satellite communications for tactical units. The tactical program, termed "Tacsatcom," holds considerable promise for the Armed Forces of the future. The challenge and importance of this program was noted in our October 1966 report.¹²

Research and development in the tactical communications area has progressed in the past 10 months. Terminals installed in combat vehicles, ships, and aircraft have established test networks with a Lincoln Laboratory experimental satellite (LES-5) launched with the latest IDCSP payload on July 1, 1967. Another Lincoln Laboratory satellite (LES-6) is scheduled for launching early in 1968. Several NATO countries have expressed interest in participating in this phase of the Tacsatcom program.

Contracts have been awarded to Hughes Aircraft Co. for an experimental satellite and to other contractors for experimental ground, sea, and airborne terminals in the VHF and SHF (superhigh frequency) bands. The new tactical satellite (Tacsatcom No. 1) is to be launched the latter part of 1968. Mobile terminals are scheduled for delivery at the same time, to allow for integrated tests.

Management of the tactical program remains the responsibility of the Tri-Service Executive Steering Group. The committee recom-mended in its October 1966 report that a project-office type of organization be formed to strengthen the management of the program.¹³ The Department of Defense has said in reply that the question of program management would be reviewed again when operational concerns-in contrast to R. & D. experiments and demonstrationsbegin to become important.¹⁴ Two studies now underway, one on global aspects and the other on intratheater considerations, are to

 ¹¹ NASA Authorization for Fiscal Year 1968," S. Rept. No. 868, 90th Cong., first sees., June 28, 1967, p. 43.
¹³ H. Rept. No. 2318, 89th Cong., second sees., pp. 7, 20.
¹⁴ Hörl, pp. 7, 22.
¹⁴ 1967 hearings, p. 113.

define the concepts and specifications for an operational system. This system concept will be developed during the present fiscal year and will form the basis for test objectives to be included in the joint test plan.15

The military services share the responsibility for development of the system. The Air Force has the space segment, and airborne terminals, the Army the ground stations, and the Navy is the lead service for developing a joint test plan as well as shipboard terminals.

II. PROCUREMENT OF COMMUNICATIONS SERVICES

The Department of Defense is not only a system owner but a buyer of satellite communications services. The prevailing Government policy is to depend on commercial carriers for the bulk of routine point-to-point communications. The creation of the Communications Satellite Corp. (Comsat) and the emergence of satellite circuits as a new communications resource have posed difficult problems in intraindustry relationships and in Government procurement of communications services. The Secretary of Defense, who is the executive agent of the National Communications System, also supervises Government dealings with Comsat. Under the terms of the Communications Satellite Act of 1962, the Government is an "authorized user" of Comsat services, and NASA broke the ice in 1965 when, with Secretary McNamara's approval, it contracted with Comsat for satellite communications services in the Apollo program. It was this contractual commitment, amounting to about \$28 million for 3 years, which underwrote in substantial measure the production and launching of Intelsat T satellites over the Pacific and Atlantic.¹⁶

The NASA contract was followed by a DOD contract with Comsat for 30 satellite circuits from Hawaii to three Far East points. Before a master contract for these services was consummated, the DCA decided to throw open the procurement to competitive offers among the carriers. Such offers were received, in addition to Comsat's, from Western Union International, Inc. (WUI), ITT World Communications, Inc. (WorldCom), RCA Communications, Inc. (RCAC), and Hawaiian Telephone Co. (HawTel). The DCA decided that Comsat's offer was the best in terms of rates and services offered, and the master contract was signed on June 1, 1967, to be followed by purchase orders for specific services.

During these negotiations there was pending before the Federal Communications Commission the "authorized user" case (docket No. 16058). The issues in this case went to the heart of Comsat's role in providing satellite communication services and its relationships with the other commercial carriers. The Communications Satellite Act contemplated that Comsat could sell its services directly to "authorized users," and the Federal Government was in this category, but the term was not otherwise defined. Even in the case of the Government, if it were allowed to procure services directly from Comsat without restriction, the competitive situation and revenues of the conventional carriers would be seriously affected. The FCC's solution was to safeguard the established carriers' Government custom while admonish-

¹⁵ 1967 hearings, p. 8.
¹⁵ "Missile and Space Ground Support Operations", H. Rept. No. 1340, 89th Cong., second sess., Mar. 21, 1966, p. 78, Total cost of communications support for the Apollo program was estimated at \$150 million. Ibid.

ing them to lower their tariffs and insure that the benefits of the new satellite technology were passed on to the public.

On June 23, 1966, the FCC issued a public notice which stated in substance that if the U.S. Government wanted to lease satellite circuits, it must do so through the established carriers and deal with Comsat only in "unique or exceptional circumstances." The NASA procurement was considered by the FCC as falling in this category, but not necessarily the pending DOD procurement. The FCC ampli-fied its public notice by a formal decision in the "authorized user" case on July 21, 1966.

ASSIGNMENT OF THE CONTRACT

As a hedge against an adverse FCC decision and possible legal obstacles to contract performance by Comsat, the DCA had included in the master contract a provision for its assignment to one or more of the commercial carriers. Reviewing these developments in extensive detail during its 1966 hearings, the committee recommended in its report that the contract be assigned to these carriers.¹⁷ Although Comsat's proposed tariff for the Government lease of 30 circuits from Hawaii to the Far East was considerably less than existing cable rates, the carriers proposed a substantial reduction, on a composite rate basis, if the 30-circuit contract were assigned to any of them. Since the Department of Defense now leases 128 cable circuits to the Far East, the net savings to the Government by an assignment of the contract and a new rate structure would be substantial, amounting to more than \$6 million a year.

Responding to this recommendation, the DCA assigned the 30circuit contract to the four U.S. international carriers. Each company was assigned several circuits from Hawaii to each country of destination, as shown in the table below:

the set of the set	HawTel	ITTWO	RCAC	WUI	Total
Philippines. Thailand Japaen	323	323	21372	2 3 2	10 10 10
Total	8	8	7	7	30

In an order of February 1, 1967, the FCC authorized the four carriers to perform the required services under the 30-circuit procurement, after receiving notification from James D. O'Connell, Director of Telecommunications Management, that the contract assignment would be made. Temporary authorization was granted by FCC to Comsat to initiate the service, pending the transfer of service responsibilities to the other carriers.¹⁸

Since Comsat already held the master contract and was responsible for initiating service, DCA requested Comsat on March 3, 1967, to act as its agent in obtaining acceptance of the new arrangements by the foreign communications authorities in the countries concerned. In the meantime, several of the U.S. international carriers, anticipating an assignment of services, had been negotiating on their own with the foreign entities. On April 12, 1967, Comsat advised DCA that the

H. Rept. No. 2318, 89th Cong., second sess., p. 7.
1967 hearings, pp. 13, 85.

Philippines Overseas Telecommunications Corp. was agreeable to an assignment to any of the four carriers, that the Kokusai Denshin Denwa Co. of Japan would deal with any carrier except WUI, and that the Post and Telegraph Department of Thailand would deal only with RCAC.19

PROBLEMS WITH FOREIGN ENTITIES

On May 8, 1967, DCA advised the FCC of the difficulties interposed to the assignment of the Comsat contract and suggested that the FCC might want to inquire into the exclusive arrangements which RCAC seemed to have with Thailand, and to attempt to persuade the Thai and Japanese authorities, either directly or through the State Department, to modify their positions so that the assignment could be made as contemplated. Otherwise the DCA would have to reapportion the 30 circuits in some manner to accommodate the limitations imposed by those countries. In effect, the DCA passed on to the FCC the burden of straightening out the difficulties with the foreign entities on the assumption that the FCC order granting all four carriers authority to perform satellite services to the Far East implied an equal apportionment.20

The FCC replied by letter of May 26, 1967, that its February 1 order carried no such intent and expressed no opinion about the manner of allocation. It was within DCA's prerogative and discretion, as user, to place its orders with the carriers as it saw fit. The FCC said furthermore that, in the case of Japan, it would not be appropriate for the Commission to make representations on behalf of WUI. The authorization to perform such services was a "hunting license" for the company, but whether it could work out any arrangement with Japanese authorities was its own problem. The FCC witness at the hearings noted that Japan had refused in the past to do business with WUI in the cable field.²¹

In the case of Thailand's agreement with RCAC, the FCC was satisfied, after examining the documents, that the agreement would neither curtail Thailand's freedom to deal with any carrier nor DCA's freedom to apportion traffic. The practical matter was that RCAC had managed to get an operating agreement with the Thai Director General of the Post and Telegraph Department as early as August 30, 1966, and in October of the same year, the Thai Government arranged to lease a temporary earth station from RCAC as a separate transaction and without any conditions relating to the ultimate disposition of leased satellite circuits. Thailand was quite willing to do business with Comsat also, and in October 1966 it arranged with Comsat for service of 10 satellite circuits. But in the event the contract were to be assigned to other carriers, Thailand preferred to do business with RCAC and affirmed this fact in an alternate agreement. The decision was ratified at the Cabinet level in the Thai Government, undoubtedly reflecting satisfactory working relationships of some years standing. RCAC is the only U.S. carrier which now communicates with Thailand by radio, our only means of direct communications with that country. Other traffic to Thailand handled by U.S. carriers is routed through London.22

 ¹⁹ 1967 hearings, pp. 24-37.
²⁰ 1967 hearings, pp. 37-38.
³¹ 1967 hearings, pp. 38, 100.
³² 1967 hearings, pp. 38, 40, 105.
In another letter to DCA dated July 13, 1967, the FCC conveyed written assurance it had received from RCAC that there was no exclusive agreement or understanding with the Thai Government, whether express or implied, regarding any of the satellite circuits, and that RCAC would do nothing to interfere with the DCA allocation of traffic. In the FCC's opinion, these statements were consistent with its policy against exclusive agreements, recognizing at the same time that if Thailand preferred to deal with one particular carrier, this preference had to be respected. The FCC also stated that the State Department had been requested to pursue the matter further with Thailand in order to determine whether that government would deal only with RCAC or would be willing to deal with other terrestrial carriers in accordance with the proposed DCA allocation.23

A State Department reply was awaited at the time of our hearings. Lt. Gen. Alfred D. Starbird, DCA Director, assured the subcommittee that DCA intended to follow through on the contract assignment for the 30 circuits, and if the proposed allocations could not be consummated because of the difficulties interposed by foreign entities, readjustments would be made. Resultant inequities would be rectified in future allocations.24

If Japan persists in refusing to deal with WUI, then that company will be excluded from the assignment of the circuits to Japan. However, WUI already has a contract with DCA to supply 10 leased satellite circuits from the U.S. mainland to Hawaii. This contract was made on October 6, 1966, when WUI was the first of the terrestrial carriers to announce reduced composite rates in the Pacific area. Subsequently DCA contracted with the four U.S. international carriers and American Telephone & Telegraph Co. (which is authorized to provide links as far as Hawaii) for five additional satellite circuits, one to each of these carriers.25

If the Thai Government persists in dealing only with RCAC, then presumably the 10 circuits from Hawaii to Thailand will be assigned entirely to RCAC, and the other 20 circuits, 10 circuits each to the Philippines and Japan, will be reapportioned among the remaining carriers, except for the limitation on WUI imposed by Japan.

In the meantime, Comsat is supplying satellite communications services to DCA in the Pacific, pursuant to the FCC temporary authorization of February 1, 1967. Service to the Philippines commenced on April 5, to Thailand on May 16, and to Japan on July 3, 1967. These 30 circuits from Hawaii to the Far East, plus the 15 circuits from the U.S. mainland to Hawaii, are the only satellite circuits now leased by DCA. General Starbird said that as full-period commercial satellite service becomes available in the Atlantic, additional circuitry will be leased as justified by economic and military considerations.26

SAVINGS DUE TO RATE REDUCTIONS

Despite the problems occasioned by the assignment of the 30-circuit contract to the U.S. international carriers, the committee is heartened by the measurable results in substantial savings associated with this and related arrangements. In the Pacific, the U.S. Govern-

 ³³ 1967 hearings, pp. 39–40.
³⁴ 1667 hearings, pp. 20, 23.
³⁵ 1967 hearings, p. 21.
³⁵ 1967 hearings, p. 14.

ment, as the predominant user of voice circuits, will save \$6.3 million annually over charges which would have been in effect after a planned rate reduction in October 1966.27 These savings contrast with the \$1.6 million annual savings which would have been realized by dealing with Comsat directly on the 30-circuit procurement.28 The difference reflects the composite rate approach of the carriers, covering all communication modes including cables as well as satellite circuits.

By offering composite rates, the communications industry is following a traditional pattern of assimilating the benefits of a new technology into existing systems. The user pays a standardized tariff rate, whether the actual communication is effected by cable, radio, or satellite. This is, in a sense, a compromise between the need to protect existing heavy investments in older communications resources and the obligation to pass on to users the benefits of the new satellite technology.

Compared to previous charges for leased cable circuits in the Pacific, the new composite rates reflect reductions of 25 to 40 percent. The Department of Defense has believed for a long time that carrier rates were much too high, and the entry of Comsat into the arena undoubtedly provided leverage for across-the-board rate reductions by the established carriers. Comsat still could offer satellite services at substantially lower rates-roughly half those of the carriers' composite rates, but the Department of Defense leases 128 voicegrade cable circuits in the Pacific, and considering the total leased circuitry, the composite rate yields substantially greater total savings. If and when the ratio of satellite to cable circuits is reversed, so that satellite circuitry predominates, then new economic adjustments and rate reductions undoubtedly will have to be made.

Additional annual savings of \$900,000 in the Atlantic are anticipated when 24-hour satellite service, expected in October 1967, brings scheduled lower rates into effect. Moreover, similar reductions are anticipated in U.S. terminal charges for leased service to points in Latin America and the Caribbean as satellite service is extended to them.29

REDUCTIONS BY FOREIGN CARRIERS

Nearly all of the savings in leased voice circuits have been due to a reduction in charges by the U.S. carriers. The amount of savings would increase from \$7.2 million worldwide to about \$11.8 million if the foreign entities would reduce their charges to a level paralleling their U.S. counterparts.³⁰

The circuits under discussion in this report are leased voice-grade circuits, which include alternate voice data and voice only circuits. The U.S. Government leases far more circuits of this type than any other. As of February 1, 1967, the Government used 233 leased voice circuits to and from the United States and its possessions (including U.S. mainland to Hawaii circuits) compared to about 20 teletype circuits. The Government is also the biggest customer for voice circuits. The 233 circuits under Government lease constitute 94 percent of the total of 248 circuits leased by all users to and from the United States and its possessions.³¹ Unlike ordinary telegraph or telephone services, which entail investments in switching equipment

 ³⁷ 1967 hearings, p. 123.
³⁵ Derived from information supplied by the FCC.
³⁶ 1967 hearings, p. 91.
³⁶ H. Rept. No. 2318, 89th Cong., second sess., p. 96.
³¹ 1967 hearings, p. 128.

and message handling services, these leased circuits involve little equipment and servicing other than that required to maintain the circuit after initial installation. Consequently, a reduction in the transmission cost should have a direct and immediate effect upon the charge for leasing the circuit.

When the transoceanic cables were installed, a leasing charge was set by mutual agreement and the revenues equally divided between the two ends of the cable. With the assimilation of satellite economies into their overall systems, the U.S. international carriers have effected significant reductions in the charge for leased voice circuits. If their foreign counterparts were to match these reductions, the current savings to the U.S. Government would be significantly increased. To date, however, the reductions which have been made do not match those of the U.S. carriers. Some European companies consider all communications as a unit and thereby expect specialized communications, such as leased circuits, to offset possible losses in less remunerative methods of communications, such as telegrams and postal services. That portion of the charge levied on the U.S. Government as a customer in excess of the U.S. carriers' charge for the same service amounts to a subsidy of these less remunerative types of communications in the foreign country.

Since the U.S. Government is almost the sole user of leased voice circuits, it does not appear that any substantial pressure for rate reductions will be generated by private business or other governments. The committee urges the Department of State and the Federal Communications Commission to make every appropriate effort to gain comparable rates from the foreign countries concerned. We note that various European nations have reduced their rates recently by amounts ranging from \$200 to \$1,000 per month but that their rates are still higher than those charged by the U.S. international carriers. Japan, the only Asiatic country so far to reduce rates, still charges \$13,500 per month for its share of a circuit for which the U.S. carrier receives \$10,000,32 While we welcome the reductions put into effect to date, the committee believes that the disparity between the U.S. rates and the foreign charges could be greatly lessened.

III. TELECOMMUNICATIONS MANAGEMENT

Technological progress in satellite communications has precipitated many new problems and revived some old ones in the telecommunications area. These were highlighted in President Johnson's message to the Congress of August 14, 1967, which announced the creation of a Government task force on telecommunications to make studies and recommend solutions,³⁸ The task force is to submit interim reports and a final report within 1 year.

The President identified, among the major problems, the saturation of the electromagnetic frequency spectrum, the structure and role of a domestic satellite system, the future arrangements for the interna-tional consortium in which Comsat has a major part, the question of merger among the U.S. international carriers, possible revision of the Communications Act of 1934 and the Communications Satellite Act of 1962, and organizational arrangements for telecommunications in Government. Acknowledging that present authority is widely dispersed

³³ 1967 hearings, p. 198. ³³ H. Doc. 157, 90th Cong., first sess.

among the President's office, the FCC, and other agencies, and that a better organization is needed, the President said: "I have asked the Bureau of the Budget to make a thorough study of existing governmental organization in the field of communications and to propose needed modifications."

In a previous report our committee said: "In view of the large and growing importance of telecommunications in Government affairs, domestic and international, and the mounting burden and technical and policy problems which must be solved, the committee believes that management resources for telecommunications at the top levels in Government should be strengthened."³⁴ We proposed, as one step, that the Office of Telecommunications Management be reconstituted as a separate component in the Executive Office of the President. Undoubtedly alternative or additional organizational measures will be examined. The committee looks forward with interest to the organizational recommendations of the task force and the Bureau of the Budget and expects to review them at the appropriate time,

MULTIPLE AGENCY INVOLVEMENTS

In the course of its own studies and investigations, the subcommittee has traced the ramifications of policy and procedure among separate Government centers of authority and responsibility in telecommunications. The Department of Defense, as the largest user of communications, is the executive agent for the development of the National Communications Systems which involves major civil as well as military agencies. The DOD is also charged with responsibility for superintending Comsat's business dealing with all executive departments and agencies.

Procurement of satellite communications services, we noted in our 1966 report, is affected in one way or another by at least four different statutes: The Armed Services Procurement Act, the Federal Property and Administrative Services Act, the Communications Act of 1934, and the Communications Satellite Act of 1962.³⁵ The DOD is governed by its own procurement statute but exercises, by delegation from the General Services Administration, authority for the long-term procurement of utility service for defense needs. The procurement statutes have to be reconciled with the regulating statutes. GSA is by law the Government's advocate before the FCC and other regulatory bodies on utility matters, and in this capacity defended the DOD's position in the "authorized user" case.

The FCC, administering the regulatory statutes, is concerned not only about the Government's interest but about the economic health of the regulated communications industry. It was the sharp economic challenge of satellite technology which led the FCC to mark out in the "authorized user" decision, an extremely limited role for Comsat in providing direct services to the Government, since the U.S. international carriers depend heavily on the Government for service revenues. It is understandable in this context that the DOD, seeking leverage for lower rates, and Comsat, seeking a market for satellite services, were disposed to look upon the FCC, beset by the customary procedural routines of a regulatory agency, as a brake on progress.

H. Rept. No. 2318, 89th Cong., second sess., p. 9.
Ibid., pp. 24-25.

Comsat has chafed under FCC orders affecting not only its Government dealings but its freedom to maneuver in the international arena as the leading member and manager of the Intelsat consortium. The FCC, for its part, strongly denies any undue interference in Comsat's national and international activities.

ROLE OF THE DTM

The job of getting some kind of consensus among the contending parties falls to the Director of Telecommunications Management. His role is not the happiest one. The numerous problems to be studied outrun his limited resources in staff and funds. His authority in the Executive Office is anomalous, coming in part from the President and in part from the Director of Emergency Planning. He has the proximity of the President's power and prestige but stands at a distance from the great operating centers, such as the Department of Defense, where important decisions are daily made. Despite these handicaps, Director O'Connell has done a good job, and the committee commends him for his perseverance.

Given the inevitable accretion of agencies and authorities based on statutes and Executive orders enacted in different times for different purposes, it is too much to expect that governmental affairs in the telecommunications field will be quickly put in order, or that all issues will be neatly decided. Director O'Connell's intervention in the "authorized user" case illustrates the problem. The effect of the FCC decision, as handed down, would have placed on Comsat, a private carrier, the major burden of demonstrating to the statisfaction of the regulatory agency that direct service to the Government in any given instance was "unique or exceptional" and therefore within the Government's prerogative as authorized user. By agreement between Director O'Connell and FCC Chairman Rosel Hyde, not Comsat, nor the Government using agency, nor the GSA, nor the Secretary of Defense as executive agent for the NCS, but the Director of Telecommunications Management will set forth the circumstances for direct dealing between Comsat and the Government. Hereafter, the guiding consideration will be "the national interest" not the "unique or exceptional circumstances" which the FCC laid down in the "authorized user" decision, and the decision accordingly was modified.36 There is a "gentlemen's agreement" to avoid future conflicts and litigation and to work in harmony.

How well this gentlemen's agreement will fare in the future, it is impossible to say, although the parties concerned are quite confident that they will be able-as Mr. O'Connell said-"to work this out together." 37 In a similar fashion, procedures for closer collaboration between the FCC and the executive departments and agencies relative to the international aspects of Comsat's role have been developed since August 1966.38 Guidance is to be given by the State Department to Comsat as the U.S. entity in the Intelsat consortium.

The informal and often improvised nature of the efforts to reach agreement or induce cooperation in controversial areas obviously suggests the need for systematic reappraisal of the statutory base

 ³⁶ 1967 hearings, pp. 85, 100.
³⁸ 1967 hearings, p. 81.
³⁸ 1967 hearings, p. 62.

for Government organization and management of telecommunications. Organization and management will not be significantly changed. however, until solutions are found to basic policy problems. Director O'Connell drew up for the subcommittee his own schedule of legislative changes over the next 5 years, culminating in a proposed new Federal Telecommunications Act to comprehend both organizational and policy matters.³⁹ The Congress will be faced in the years immediately ahead with challenging new tasks in reconstructing the legislative groundwork for telecommunications of the future. ** 1967 hearings, pp. 68-70.



May 21, 1969

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MEMORANDUM FOR THE RECORD

Jim McCormack from COMSA'T called today to lend support to my idea that we should be very careful about giving INTELSAT the power to determine that regional satellite systems were not economically compatible with INTELSAT. He also indicated, however, that COMSAT derives its authority from the Communications Satellite Act and therefore through INTELSAT and has a strong desire to see INTELSAT thrive. He also endorsed Bob Button for the FCC.

> Clay T. Whitehead Staff Assistant

CTWhitehead:ed

EXECUTIVE OFFICE OF THE PRESIDENT OFFICE OF TELECOMMUNICATIONS MANAGEMENT WASHINGTON, D.C. 20504

May 21, 1969

NOTE FOR MR. WHITEHEAD

Mr. O'Connell is out of town, but before leaving he reviewed the attached memorandum in draft and approved it.

In order that you might have this as soon as possible, he asked me to sign it for him, and send it over to you today.

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John J. O'Malley, Jr.

Attachment

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EXECUTIVE OFFICE OF THE PRESIDENT OFFICE OF TELECOMMUNICATIONS MANAGEMENT WASHINGTON, D.C. 20504

OFFICE OF THE DIRECTOR

May 21, 1969

MEMORANDUM FOR MR. CLAY T. WHITEHEAD

This is in response to your memorandum of May 13, 1969, requesting my advice on the authority of the President to take the initiative in defining the broad characteristics of a domestic communications satellite policy and domestic communications satellite system. You also requested a summary of the "thirty circuit" procurement, including the issues involved, the FCC ruling, and the provision for DTM certification that direct procurement from Comsat is in the national interest.

1. Presidential Authority Regarding Domestic Satellite Service

As your memorandum notes, the Communications Satellite Act (CSA) of 1962 confers substantial authority and responsibility on the President relevant to the provision of domestic communications satellite services. Of course, we all recognize that the state of the communications satellite art has advanced considerably since Congress enacted the Satellite Act in 1962 when it would have been indeed difficult to envision the use of communication satellites for anything other than intercontinental communications services. We would quite agree with Assistant Attorney General Reynquist when he stated in a recent letter to the Legal Adviser of the State Department that Congress could not then foresee the specific organizational form domestic communications by satellite would have in relation to international communications. (See letter from Assistant Attorney General Reynquist to Legal Adviser, Department of State, dated 29 April 1969, pp. 5-6; copy attached.) The Congress did, however, make clear in the Satellite Act the objective of the United States that an international communications satellite system be established expeditiously, and on the basis of an international agreement that would protect the system not only from electromagnetic interference, but also from wasteful duplication of facilities created by competing foreign systems. To these ends, the Act, particularly Section 201(a), authorizes the President, among other things, to insure that arrangements be made for foreign participation in the system and to use this authority to obtain coordinated and efficient use of the electromagnetic spectrum.

The sum and substance of the Assistant Attorney General's opinion is that policy questions regarding a foreign domestic satellite system and the international system are "inextricably related, " and for this reason alone no action should be taken approving a foreign domestic system without first determining its impact on the international (or INTELSAT) system. Mr. Reynquist's conclusion is that any United States launch assistance provided for a foreign operational domestic satellite system must have the specific approval of the President. It would certainly seem that if the policy issues regarding a <u>foreign</u> domestic system are significantly related to the international system, those affecting a <u>United States</u> domestic service or system must also be related. Therefore, the specific approval of the President should be required before any separate domestic United States system is authorized.

This is not to say that the Government ought to take the initiative in the technical planning for commercial communications satellite service. The United States domestic and international carriers, including Comsat, rather than the Government should take the initiative in developing the basic technical requirements for a satellite system; but this cannot be done very efficiently in the absence of a policy framework developed by the Government. As the carriers move forward in their planning we would contemplate the Presidential (or Executive Office) function to be to monitor developments carefully, including not only information coming into the State Department from abroad, but also by fairly frequent consultation with Comsat, the United States terrestrial carriers, the Departments of State and Defense, and NASA, to insure that the over-all policy concept set out in Section 102 of the Satellite Act is being followed.

The fact that the President appoints three Comsat directors and is directed by the Act to make an annual report to Congress on the "national program" contemplated in Section 201(a)(1) of the CSA is further evidence of the intent of Congress to provide for a major role for the President in the development of sound communications satellite policy. Of course, the degree to which the Executive Office and the White House participate in the policy process is itself a policy matter, but the United States and Canadian domestic satellite issues seem to us to be of such transcending importance that if the White House role is to be meaningful at all, it must assert itself here.

1/ You are undoubtedly aware that Subsection 102(d) states that it is not the intent of Congress to preclude the use of "the communications satellite system for domestic communication services. . . . " As you know, we have continuously opposed the provision of launch service for an independent Canadian domestic satellite. We adhere to that position. It is our view that the White House ought to promulgate the policy that our commitments to INTELSAT as well as the national interest of the United States would best be served if the United States domestic pilot program be serviced through INTELSAT satellites (or, at least, that INTELSAT be offered the opportunity to provide the service). At the same time the FCC should be urged that in order to make most efficient use of the radio spectrum and lower system costs as much as possible that a multiple purpose system, rather than a single purpose system, ought to be authorized.

In summary, the Act does not seem to place any practical limitation on the powers of the President in the provision of policy guidance for the development and operation of commercial communication satellites. However, we would not recommend the issuance of a formal statement of Presidential authority in this area, because it would not result necessarily in the solution of a particular problem, and might lead to a political debate over how the statement should be interpreted, and so forth. This is not to say that upon an appropriate occasion a Presidential statement resolving a specific issue might be very appropriate and helpful-for example, a Presidential statement that the United States will take service for its domestic pilot program from INTELSAT, and will consider at a later time, depending on the circumstances, whether to take service from INTELSAT for any regular domestic system. Such a statement could then be transmitted to all other interested governments with a statement to the effect that launch service will not be provided to any foreign entity for any commercial system outside of INTELSAT.

2. The "Thirty Circuits" Problem

As you may know, this problem arose in 1966 when the Department of Defense decided to contract (subject to the approval of the DTM) <u>directly</u> with the Communications Satellite Corporation (Comsat) for thirty voicegrade satellite circuits between Hawaii and the Far East. The problem has been temporarily resolved after months of negotiating with the FCC, but it may become a serious problem again if NASA decides to contract directly with Comsat for shipboard service for its Apollo program.

The "thirty circuit" procurement became a policy problem because the Satellite Act does not specify who should be authorized to deal directly with Comsat for service. Subsection 102(c) of the Act states the intent of Congress to be "that all authorized users shall have nondiscriminatory

access to the system; Subsection 305(a)(2) authorizes Comsat to "furnish, for hire, channels of communication to United States communications common carriers and to other authorized entities, foreign and domestic. . .;" and Section 305(b)(4) authorizes Comsat "to contract with authorized users, including the United States Government, for the services of the communications satellite system. . . . " While the Satellite Act clearly does not limit Comsat's role to that of a "carrier's carrier, " it is silent on precisely how a user would be authorized to deal with Comsat. We maintained from the outset of the "thirty circuits" case, and the Department of Justice agreed, that the United States Government was an authorized user as a matter of law, and that it can contract directly as a matter of right with Comsat for satellite service. Of course, the terrestrial carriers maintained, understandably, that Comsat was intended by Congress to be a "carrier's carrier" and that it could not provide service directly to the Government or the public, except in unique or exceptional circumstances.

Teletypewriter and other record services are provided to the Government and the public over circuits which the record (telegraph) carriers have purchased in the telephone cables from AT&T. In the TAT-4 cable, for example, the record carriers paid \$217,000 for each voice circuit, which they can subdivide into 28 teletypewriter circuits. A practical problem underlying the "thirty circuits" dispute was the deep concern that we shared with the Department of Defense over the excessively high charges that DOD was paying for international private line teletypewriter services, particularly in the Atlantic cable complex. At the rate set by the FCC prior to the "thirty circuits" case, an American carrier could, if it were deriving the maximum of 28 teletypewriter circuits from each voice circuit, receive a rate of \$4,375 per month per circuit and could, therefore, amortize its investment in less than two months.

The "thirty circuit" dispute took place in the context of an FCC proceeding of a much larger scope which the Commission had initiated in June 1965. The proceeding was a formal inquiry, in which the public was invited to submit comments, addressed to whether, or to what extent, the Commission ought to permit entities other than communications common carriers to obtain service directly from Comsat. This office did not interject itself in the proceeding formally, although the General Services Administration (GSA) did state in a filing before the Commission in the fall of 1965 that the Government is in a unique category and can, as a matter of right, contract directly with Comsat for service. Although we felt that while the Government has the legal right to go to Comsat directly for service, the

DOD maintained, and we agreed that a requirement exists for both satellite and cable service. It is our view, therefore, that the only permanent solution to this problem would be a merger of all the international communication carriers; but in the meantime, in view of the difficulties involved in the orderly introduction of communication satellite service, there seemed to be an immediate need for the establishment of an Executive Branch policy to guide the Government departments and agencies in the procurement of commercial communications satellite service. In the course of the development of that policy in late 1965 and early 1966, I held a number of meetings with representatives of the interested Government agencies in order to get their views and assistance in developing the substance of that policy. However, the FCC, which had been represented at all of those meetings, sent me a memorandum on April 20, 1966 advising, in effect, that it had its own proceeding going on the general question of authorized use of Comsat services; and that neither Comsat nor the terrestrial carriers could provide service directly to the Government unless the Commission should issue appropriate authorization to do so. While the Commission memorandum, which was signed by the Chief of the FCC Common Carrier Bureau, did not have the status of official Commission policy it clearly implied that despite whatever policy might be established by the Executive Branch for procurement of satellite service for the Government the Commission would adhere to the concept of Comsat as a carrier's carrier and would permit direct procurement by entities other than carriers only in "exceptional and urgent circumstances." Of course, when DOD learned of the way the FCC staff was leaning on this issue it accelerated its negotiations with Comsat, and as a reaction to this the FCC staff moved forward rapidly with the preparation of an opinion in the Authorized User proceeding. The race was on between DCA and the FCC. (For an extended discussion of developments within the Department of Defense, and between DOD and the carriers, see House Report No. 2318, 89th Cong., 1st Sess., "Government Use of Satellite Communications - 43rd Report by the Committee on Government Operations" October 19, 1966, especially Part IV.)

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As a result of its negotiations with the carriers, DOD (acting through the Defense Communications Agency) on May 31, 1966 had received bids to furnish the thirty half-circuits from Comsat and from four terrestrial carriers. The bids ranged from \$4,200 per month for Comsat to \$12,500 per month for Hawaiian Telephone Company. On June 1, 1966, DCA entered into a master contract with Comsat, $\frac{2}{}$ and on June 23, 1966 the FCC issued a public notice stating in substance that if the U.S. Government wished to lease commercial satellite circuits it must do so through the terrestrial carriers and deal directly with Comsat only in "unique or exceptional circumstances." Needless to say, this disturbed us a great deal, because it put the Government in no different position than the general public in the procurement of satellite service. I wrote to Chairman Hyde on June 28, 1966 expressing my disappointment in the Notice, and advised him that all the Government agencies, including the Department of Justice, were in agreement on the Government's right to procure satellite service directly from Comsat; that I was concerned about the economic well being of the carriers but that, based upon current charges for cable circuits the Government might possibly save \$6 million over a 3-year period by going directly to Comsat. My letter apparently had no effect on the Commission, which on July 21, 1966 released its formal opinion--just a few days before DCA issued a purchase order to Comsat.

Almost immediately, informal discussions were begun with the Commission looking toward a modification of the Authorized User opinion. The Assistant Attorney General in charge of the Office of Legal Counsel was persuaded to take an active part in the matter; but, despite all our efforts, it became necessary for GSA to file a formal petition for reconsideration with the Commission on August 21, 1966, because the Commission indicated that it would not budge in its refusal to permit Comsat to provide thirty circuits directly to the Department of Defense. Discussions continued during the fall of 1966 until, finally, on January 1967 the Commission agreed to modify its opinion to recognize the unique position of the United States Government.

On February 3, 1967, therefore, the Commission released a memorandum opinion (copy attached) terminating the proceeding and authorizing the terrestrial carriers to provide service to the DOD. DOD had agreed in advance to assign the Comsat contract to the terrestrial carriers as a <u>quid pro quo</u> for the establishment of composite rates which would afford substantial savings to the Government on a global basis. The composite

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^{2/} The contract contained a clause permitting its assignment to the terrestrial carriers if the Government so chose.

rates were about half way between the satellite rates and the previously existing cable rates. $\frac{3}{2}$

We accepted the FCC disposition of the matter as in the best interests of the Government at the time, primarily because it would allow substantial savings to the Government in its procurement of international communication services and also because it recognized that special position of the Government vis-a-vis the direct procurement of services from Comsat.

To be perfectly clear, the revised FCC authorized user decision leaves wide open the question of who--the FCC or the Executive Branch-- has the right to make the final decision as to whether a Government agency can go directly to Comsat in a particular case. However, the revised opinion does recognize not only the responsibility of the DTM in this area, but also that Comsat may be authorized to provide service directly to the Government whenever such direct service is "in the national interest." Thus, the Commission modified the "unique and exceptional" test for direct Government procurement. The present status of the matter is that there is a "gentlemen's agreement" between the Executive Branch and the FCC whereby the Commission has agreed to look to the DTM as the focal point in those cases where a department or agency wishes to procure service directly from Comsat. Before a direct procurement by the Government is permitted the DTM must certify to the Commission that the direct procurement is in the "national interest," but the Commission has not agreed to accept this certification as binding. Thus, it is possible that another "thirty circuits" case can develop.

It seems to us that another confrontation will probably not develop with the FCC if the Executive departments and agencies cooperate with this office in the development of a sensible policy which is coordinated with the FCC at the level of the Chairman. We hope that the Commission will maintain an aggressive policy looking toward progressively lower composite rates. If, however, this should not prove to be the case the Government can either seek to re-assert its rights to go directly to Comsat or expand the services provided in the Government-owned communications satellite system.

^{3/} In order to keep this matter as simple as possible, I have not referred to the complications which were introduced after DCA decided to assign the Comsat contract to the three record carriers (ITT, WUI, RCAC) and the Hawaiian Telephone Co. on an apportioned basis. Japan refused to permit WUI to provide service there; Thailand would deal only with RCAC; and the Philippine Government expressed the wish to continue to deal directly with Comsat. The matter was finally resolved in May 1968, after lengthy negotiations between DCA, the State Dept., the carriers, and the foreign governments concerned.

For your convenience, I have attached copies of the FCC opinions of July 21, 1966 and February 3, 1967; my letters to Chairman Hyde of June 28, 1966 and January 31, 1967; and the letter from Assistant Attorney General Reynquist to the Legal Adviser of the State Department, dated April 29, 1969.

Joh gmally J. D. O'Connell

Attachments

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EXECUTIVE OFFICE OF THE PRESIDENT OFFICE OF TELECOMMUNICATIONS MANAGEMENT WASHINGTON, D.C. 20504

OFFICE OF THE DIRECTOR

June 28, 1966

The Honorable Rosel H. Hyde Chairman Federal Communications Commission Washington, D. C. 20554

Dear Mr. Chairman:

I appreciate your taking the time last Tuesday to discuss the matter of Government utilization of communications satellite services, I also appreciate your calling me on Thursday to advise that the Commission would be issuing a Public Notice that day which would state, among other things, that the Communications Satellite Corporation (COMSAT) would be authorized to provide service directly to the Government only in those cases where there are unique or exceptional circumstances warranting the authorization. My staff and I have studied the Public Notice. As you realize, we are disappointed that the Commission contemplates taking a position which would attempt to restrict the right of procurement of communications satellite services by the Government. As I pointed out to you in our meeting on Tuesday, we are of the opinion that Congress gave the Government the right to directly procure communications satellite services from COMSAT.

Based upon our meeting of last Tuesday, I feel that there may be some misunderstanding as to our position in this matter. The main reason I am writing now is to clarify that position to the extent that it may not be completely understood by the Commission.

In the first place, I recognize the Commission's concern that commercial communications satellite service should be implemented in a way which is not unduly disruptive to established communication systems.

We recognize the Commission's right to prescribe the relationship that ought to exist between COMSAT and the carriers. We disagree, however, with the Commission's position that it has the authority, under the Communications Satellite Act of 1962 and/or the Communications Act of 1934, to prescribe the conditions under which the Government can obtain service from COMSAT.

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This subject has been discussed with other departments and agencies of the Executive Branch, including the Department of Justice. All are in complete agreement that the Communications Satellite Act of 1962 clearly designates the Federal Government as an authorized user. I wish to make it clear, however, that the Department of Justice is the appropriate agency to speak on any legal interpretations involved.

Aside from the question of Congressional intent as expressed in the Communications Satellite Act of 1962, I would like to point out some of the effects which can be foreseen if the Commission should rule to regulate COMSAT's right to provide service to the Government or to affect the Government's authority to deal directly with COMSAT.

A major purpose served by the Communications Satellite Act in granting the Government authority to deal directly with COMSAT will be to expedite the furnishing of service under any conditions, particularly emergencies. In the past, formal procedures and legal restrictions have sometimes created delay and uncertainty concerning the provision of common carrier services to the Government. The Government needs an assured and uncomplicated responsiveness in the provision of all types of communication services if it is to cope adequately with the world requirements of the present day. Unless the provision of communication services can be made adequately responsive to the needs of the Government, it would appear important to review the general question of whether the Government should continue the policy of relying upon the common carrier/regulatory systems for the provision of the bulk of its services.

You know that our policy position has been to utilize the common carriers to the maximum extent possible considering resposiveness, reliability, assurances of service in the shortest possible time, and reasonable comparative costs. We have been working toward the development of an over-all pattern of procedures which would permit both this office and the Commission to seek new and more responsive ways for the common carrier/regulatory systems to meet the needs of the Government. The Commission's Public Notice indicates an entirely different approach to this serious problem. It is my hope that a careful review of Governmental needs in the present day will make it possible for us to work together toward the improvements that are needed.

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The Honorable Rosel H. Hyde

I am also hopeful that we can avoid the necessity of a lengthy review of this matter in the courts and in the Congress.

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It has never been our position that because the Government has the right to procure services directly from COMSAT that such right should be exercised indiscriminately and without taking into account the impact that such direct acquisition of services may have on the industry. I should also make it clear that even in those instances where direct service is authorized we have always recognized the right of the FCC to establish rate schedules as well as to issue appropriate licenses and permits.

The question of cost is also an important element of this matter. On the basis of the recent common carrier tariff filings for cable circuits in the Pacific, the charges proposed by COMSAT for the half-circuit cost associated with a current Department of Defense procurement amounted to an over-all saving on the order of \$6 million for 30 voice channels over a 3-year period. These savings are obviously substantial and in the interest of Government economy should be given serious consideration.

Since the Commission has, in the past, followed the policy of respecting the findings of the Executive Branch with respect to matters of urgency and military necessity, I am assuming that the Commission does not intend to change this policy and to enter upon an alternate course of questioning the nature of Governmental need of contracts placed for the provision of communications satellite services.

In view of the potential problems and conflicts introduced by that portion of the Commission's Public Notice of June 23, 1966, which deals with the U.S. Government as an authorized user, I would like to suggest reconsideration by the Commission and further effort to reach a cooperative policy which will better serve the needs of the Federal Government.

Sincerel D. O'Connell

FEDERAL COMMUNICATIONS COMMISSION



WASHINGTON, D. C. 20554

87035 PUBLIC NOTICE -C July 21, 1965

FCC ISSUES FORMAL OPINION IN MATTER OF COMSAT "AUTHORIZED USER" SERVICES

The Commission has adopted a Memorandum Opinion and Statement of Policy in its inquiry into legal and policy questions concerning authorization relating to the provision of satellite communications services by ComSat directly to non-carriers. (Docket No. 16058) As stated in an advance announcement (Public Notice of June 23, 1966, FCC 66-563), the Commission has concluded that: (a) ComSat may, as a matter of law, be authorized to provide service directly to non-carrier entities; (b) ComSat is to be primarily a carrier's carrier and in ordinary circumstances users of satellite facilities should be served by the terrestrial carriers; and (c) in unique and exceptional circumstances ComSat may be authorized to provide services directly to non-carrier users, therefore, the authorization to ComSat to provide services directly is dependent upon the nature of the service, i.e., unique or exceptional, rather than the identity of the user. The policy recognizes that the United States Government has a special position, because of its unique or national interest requirements and that ComSat therefore may be authorized to provide service directly to the Government, if such service is required to meet unique governmental needs or if otherwise required in the national interest, in circumstances where the Government's needs cannot be effectively met under the carrier's carrier approach. The Memorandum Opinion also indicated the nature of the procedures to be followed by ComSat seeking authority to provide service to non-carriers.

These conclusions are based upon Commission determinations that the terrestrial carriers cannot under existing law themselves be licensed to operate the international space segment and therefore cannot compete effectively with ComSat in furnishing satellite service to the public. ComSat is not and does not propose to be a full service carrier meeting directly the needs of the vast majority of users of international services for all classes of communication services. If CorSat ware to be permitted to provide leased channel services directly to users, other than in unique or exceptional circumstances, the basic purposes of Corgress in ensating the Satellite Act -- reflection of the cancelite of the next technology in both quality of service and charges therefor -- would be frustrated. A requirement that, except in unique and extraordinary circumstances, users take service from the terrestrial carriers, should not have adverse effects upon either ComSat or the users but instead should make it possible to reduce rates for all classes of users.

The Commission also announced that, in furtherance of the aforementioned statutory policy with respect to rates, it expects the common carriers promptly to give further review to their current rate schedules and file revisions which fully reflect the economies made available through the leasing of circuits in the satellite system. Failure of the carriers to do so promptly and effectively, the Commission stated, will require the Commission to take such actions as are appropriate.

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Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D. C. 20554

In the Matter of Authorized entities and authorized users under the Communications Satellite Act of 1962

Docket No. 16058

MEMORANDUM OPINION AND STATEMENT OF POLICY

By the Commission: Commissioner Johnson not participating.

Preliminary Statement

1. During April, May and June, 1965, the Commission received requests from several concerns (including press wire services, a newspaper, a television network, and an airline) for information regarding procedures to be followed in order that such concerns might be authorized to obtain satellite telecommunication services directly from the Communications Satellite Corporation (ComSat). On May 28, 1965, ComSat forwarded to the Commission its initial tariff, offering channels of communication via satellite to communications common carriers only. In an accompanying letter of transmittal, the Corporation stated that in the event that any other entities, foreign or domestic, were to be authorized to obtain channels directly from ComSat, it would expect to supplement its tariff to provide for the offering of such channels.

2. On June 16, 1965, the Commission issued a Notice of Inquiry stating that the foregoing developments presented issues concerning the extent to which, as a matter of law, entities in the United States other than communications common carriers can be authorized, under the Communications Satellite Act of 1962 (Satellite Act), to obtain telecommunication services directly from ComSat; the extent to which, as a matter of policy, such entities should be authorized to obtain services; the nature and scope of such services; the type of entities which may be deemed eligible to obtain the services; the nature and extent of the authorization required; and the policies and procedures which the Commission should establish to govern applications for such authorization.

3. Legal briefs and comments were received on or before November 1, 1965, from Aeronautical Radio, Inc. (ARINC) and the Air Transport Association of America (ATAA), filing jointly; the American Telephone and Telegraph Company (AT&T); the Columbia Broadcasting System, Inc. (CBS); the Communications Satellite Corporation (ComSat); the Administrator of General Services (GSA); the GT&E Service Corporation (GT&E); the Hawaiian Telephone Company (Hawaiian); the International Business Machines Corporation (IEM); the International Educational Broadcasting Corporation (IEBC); ITT World Communications, Inc. (ITT); Merrill Lynch, Pierce, Fenner & Smith, Inc.; the Communications Committee of the National Association of Manufacturers (NAM); United Press International, Inc. (UPI); the United States Independent Telephone Association (USITA); Western Union International, Inc. (WUI); and the Western Union Telegraph Company (WU).

4. In addition to the briefs and comments received from the above listed parties, general comments or statements were received from American Broadcasting Companies, Inc. (ABC); the American Communications Association (ACA); the American Newspaper Publishers Association (ANPA); the American Petroleum Institute (API); the American Trucking Association (ATA); the Associated Press (AP); the Communications Workers of America AFL-CIO (CWA); Dow Jones & Company, Inc.; Eastern Airlines, Inc.; RCA Communications, Inc. (RCAC); and the Washington Post Company (the Post).

5. On or before January 3, 1966, reply comments were received from ARINC and ATAA filing jointly; AT&T; the Association of American Railroads (AAR); ComSat; GSA; Hawaiian; IBM; ITT Worldcom; RCAC; WUI; and WU.

6. An analysis of the briefs, comments and reply comments indicates that the filing parties have focused primarily on the initial question of the Notice of Inquiry, i.e., the extent to which, as a matter of law, entities in the United States other than communications common carriers may be granted access to the facilities and services of ComSat. The second point to which attention was given is the question of policy relating to non-carrier access to the satellite system directly through ComSat. Relatively few parties addressed themselves to the questions of the nature of authorized entities, the nature and scope of authorized services, and the policies and procedures to be adopted by the Commission for handling and disposing of applications for authorization of direct access to the satellite system. 7. We shall discuss first the basic legal questions raised and then the policy issues. However, the two are interrelated and aspects of policy are necessarily developed in the ensuing discussion of the legal issues.

Basic Legal Issues

8. The critical question is the extent to which the Satellite Act contemplates, permits or requires that ComSat be authorized to provide service directly to entitles other than carriers. In general, respondents to our Notice took one of the following positions:

> (a) The terrestrial carriers allege that the Satellite Act does not contemplate or permit ComSat to be authorized to provide service to any non-carrier entity, with the possible exception of the Government:

(b) The non-carrier entities allege that the Act contemplates that ComSat should be permitted to provide service to them and that the Commission should issue authorizations upon appropriate findings that the particular service sought would be in the public interest;

(c) The Administrator of General Services (GSA) alleges that ComSat is authorized by the Satellite Act to provide service directly to the Government without restriction or limitation whenever the Government desires to take such service;

(d) ComSat alleges that it should provide service to non-carriers when (i) the carriers fail to provide a requested service via satellite although capacity is available; (ii) there is a need for development of technology or provision of new satellite services and then only during the early developmental stage; and (iii) in which and any other case there is a finding that the public interest would be served by the authorization. ComSat also took the position that it is authorized by the Satellite Act to provide service directly to the Government in any instance when the Government requests service.

9. We note that the term "authorized users" appears twice in the Satellite Act. The first time is in the section setting forth the policy and purpose of the Act where, among other things, it is declared that "It is the intent of Congress that all authorized users shall have nondiscriminatory access to the system ..." (Section 102(c)). The second time is among the powers and purposes of ComSat when it is stated that ComSat is authorized "to contract with authorized users, including the United States Government, for the services of the communications satellite system ... " (Section 305(b)(4)). Reference is also made to another term "authorized entities" in Section 305(a)(2), which states that ComSat may "furnish, for hire, channels of communication to United States communications common carriers and to other authorized entities, foreign and domestic ... " Neither the term "authorized user" nor "authorized entity" is defined in the Satellite Act, nor is the use of the different terms, "channels of communications" in 305(a)(2) and"service of the communications satellite system" in Section 305 (b)(4), explained in the Act or the legislative history. In addition to those terms the Satellite Act makes reference to "authorized carriers," particularly in Section 201(c)(2) and (c)(7). This term is defined in Section 103(7) as part of the definition of 'communications common carrier", 1/

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1/ Communications Satellite Act of 1962, Section 103(7):

As used in this Act, and unless the context otherwise requires -- the term "communications common carrier" has the same meaning as the term 'common carrier' has when used in the Communications Act of 1934, as amended, and in addition includes, but only for purposes of Sections 303 and 304, any individual, partnership, association, joint-stock company, trust, corporation, or other entity which owns or controls, directly or indirectly, or is under direct or indirect common control with any such carrier; and the term 'authorized carrier', except as otherwise provided for purposes of section 304 by section 304(b)(1), means a communications common carrier which has been authorized by the Federal Communications Commission under the Communications Act of 1934, as amended, to provide services by means of communications satellites.

The Contention That "Users" and "Entities" Are "Carriers".

10. AT&T contends that because there are different possible categories of "carriers" it was necessary "to recognize in the language of Section 305 that ComSat could deal with foreign entities authorized by the Commission to act as carriers here in the United States." (AT&T brief, Nov. 1, 1965, p. 13). AT&T also claims "it must be recognized that there are United States telecommunications entities which operate offices abroad, such as RCA Communications, Inc. and Globe Wireless, Ltd." (Ibid.) It is not explained why both classes of entities are not reasonably to be considered as included in the term "carriers", but AT&T concludes that because of the non-domestic status of these "carriers" they had to be referred to as "entities" or "users" in the Act. This contention completely ignores the language of Section 305(a)(2) and (b)(4) and the broad language of Section 102(c).

11. In particular, Section 305(a)(2) refers to "United States communications common carriers and to other authorized entities, foreign and domestic." In Section 305(b)(4) the Act provides that ComSat is authorized "to contract with authorized users, including the United States Government. ... "In these provisions it is clear that Congress contemplated that ComSat could be authorized to provide service directly to entities other than common carriers. We note that that finding is further supported by the declaration in Section 102(c) that, "It is the intent of Congress that all authorized users shall have nondiscriminatory access to the system " Since "authorized users" may include the United States Government, a non-carrier (Section 305(b)(4)), and since under the Act ComSat may be authorized to furnish channels for hire to carriers and "other authorized entities, foreign and domestic", the terms "authorized users" and "authorized entities" must include more than only "communications common carriers." We therefore reject the contention that the terms "carriers", "entities" and "users", as used in the Satellite Act, are synonymous, and must be read as synonymous.

12. ITT Worldcom contends that in view of the necessity for any "authorized user" to utilize earth terminal station facilities for access to the satellite system, and in view of the specific language of the Act, particularly Section 201(c)(7), limiting authorized construction and operation of satellite earth terminal stations to ComSat and "authorized carriers":

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"the term 'authorized users' in Section 305(b)(4) can thus include only those authorized to use the satellite system to create telecommunications channels pursuant to authority to operate a satellite terminal. No one else: neither television networks, news wire services, nor other users of leased channels are or can be within the scope of the term." (Brief, October 29, 1965, pp. 7-8)

ITT is confusing authorized operation with access. Authority to operate satellite terminal stations is limited as ITT alleges. However, Congress differentiated between the two matters by its statement in Section 102(c) that: "... it is the intent of Congress that all authorized users shall have nondiscriminatory access to the system" (emphasis supplied). In view of this statement of intent and in the absence of any provision excluding any entity not an operator from access to the system, we reject ITT's contention that to be a user of the system one must be eligible to construct and operate a satellite terminal facility.

The Contention That the Commission is Empowered Only To Authorize Carrier Access to the Satellite System.

13. AT&T, RCAC and others point out that, as a matter of law, the Commission may exercise only those powers expressly delegated to it by Congress. All concur that the Satellite Act empowers the Commission to authorize "carriers" to use and have access to the facilities of the satellite system. However, RCAC, after citing selected provisions of Section 201(c), contends that "these are the only provisions of the Satellite Act which grant the Commission the power to authorize use of the satellite system and, as is evident, they are limited to carriers." (Statement of RCAC, November 1, 1965, p. 4).

14. We agree that the provisions of Section 201(c) of the Satellite Act delegate to the Commission positive power to assure equitable and nondiscriminatory access to the satellite system by communications common carriers. We believe, however, that this provision was inserted because of the fact that ComSat was to serve primarily as a carrier's carrier. Heretofore, under the Communications Act of 1934, as amended, the rendering of service by a carrier to a carrier has not been considered a common carrier function subject to regulation in the same way as service to the public. Instead, such control as the Commission found essential has been exercised by the imposition of conditions in instruments of authorization. Congress was fully aware of this situation and made both general and specific provisions to assure that the Commission had ample direct legislative authority to deal with the matter. In Section 401 of the Satellite Act it made the services rendered by one carrier to another a regulated service, and in Section 201(c)(2) specifically spelled out how this requirement was to be implemented in the case of access to earth terminals.

15. A similar situation does not obtain with respect to any possible service ComSat may be authorized to provide to non-carrier entities. The Satellite Act provides specifically (Section 401) that ComSat is deemed a common carrier within the definition of that term in the Communications Act and is fully subject to the provisions of Titles II and III of the Communications Act not inconsistent with the Satellite Act. Thus, any non-carrier entity whom ComSat might be authorized to serve is already guaranteed just and reasonable charges by Section 201(b) of the Communications Act and protected against unjust or unreasonable discrimination in charges, practices, classification, regulations, facilities or services by Section 202 of that Act. - These provisions are further implemented by detailed requirements for tariff filing and powers given the Commission to prescribe charges and practices. Under these circumstances no additional provisions were necessary to protect the rights of non-carrier entities. The carriers would have us read Section 201(c)(2) of the Satellite Act as a directive to exclude all non-carrier entities from access to the system. The above discussion makes it clear that the carriers are attempting to convert a shield included by Congress to protect them against possible improper acts into a sword to strike down others who might seek to be given such access under other provisions of law. This is not what Congress meant by this provision. The Satellite Act must be read as a whole and administered to give effect to its general purposes. We therefore reject this . contention of the carriers.

The Contoution That the Commission Is Without Guidelines Or Criteria To Authorize Non-Carrier Access.

16. The carriers contend that the Satellite Act contains no standards pursuant to which the Commission might authorize access to the system by any entity other than a communications common carrier. The Satellite Act and the expressly incorporated Communications Act provide for necessary determinations of this kind by the Commission. The Communications Act directs that the Commission, acting in accordance with the standard of public convenience, interest, or necessity, grant radio licenses (Section 307(a)); "prescribe the nature of the service to be rendered by each class of licensed stations and each station within any class" (Section 303(b)); study new uses for radio and generally encourage the larger and more effective use of radio in the public interest (Section 303(g)); and make such rules and regulations and prescribe such restrictions and conditions; not inconsistent with law, as may be necessary to carry out the provisions of the Act. (Section 303(r)). 2 / Complementing these provisions, which are expressly incorporated into the Satellite Act (Section 401 of that Act), the Satellite Act itself contains the declaration that "It is the intent of Congress that all authorized users shall have nondiscriminatory access to the system; . . . [and] that the Corporation created under this Act be so organized and operated as to maintain and strengthen competition in the provision of communications services to the public..."(Section 102(c)). To implement this intent, the Commission is directed to "make rules and regulations to carry out the provisions of this Act." (Satellite Act, Section 201(c)(11)).

17. Congress thus specified the necessary broad standards or guidelines to be followed by the Commission in making requisite judgments. <u>NBC v. U.S.</u>, 319 U.S. 190 (1943). It did not establish rigid or detailed criteria for regulation of new and dynamic techniques of communication. See <u>Philadelphia Television Broadcasting Co. v. FCC</u>, U.S. App. D.C. ______, 359 F.2d 282, decided March 28, 1966. Rather, Congress left to the informed discretion of the Commission the establishment of the methods, procedures, and particular criteria for authorization of provision of services by communications common carriers to other carriers and the general public. The Commission is to make its judgment based upon an evaluation of the often changing situation and the Congressional concern with the public interest in (1) encouraging wider and more effective use of radio techniques; (2) assuring that competition is maintained and strengthened in the provision of communication services to the public; (3) assuring that

2 / Further, Section 201(b) provides that communications by wire or radio subject to this Act may be classified into such ". . . classes as the Commission may decide to be just and reasonable. . . ". access to the satellite system shall be available to all authorized users on a nondiscriminatory and equitable basis; and (4) assuring that the benefits of new technology shall be reflected in service made available to the public through both improvements in the quality of service and the realization of all possible economies. The standards established by the Communications Act for authorizing carriers to provide service to the public are applicable to satellite services as well as to other telecommunication services. The contention that the Commission cannot authorize ComSat to provide noncarrier users direct access to the satellite system because there are no guidelines or standards for such authorization is, therefore, without merit.

The Contention that the Legislative History Of the Act Indicates Congressional Intent to Limit Access Exclusively to Carriers.

18. We think that the Act clearly empowers the Commission to authorize ComSat to provide service to entities other than carriers. The legislative history of the Satellite Act further supports this conclusion. ComSat was intended by Congress to serve primarily as a carrier's carrier, that is, ComSat is to use its licensed facilities primarily to provide satellite capacity to other carriers which in turn will utilize such capacity, together with all of their other facilities (e.g., cable, HF radio, scatter systems), to furnish service to the using public. But the legislative history of the Act indicates Congressional intent that entities other than communications common carriers could be authorized direct access to the satellite system under appropriate circumstances. In a speech made on the floor of the Senate immediately prior to Senate passage of the Satellite Act (108 Cong. Rec. 16920), Senator John O. Pastore explained that ". . . the satellite corporation under H.R. 11040 will serve mainly the carriers" (emphasis added). Significantly, he did not say that ComSat would serve exclusively as a carrier's carrier.

19. On February 7, 1962, President Kennedy submitted a proposal to the Congress calling for establishment of a privately owned communications satellite corporation in which carriers were to have a share of ownership. The President's letter of transmittal states that the administration's proposed bill sets forth "purposes and powers of the new corporation (which) would include furnishing for hire channels of communication to authorized users, including the U.S. Government." In the course of subsequent hearings, testimony was heard from all Government agencies concerned with the legislation, several Senators, communications common carriers, and other interested persons. The comprehensive and detailed Committee Report on the bill, delivered by Senator Pastore from the Senate Committee on Commerce on June 11, 1962, states:

> It will be the purpose of the Corporation to plan, initiate, construct, own, manage and operate, in conjunction with foreign governments and business entities, a commercial communications satellite system, including satellite terminal stations when

licensed therefor by the Federal Communications Commission. It will also be its purpose to furnish for hire channels of communication to United States communications common carriers who, in turn, will use such channels in furnishing their common carrier communications services to the public. <u>Provision</u> is also made whereby the corporation may furnish such channels for hire to other authorized entities, foreign and domestic. (pp. 10-11) (Emphasis added).

Thus, both the President's message transmitting the bill to Congress, and the Report of the Senate Commerce Committee recognized that the Corporation could be authorized to render telecommunication services to entities other than communications common carriers. We conclude that it was the intent of Congress that the Commission could authorize ComSat to afford access to the satellite system by non-carrier entities upon a proper finding that such access would serve the public interest and comport with the purposes and policies of the Satellite Act.

Authorization of Non-Carriers to Deal With ComSat Must Be Regulated by the Commission and Be On A Specified Basis.

20. ComSat can thus be authorized to serve non-carriers directly. But it does not follow, as some of the non-carriers appear to contend, that such authorization is to be left unregulated -- that ComSat and the noncarriers are free to contract as they wish. Were that the case, ComSat could readily become, to a very substantial extent, a common carrier dealing directly with the public. But as stated (par. 18), and indeed acknowledged by all parties, ComSat was and is to serve primarily as a common carrier's common carrier. 3/ Further, under unrestricted dealings between ComSat and non-carriers, large users might tend to contract directly with ComSat. while members of the general public are left to deal with the carriers. In such circumstances, it would be clearly impossible for the Commission to carry out its responsibility under Section 201(c)(5) to ". . . insure that any economies made possible by a communications satellite system are appropriately reflected in rates for public communication service." We also note here our responsibility under the Communications Act to conduct our regulatory activities in such fashion,

> ". . .as to make available, so far as possible, to all the people of the United States a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges. . ."

^{3/} Senate Committee on Commerce, Report No. 1584, June 11, 1962, pp. 18, 28-29; see also remarks by Senator Pastore on the floor of the Senate, 108 Cong. Rec. 16920.

There is another basic tenet of the Satellite Act which would be violated by unrestricted dealings between ComSat and non-carriers. At least insofaras international common carrier communications services are concerned, ComSat is given a virtual statutory monopoly position with respect to the operation of the space segment of the commercial communications satellite system. See Sections 102(d) and 305(a)(1) of the Act. The Commission is not given authority to license any other United States carrier to operate the space segment of a satellite system to provide international communication service; instead, such carriers must procure the space segment facilities from ComSat. Clearly, if there were to be unrestricted dealings of ComSat with the public, it would mean that ComSat would be using its monopoly position to the detriment of the other carriers and, indeed, to deprive them of the opportunity to serve segments of the public under fair and equitable conditions.

21. Direct access by non-carriers to the satellite system must therefore be regulated in such manner as to insure consistency with the Acts' purposes and with ComSat's primary role as a common carrier's common carrier. There is no question but that such regulation is a function which the Commission must discharge. This follows from the provisions of the Communications Act and the Satellite Act cited in par. 16. Just as the Commission is to authorize the communications common carrier, so also it is the agency to specify the "other authorized" domestic entities referred to in Section 305(a)(2) (and see 305(b)(4)); indeed, the user must be "authorized" and no one can seriously argue, in light of the statutory scheme, that such authorization can stem from other than this agency. 4 / For, under Section 401 of the Satellite Act, ComSat is designated as a communications common carrier subject to the provisions of Titles II and III of the Communications Act. In the process of issuing authorizations to ComSat as a common carrier and reviewing its tariffs, the Commission is required, under the public interest standard, to take into account and specify the conditions under which ComSat can depart from its primary role as a common carrier's carrier and provide service directly to the public. 5/ Further, it is the Commission's

4 / Significantly, the "authorized user" provision in Section 305 is in the section setting forth "the purposes and powers of the corporation"; the corporation, in turn, is subject to the regulation of the Commission ("the FCC shall be responsible for the regulation of the corporation", Sen. Rept. 1584, 87th Cong., 2d Sess., p. 12).

5 / There is nothing unusual about the concept of a special purpose carrier. The Commission has, since its inception, licensed Press Wireless, Inc., except in unique circumstances, to handle only press traffic. The contention of ARINC and ATAA that "there would appear to be no need for the Commission additionally to undertake the unprecedented action of regulating users of ComSat" (Comments of ARINC and ATAA, November 1, 1965 p. 12), is thus based upon a misconception of the Commission's role.

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responsibility to issue regulations or policy statements to insure that authorized users have nondiscriminatory access to the system. See Sections 102(c); 201(c) (11) of the Satellite Act. Finally, we note here that the intent of Congress was stated by then Deputy Attorney General Katzenbach in response to questions from Senator Kefauver regarding use of the services of ComSat for various purposes, including weather reporting:

> "You have to have an agency [the Federal Communications Commission] which is going to control these users, which is going to act in the governmental interest . . . "6/

The Government's Position As Authorized User - GSA's Contentions.

22. We turn now to consideration of the Government's position as an authorized user. There is no question but that the Government is to be included in the category of "authorized user". See Section 305 (b) (4). We disagree, however, with GSA's assertion that ComSat may provide direct satellite communications service to the Government, without any limitation or restriction. Rather, the Satellite Act makes clear that ComSat's direct dealings with the Government must be of such a nature as to be consistent with the Act's purposes and objectives. Thus, ComSat is authorized in Section 305 to furnish channels of communication " . . . to other authorized entities . . ." ((a) (2)) and "to contract with authorized users, including the United States Government . . . ", in "order to achieve the objectives and to carry out the purposes of the Act" (emphasis supplied). These provisions must therefore be read in terms of the objectives and purposes of the Act. Section 102 (c) sets forth the following pertinent purposes:

> "... It is the intent of Congress that all authorized users shall have nondiscriminatory access to the system; that ... the corporation created under this Act be so ... operated as to maintain and strengthen competition in the provision of communications services to the public ..."

6 / Hearings before the Subcommittee on Antitrust and Monopoly of the Senate Committee on the Judiciary, 87th Cong., 2d Sess., pp. 55-56 (1962).

Some further brief comment upon the last listed 23. statutory purpose is appropriate. Were ComSat to be operated as GSA urges -- unrestricted direct dealings with the Government -the result, as we develop with specific figures (see par.), would not be to maintain or strengthen competition in the provision of communications services to the public. Rather, it would seriously weaken the competitive forces. Section 201 (a) (6) lends added support to the Congressional intent to maintain or strengthen competition in the provision of communications services to the public. The main thrust of that section is to insure that satellite facilities provided by ComSat will be utilized for general governmental purposes except where a separate system is required in the national interest. See Senate Report No. 1319, 87th Cong. 2d Sess., p. 4; 7 / Senate Report No. 1584, 87th Cong., 2d Sess., p. 15.

24. The foregoing considerations are thus consistent with the general concept pervading the Satellite Act of ComSat as a monopoly (insofar as the space segment of international communications is concerned) and as primarily a carrier's carrier, created to provide at least the space segment of international communications as part of an improved global communications network consisting of all means of providing such communications services, so that lower rates should be possible to all the using public. There is, we believe, every indication in the statute that the nature and extent of direct dealings between ComSat and GSA or any other government agency, in its role as a user, must be considered in the light of the effect of such dealings upon the statutory scheme, the rights of the other carriers in the face of ComSat's monopoly, the total global network of services, which includes cables, HF radio and other media as well as satellite facilities, and the quality of services or charges to the general using public.

7/ The Committee, which originated the provision essentially in the form in which it now stands, described the provision in the following terms: that the President is to ["t]ake necessary steps to insure utilization of the commercial system for general governmental purposes whenever there is no requirement for a separate communications system to meet unique governmental needs". Senate Report No. 1319, p. 4.

25. This does not mean that the Government does not have a special status under the Satellite Act. As shown by the provision in Section 305 (b) (4), it clearly does. We believe -that the explicit specification of the Government as an authorized user stemmed from Congressional recognition of the special or unique nature of the communications needs that may arise in the Government's case, precisely because of the special or unique functions of the Government. We believe that the standard for direct dealings between ComSat and the Government is thus embodied in the Act in the sections dealing with the somewhat related question of a separate Government system -- namely, if such dealing "is required to meet unique governmental needs, or is otherwise required in the national interest" (Section 201(a) (6); Section 102 (d)). Clearly, if resort can be had to a separate governmental system in order to meet unique Government needs or if otherwise required in the national interest, a fortiori, such circumstances warrant departure from the carrier's carrier approach if that approach would not effectively meet the Government's unique needs or the national interest. In short, we stress our full recognition that in the Government's case, unique or national interest circumstances can and do arise where the needs of the Government cannot be effectively met under the carrier's carrier approach. The authorization to ComSat to meet the needs of NASA's Apollo project through a specially designed system is a current example of such unique circumstances. See also Bendix Aviation Corp. v. United States, 106 U.S. App. D.C. 304, 272 F 2d 533, cert. den., 361 U.S. 965. We emphasize that in all cases where such national interest circumstances exist, we shall act promptly to authorize ComSat to provide service directly to the Government at just and reasonable rates.
26. In reaching our basic policy determinations we are aware that in this instance we are not confronted by a normal competitive situation, namely, one where one entity through its initiative, ability or inventiveness produces a cheaper or better means of providing service and thus captures a market. Instead, we have a situation where there is an artifical restraint upon the terrestrial carriers. They cannot ordinarily be licensed to provide the essential space segment of the international satellite circuits and thus compete with ComSat on equal terms, but must rely on ComSat which was created to provide these facilities to them. Sound policy indicates that, absent a statutory requirement to the contrary, that they should not be required to depend solely on ComSat for satellite circuits while ComSat is simultaneously allowed to siphon the most profitable part of the business from them. Neither ComSat nor anyone else proposes that ComSat meet the needs of all users, i.e. message, TELEX, and all other switched services. Thus, this is not a situation where a proposed competitor would meet all or even a major portion of the essential public needs should it supplant the other carriers.

27. No lengthy discussion of the policy considerations is needed since we have already covered a number of these considerations in the foregoing treatment of Sections such as 102(c) and 201(c)(5) of the Satellite Act. In light of those considerations and the Act's basic concept of Comsat as primarily a carrier's carrier, we believe that it would be in derogation of the policy of the Act to permit Comsat to compete with the conventional carriers in furnishing to users those communication services and channels which customarily and conventionally are or can be furnished by such carriers within the framework of their general tariff offerings. In other words, Comsat would be authorized to deal directly with the users in only those instances where the requirement for satellite service is of such an exceptional or unique nature that the service must be tailored to the peculiar needs of the customer and therefore cannot be provided within the terms and conditions of a general public tariff offering. In this connection, a current example is the satellite service which Comsat has been authorized to furnish to NASA for support of the Apollo program. Of course, Comsat should also be permitted to furnish a satellite service or channel to a user in any case where the conventional carriers fail or refuse to meet reasonable demand therefor, although they are or would be otherwise capable of doing so in accordance with general tariff offerings.

28. The wisdom of this policy is evident from the serious adverse consequences that would result if Comsat were permitted without limitation to furnish service in competition with their principal customers for satellite services and channels - the conventional carriers. In this connection, we have reviewed the nature of the proposals before us from entities which seek to be "authorized users" and take service directly from ComSat. It is clear from the filings herein that the services sought are primarily leased channel services. i.e. service which customarily and conventionally are provided by common carriers within the framework of their general tariff offerings. ComSat does not propose to, nor does anyone seek to have ComSat, provide message telegraph, message telephone, or any other exchange type of service. Yet these exchangetype services provide the bulk of the international or transoceanic services offered the public. In 1965 there were 24.2 million overseas telegrams which originated in, terminated in, or transited the United States. In the same year there were 7.9 million telephone calls between the United States and foreign or overseas points or transiting the United States between foreign points. Insofar as TELEX is concerned, in 1965 there were 3.9 million messages originating in, terminating in or transiting the United States.../ On the other hand, in 1965 there were a total of about 200 voice-grade circuits (179 to U.S. Government agencies) and 400 telegraph-grade circuits (68 to U.S. Government agencies) leased between the United States and overseas points. Essentially, therefore, only a very small part of the using public using international communications facilities had sufficient traffic to justify or require leased circuit facilities.

29. When we turn to the revenue side of the picture, we find that revenues from leased circuits provide an important, if not indispensable, part of the carriers' total receipts. Thus, in 1965 all overseas carriers, voice and record, other than ComSat, reported that leased circuits provided about 16 per cent of total overseas revenues or some \$34,900,000 (\$25,300,000 from leases to U.S. Government agencies) out of a total of \$22,700,000. The importance of revenues from leased circuit traffic becomes manifest when such revenues are compared with the international record carriers' net operating revenues before federal income taxes. Reports to the Commission show that in 1965 these carriers, as a whole, had net operating revenues, before federal income taxes, of about \$20,300,000. Their revenues from leased circuit services for the same year were \$20,200,000 (\$11,083,000 from leases to U.S. Government agencies). Because of the relatively low non-fixed or variable costs associated with this service, the loss of such business could come close to wiping out completely the record carriers' earnings, unless the facilities could be immediately used for other services and produce substantial revenues, which appears unlikely.

30. Separate figures regarding net revenues or earnings of telephone carriers from overseas communication services are not readily available. However, data filed with the Commission indicate that total revenues for such services in 1965 were about \$116 million. Leased circuit services provided about \$14.7 million or 12.7 percent of these revenues. In the case of Hawaiian Telephone Company, the ratio of its leased circuit to total revenues is much greater, accounting for about one-third of its total gross overseas revenues.

9/ All figures exclude U.S.-Canada and U.S.-Mexico traffic.

31. The danger of the loss by the terrestrial carriers of existing or additional leased circuit business to satellite facilities is not merely theoretical. 10/ A recent complaint filed by ITT World Com, and a press release issued by Comsat in response thereto, indicate that ComSat would propose to charge both authorized users and carriers approximately the same amount for leased circuits and that the amount is substantially below current or recently proposed charges for leased cable circuits. Accordingly, the terrestrial carriers could reasonably be expected to lose a substantial share of their leased circuit revenues to ComSat. Under these conditions and in light of the data set forth above, it could very well be necessary to permit these carriers to increase rates charged other users in order to enable them to earn a fair return. Certainly such detriment to the vast majority of users for the apparent benefit of a few large users would be in derogation of the objectives of the Act. 11/ The fact is that the Satellite Act requires the opposite result, namely, that the benefits of these lower rates be made available to all users.

The situation here is not unlike that facing the international telegraph 10/ carriers when AT&T laid its trans-Atlantic high capacity cables which made voice-grade leased circuits feasible. During 1960 the government cancelled leases for circuits to Europe with Commercial Cable and Western Union's cable system resulting in a loss of revenues in that year of about \$0.5 million for each of the carriers as compared with 1959. The full annual effect of these cancellations was much greater. They could not compete effectively with AT&T because the latter proposed to lease voice-grade circuits to them at the same price as it leased these circuits to the ultimate users. The problems raised by this development were finally resolved in our TAT IV decision, American Telephone and Telegraph Company, 37 FCC 1151 (1964), wherein we required that the necessary cable facilities be owned jointly and excluded AT&T from all participation in future international voice-data leased business. This was done because of the effects that provision of such service could have on the ability of the international record carriers to provide efficient and economical record services to the public as well as the fact that the carriers could not be expected to obtain a meaningful share of the business in competition with AT&T.

11 / We say "apparent benefit" because we will show hereinafter that even most large scale users would probably suffer no economic detriment by a requirement that they take service from the carriers rather than directly from ComSat. 32. In light of GSA's contentions, we believe it appropriate to consider the revenue effects of ComSat providing service on an unlimited basis to the Government. We have analyzed above the potential effect of a loss of leased circuit revenues upon the terrestrial carriers. The Government as a user provided over 70% of total leased circuit revenues. In the case of voice-grade circuits which provide the bulk of such revenues, the Government is an even more important factor as it accounted for 90% of the total number of circuits leased by all users. The importance of revenues from Government leases to the international telegraph carriers and to the Hawaiian Telephone Company is shown by the table below:

Year 1965 (Thousands of dollars)

Carrier	Total Revenues	Net Revenues Before F, I, T.	Total Leased Cir- cuit Revenues	Leased Circuit Revenues a/	
ITT World Com	\$29,808	\$ 4,546	\$ 5,952	\$ 3,200	
WUI Hawaiian b/	18,124 14,280	2,543 N.A.	1,924 4,741	1,407 4,606	

N.A. - Not available. a/ Partly estimated.

b/ Data are for overseas services only.

For each carrier, revenues from services to the Government are essential to a fair rate of return and provide a sizeable part of its total profit margin. Thus the loss of a substantial proportion of government leased circuit revenues could have serious adverse effect upon the carriers. Instead of being able to reduce rates to reflect the lower costs of satellite circuits, they would probably have to seek substantial rate increases.

33. It might be argued that in our discussion thus far we have ignored the interests of ComSat in our concern about the potential effects of direct service by ComSat to "authorized users." This is not so. It will be recalled that ComSat has a virtual monopoly in the provision of at least the space segment for international common carrier service. Thus, to the extent that any United S ates user desires to lease satellite circuits or to the extent that ComSat, by selling activities, induces users to demand such circuits, the carriers must come to ComSat for at least the space segment of the facilities. Since, as noted above, ComSat's proposed charges to the carriers and other users would be substantially the same, it should realize substantially the same revenues whether the carriers or others lease the circuits from it.

34. We now address ourselves to the question of the effect upon prospective users of any refusal to permit ComSat to lease circuits directly

to them. It appears to us that in general these users would also benefit from such a policy. We are mindful of the injunction in Section 204(c) of the Satellite Act that the Commission shall:

"insure that any economies made possible by a communications .satellite system are appropriately reflected in rates for public communication services;"

Satellite circuits now becoming available should enable the carriers to secure facilities at lower costs in relation to terrestrial facilities and thereby to reduce rates to reflect such cost reductions. We therepermit them fore expect the common carriers promptly to give further review to their current rate schedules and file revisions which fully reflect the economies made available through the leasing of circuits in the satellite system. Failure of the carriers to do so promptly and effectively will require the Commission to take such actions as are appropriate. Even though satellite circuits are not now and will not for some time be available to all points to which users presently lease circuits from terrestrial carriers, implementation of this policy by the carriers should also reduce charges to many points to which satellite circuits are not now available. Furthermore, major users, require redundancy and diversity in their facilities and thus would normally be expected to use a combination of terrestrial and satellite facilities to the same points to provide such redundancy. These users may very well find that the average charge per circuit will be less if the terrestrial carriers supply all their needs than if ComSat were to be permitted to lease satellite circuits to them at lower rates, while the other carriers meet their needs for diversity and redundancy at rates reflecting the higher cable costs associated with conventional facilities such as cable and high frequency radio.

35. Aside from the foregoing considerations we note that entities which have sufficient traffic to require the lease of circuits are also large users of other international services such as message telephone, message telegraph and TELEX. To the extent that loss of leased circuit revenues might require upward adjustments or prevent contemplated reductions in rates for other services, such large users could very well find their total international communications bills increased if ComSat were to be permitted to provide leased service directly to them without limitation. 36. We therefore conclude that only in unique or exceptional circumstances should non-carrier entities deal directly with ComSat. We believe that the ascertainment of such circumstances must be left to a case-by-case approach, since it is dependent upon the nature of the particular service requested. We can state, however, that refusal or failure of the terrestrial carriers to provide, upon reasonable demand, satellite leased circuit facilities, otherwise available, would, in absence of a valid explanation, constitute exceptional circumstances. Similarly, we believe it our duty to encourage development of new uses of satellite facilities and will, upon application, issue authorizations which are best designed to further such ends. Finally, as already set forth more fully in paragraph 26, we again stress the special position of the Government, and specifically, that in the Government's case, unique or national interest circumstances can and do arise where the needs of the Government cannot be met under the carrier's carrier approach.

CONCLUSIONS

We have reached the following policy conclusions:

37.

- (a) The terrestrial carriers cannot under existing law themselves be licensed to operate the space segment of the international system and therefore cannot compete effectively in furnishing satellite service to the public.
- (b) ComSat is not and does not propose to be a full service carrier meeting directly the needs of the vast majority of users of international services for all classes of communication services.
- (c) If ComSat were to be permitted to provide leased channel services directly to users, other than in unique or exceptional circumstances, the basic purposes of Congress in enacting the Satellite Act -- reflection of the benefits of the new technology in both quality of service and charges therefor -- would be frustrated.
- (d) A requirement that, except in unique and extraordinary circumstances, users take service from the terrestrial carriers should not have adverse effects upon either ComSat or the users but instead should make it possible to reduce rates for all classes of users.
- 38. Our ultimate conclusions are:
 - (a) ComSat may as a matter of law be authorized to provide service directly to non-carrier entities;
 - (b) ComSat is to be primarily a carrier's carrier and in ordinary circumstances users of satellite facilities should be served by the terrestrial carriers;

- (c) In unique and exceptional circumstances ComSat may be authorized to provide services directly to noncarrier users; therefore, the authorization to ComSat to provide services is dependent upon the nature of the service, i.e., unique or exceptional, rather than the identity of the user. The United States Government has a special position because of its unique or national interest requirements; ComSat may be authorized to provide service directly to the Government, whenever such service is required to meet unique governmental needs or is otherwise required in the national interest, in circumstances where the Government's needs cannot be effectively met under the carrier's carrier approach.
- 39. We do not now propose to set forth specific procedures. However, any request by ComSat for authorization to provide service directly to any user desiring to take such service in particular circumstances should include showings by ComSat as to:
 - (1) Whether the proposed service via satellite is available from terrestrial carriers, including evidence of request made therefor and the response of the carriers;
 - (ii) Whether the facilities to provide this service are available, and, if not, a description of the new or expanded facilities required as well as the cost thereof;
 - (iii) A statement showing why the circumstances involved are so unique and exceptional as to require service directly from ComSat or what the national interest requirements are that indicate that service cannot be provided under the carrier's carrier approach.
 - (iv) Any other facts which would indicate that the public interest would be served by a grant.

The above required information shall be set forth in support of the applications for modification of the applicable earth station and/or satellite station licenses as well as for authorization to acquire units of satellite utilization which ComSat shall file in each case in which it is requested to provide a particular service directly to any non-carrier users. Unless and until such authorizations are granted, ComSat shall not provide services to any non-carrier entity. In addition ComSat, of course, must also have an effective tariff on file before it can provide service directly to any non-carrier entity it may be authorized to serve.

- 40. This inquiry was instituted under authority set forth in Section 403 of the Communications Act of 1934, as amended; the policies and procedures set forth herein are adopted pursuant to authority contained in Sections 4(i), 4(j), 201(b), 303 and 307 of the Communications Act of 1934, as amended, and Sections 102(c), 201(c)(11), 305(a), 305(b) and 401 of the Communications Satellite Act of 1962.
- 41. Accordingly, IT IS ORDERED, This 20th day of July, 1966, That the Statement of Policy set forth in this Memorandum Opinion and Order IS ADOPTED and that the proceeding IS TERMINATED.

FEDERAL COMMUNICATIONS COMMISSION

Ben F. Waple Secretary

Released: July 21, 1966

A.

EXECUTIVE OFFICE OF THE PRESIDENT OFFICE OF TELECOMMUNICATIONS MANAGEMENT WASHINGTON, D.C. 20504

OFFICE OF THE DIRECTOR

January 31, 1967

The Honorable Rosel H. Hyde Chairman Federal Communications Commission Washington, D. C. 20554

Dear Mr. Chairman:

This is in reference to the pending application by the Communications Satellite Corporation for the furnishing of 30 satellite circuits in the Pacific.

It is requested that ComSat be given appropriate authorization to proceed with implementation of the Department of Defense requirement. Upon establishment of composite rates which afford substantial savings on a global basis, and upon the completion of suitable discussion with and approval by the foreign entities involved, the contract with ComSat for the provision of this service will be assigned to one or more of the carriers shortly after the date of initiation of service. However, prompt action on the ComSat application is called for so that ComSat may make any arrangements necessary to facilitate the provision of this vitally needed communications service.

Finally, in the circumstances, it is also requested that the Commission promptly grant the pending applications of the carriers for authorization to lease and operate the channels required to furnish the service in question. It is understood that any authorizations would establish the applicability of the reduced rates to this service (e.g., the basic \$7,100 composite rate figure).

Sincerely, Nall J.D. O'Connel.

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON

OFFICE OF

February 2, 1967

General James D. O'Connell Director of Telecommunications Management Office of Emergency Planning Executive Office Building Washington, D. C. 20504

Dear General O'Connell:

I am writing in light of the action taken today on the "30 circuits" and "authorized user" matters. I want to express my appreciation for your efforts in resolving these important matters. The actions taken were possible largely because of the assurance in your letter that in view of the \$7100 composite rate already put into effect by the carriers in the Pacific, the assignment clause would be exercised by DOD shortly after the initiation of service.

As you know, there are also lower rates in the Atlantic, with plans for still further reductions on the institution of 24-hour satellite service. I want to assure you that lower composite rates, wherever satellite service is instituted, are a fundamental aspect of the Commission's regulatory policies in this area.

I believe that this experience again points up the soundness and wisdom of our joint efforts to understand each other's problems and to work together to get the solution best serving the national interest.

Sincerely yours,

Rosel H. Hyde Chairman FEDERAL COMMUNICATIONS COMMISSION



95477

WASHINGTON, D. C. 20554

PUBLIC NOTICE --C February 2, 1967

AUTHORIZATIONS FOR DOD PACIFIC SATELLITE CIRCUITS; FURTHER DECISION IN AUTHORIZED USER PROCEEDING

The Federal Communications Commission has issued authorizations to Hawaiian Telephone Company, ITT World Communications Inc., RCA Communications, Inc., and Western Union International, Inc., to acquire voice-grade satellite circuits from the Communications Satellite Corporation (ComSat) to meet requirements of the Department of Defense (DDD) for thirty such circuits between Hawaii and the Far East. At the same time a short-term temporary authorization to furnish such channels to DDD was granted to ComSat at the request of the Director of Telecommunications Management (DTM) in order to permit it to make any arrangements necessary to facilitate the provision of the service. The Commission was advised by the DTM that the circuits will be assigned to the conventional carriers shortly after the initiation of service through ComSat.

At the same time the Commission acted upon petitions for reconsideration filed by various parties with respect to its Memorandum Opinion and Order and Statement of Policy (Docket No. 16058) released on July 21, 1966 dealing with the circumstances under which ComSat may be authorized to furnish satellite channels and services to entities other than the conventional common carrier. Among other things, the Commission clarified certain aspects of its earlier opinion concerning requests by ComSat for authorization to provide service directly to the U. S. Government.

The foregoing actions were taken by the Commission by the adoption of Memoranda Opinions and Orders.

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Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D. C. 20554

FCC 57-153 94724

In the Matter of the Applications of	i			
ITT WORLD COMMUNICATIONS INC.)	File	Nos.	T-C-2014
WESTERN UNION INTERNATIONAL, INC.)			T-C-2025
RCA COMMUNICATIONS, INC.)			T-C-2030
HAWAIIAN TELEPHONE COMPANY)			P-C-6440
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)

To lease from the Communications Satellite Corporation 30 satellite voice-grade circuits between Hawaii and INTELSAT II for the provision of leased channel alternate voice/data service to the Defense Communications Agency between Hawaii, on the one hand, and Japan, Theiland, and the Philippines, on the other hand.

In the Matter of the Application of

COMMUNICATIONS SATELLITE CORPORATION

To provide directly to the Defense Communications Agency 30 satellite voice-grade circuits between Hawaii, on the one hand, and Japan, Thailand, and the Philippines, on the other hand.

MEMORANDUM OPINION, ORDER AND CERTIFICATE

By the Commission:

1. The Commission has before it applications of four overseas carriers filed pursuant to Section 214 of the Communications Act of 1934 for authority to acquire from the Communications Satellite Corporation (ComSat) circuits to meet a Department of Defense (DOD) requirement for leased channel services between Hawaii and three Far Eastern points. ITT World Communications Inc. (ITT) . applied (File No. T-C-2014) on August 24, 1966; Western Union International, Inc. (WUI) applied (File No. T-C-2025) on September 14, 1966; RCA Communications, Inc. (RCA) applied (File No. T-C-2030) on September 15, 1966; and Hawaiian Telephone Company (HTC) applied File No. P-C-6440) on September 19. 1966. All the applications request authorization to lease from Comsat thirty satellite circuits between the earth station at Hawaii and the Pacific satellite, Intelsat II, to meet the DOD requirement. 1/ The circuits will be

1/ WUI also requested authorization to lease satellite circuits unrelated to the 30-circuit requirement of DCA. By separate applications, the other carriers have applied for satellite circuits unrelated to the DCA requirements for 30 circuits. We are not treating these requests herein.

File No. T-C-2032

interconnected via the satellite with ten voice-grade satellite circuits from an earth station in Japan, ten voice-grade circuits from an earth station in Thailand, and ten voice-grade satellite circuits from an earth station in the Philippines, so as to provide through alternate voice/data leased channel service between Hawaii and each of these three foreign countries. Authority is also requested to acquire necessary connecting facilities in Hawaii.

2. Pursuant to our decision in the so-called <u>Authorized User Case</u>, Docket No. 16058, ComSat on September 6, 1966 applied (File No. T-C-2032) to us for authorization to provide such service directly to DOD, as well as for related authorizations. Thus, ComSat requests authority to acquire, from the International Telecommunications Satellite Consortium, thirty full-time units of satellite utilization in Intelsat II, to acquire from the respective foreign communications entities ten full-time voice-grade circuits between the satellite and each of the three foreign points and to provide through service to DOD by combining such units and circuits into . thirty full-time alternate voice/data circuits. ComSat based its application on an order for such circuits from DOD, acting through DCA, pursuant to its procurement regulations. The DCA order, it should be noted, is made through a Communications Service Authorization (CSA) which contains a clause permitting DCA to assign the order to a carrier or carriers other than ComSat.

3. According to information before us, Thailand and the Philippines will be able to participate in the desired service by April 1, 1967, through transportable earth stations now being installed. Japan, which is presently modifying its earth station at Ibaraki, will be in operation to provide the service some months later.

4. Initially, both DOD and ComSat, in pleadings filed with the Commission, opposed the grant of the authorizations requested by the carriers. ComSat requests that we dismiss or defer consideration of the carriers' applications. It urges, among other things, that it has a contract to furnish the 30 circuits to DOD and that no action should be taken upon the carriers' applications until its own application has been disposed of. It also refers to its pending petition for reconsideration in the <u>Authorized User Case</u>, in which we determined the conditions under which ComSat may be permitted to furnish services directly to the Government and others. DOD originally opposed a grant of the carriers' applications on the ground, among others, that, since it has chosen ComSat to provide the service, there is no need for a grant of other applications.

5. In our Memorandum Opinion and Order (concomitantly being issued with this document) on petitions of ComSat, General Services Administration, and RCAC for reconsideration of our determinations in the <u>Authorized User Case</u> regarding the circumstances under which ComSat may be authorized to serve the Government directly, we point out that the DTM is "the focal point for the judgment of the Executive agencies as to the national interest," and that "in all cases where ComSat seeks to deal directly with the Government we shall act promptly after receipt of advice from the DTM."

6. We have received advice from the DTM concerning this matter. In a letter dated January 31, 1967, DTM has stated:

- 2 -

2°.

"It is requested that ComSat be given appropriate authorization to proceed with implementation of the Department of Defense requirement. Upon establishment of composite rates which afford substantial savings on a global basis, the contract with ComSat for provision of this service will be assigned to one or more of the carriers shortly after the date of initiation of service. However, prompt action on the ComSat application is called for so that ComSat may make any arrangements necessary to facilitate the provision of this vitally needed communications service. Finally, in the circumstances, it is also requested that the Commission promptly grant the pending applications of the carriers for authorization to lease and operate the channels required to furnish the service in question; it is understood that any authorizations would establish the applicability of the reduced rates to this service (e.g., the basic \$7,100 composite rate figure)."

7. In view of the particular circumstances of this matter, its history and posture and the representations made by DTM on behalf of the Executive branch, it appears that the objections heretofore raised by the parties are moot and that we should act to grant the regular authorizations to the carriers and the short term temporary authorization to ComSat. As to the latter, the short term temporary authorization to ComSat will, we believe, facilitate both the provision of this vitally needed service and an orderly transition from ComSat to the other carriers, and is thus consistent with our policies in this area. As to the former, there is now the express representation that this service will be assigned to one or more carriers shortly after date of the initiation of the service; we recognize, of course, that DCA will determine to which carrier or carriers any particular assignment should be made. In this connection, it is to be noted that the \$7100 composite rate referred to by the DTM has in fact been implemented in tariff schedules which became effective January 20, 1967.

ACCORDINGLY, IT IS HEREBY CERTIFIED, That the present and future public convenience and necessity require the grant of the applications as conditioned below or the denial thereof as also set forth below:

IT IS ORDERED, This 1st day of February, 1967, that ComSat is granted a short term temporary authority to provide, with the respective entities in Japan, the Philippines and Thailand, to the Dafense Communications Agency acting on behalf of the Department of Defense, 10 voice-grade satellite circuits between Hawaii and Japan, 10 voice-grade satellite circuits between Hawaii and the Philippines, and 10 voice-grade satellite circuits between Hawaii and Thailand, for alternate voice/data leased channel service;

IT IS FURTHER ORDERED, That the short-term temporary authorization granted to ComSat by this Order and Certificate is subject to termination, without hearing, upon such notice as may be specified; IT IS FURTHER GFTRED, That ConSat shall file with the Commission a separate tariff appli ble to the service to be proving pursuant to the temporary authorization granted by this Order and Certificate, on not less than thirty days' notice to the public; that this tariff shall take into account the standards heretofore established by the Commission with respect to this matter, and that this tariff shall provide that it expires on the date the temporary authorization granted herein is terminated;

IT IS FURTHER ORDERED, That, except for the temporary authorization granted to ComSat by this Order and Certificate, and the previous authorization granted to ComSat to acquire units of utilization to provide the 30 circuits by the Commission's letter of January 26, 1967, the application of ComSat filed on September 6, 1966, File No. T-C-2032, IS DENIED.

IT IS FURTHER ORDERED, That ITT World Communications Inc., Western Union International, Inc., RCA Communications, Inc., and Hawaiian Telephone Company are each authorized to lease and operate up to 30 voice-grade circuits between Hawaii and the INTELSAT II (F-2) satellite in order to furnish up to ten circuits for alternate voice/data leased channel service to the Defense Communications Agency acting on behalf of the Department of Defense between Hawaii and each of the following points: Japan, Thailand, and the Philippines; <u>Provided</u>, however, (1) that the actual number of circuits that any such carrier may lease and operate pursuant to this authorization shall not exceed the number of circuits ordered from such carrier by the Defense Communications Agency; and (2) that the initial tariff rate for each such circuit between Hawaii and the INTELSAT II (F-2) satellite shall not exceed \$7,100 per month;

IT IS FURTHER ORDERED, That the carriers may file tariffs on not less than one day's notice to provide the services to those points when they receive orders from the Defense Communications Agency;

IT IS FURTHER ORDERED, That as circuits to a particular point (Thailand, the Philippine Republic, or Japan) are ordered by the Defense Communications Agency from a carrier in lieu of ComSat, the short-term temporary authorization herein granted to ComSat shall terminate without further action by the Commission upon the institution of service by such carrier;

IT IS FURTHER ORDERED, That ConSat and the carrier applicants are authorized to acquire any necessary connecting facilities in Hawaii so long as their respective authorizations are in effect; and

1T IS FURTHER ORDERED, That each of the carrier applicants shall notify the Commission of the acquisition, by that applicant, of any of the circuits herein authorized within five days of such acquisition.

FEDERAL COMMUNICATIONS COMMISSION

Ben F. Waple Secretary

Released: February 3, 1967

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Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D. C.

FCC 67-164 94725

In the Matter of

Authorized entities and Authorized users under the Communications Satellite Act of 1962

MEMORANDUM OFINION AND ORDER

By the Commission:

Preliminary Statement

1. We have before us several petitions for reconsideration and clarification of our Memorandum Opinion and Statement of Policy released July 21, 1966, in this proceeding. These petitions, which vary as to the relief sought, were timely filed on August 22, 1966 by the Communications Satellite Corporation (ComSat); the Administrator of General Services (GSA); and RCA Communications, Inc. (RCAC). Oppositions to either or both the Comsat and GSA petitions were filed on September 26, 1966, by the American Telephone and Telegraph Co. (AT&T); ITT World Communications Inc. (ITT WorldCom); Hawaiian Telephone Co. (HTC); Western Union Telegraph Co. (WU); Western Union International, Inc. (WUI); Aeronautical Radio, Inc., and the Air Transport Association of America, jointly (ARINC and ATA); and RCAC. Comsat on September 16, 1966 filed a response to the RCAC and GSA petitions, opposing the former and supporting the latter. It filed a reply to the oppositions to its own petition on October 14, 1966.

2. The document to which the petitions are addressed grew out of our inquiry into, among other things, the extent to which Comsat may be authorized to provide channels or services to persons other than communications common carriers, ________, and the extent to which Comsat should, as a matter of policy, be so authorized by the Commission. In essence, we held, for the reasons set forth in our decision that, although Comsat may lawfully be authorized to provide service to non-carriers, it was primarily a carrier's carrier and should serve noncarriers directly only in unique or exceptional circumstances. The petitioning parties express widely divergent views. RCAC seeks more specific procedural controls on ComSat's negotiations with the various entities, including foreign users; CSA seeks clarification of the unique position of the government as a user; ComSat seeks broader authority to deal with users other than common carriers, including the Covernment itself.

Docket No. 16058

3. We shall deal first with the contentions directed to the Government's position as a user (See Part I, below). We shall then deal with the other contentions, and, in particular, those of ComSat as to the alleged restrictive effects of our decision (Part II) and of RCAC as to the need for certain procedural revisions (Part III). Any contention not treated in the following discussion is rejected for the reasons set forth in our prior report.

Part I. The Contentions With Respect to the Government's Fosition as Authorized User

4. GSA and ConSat filed petitions for reconsideration with respect to that portion of our decision dealing with the Government's position as an authorized user. As to some of the matters raised, our prior decision already sets forth our position, and we will not, therefore, here repeat the discussion in that decision. However, we agree with GSA that clarification of our July 21 decision in some important respects is called for.

5. First, we shall, as requested by GSA stress again the wide area of agreement. We agree -- and so stated in our decision of July. 21 -- that the Government has a special status under the Satellite Act. See par. 25 and discussion therein; Section 305(b)(4) of the Satellite Act. We also agree that with respect to this matter the Director of Telecommunications Management (DTM) has a special role and responsibility, in view of the special duties assigned to the DTM by the Fresident in the telecommunication field (e.g., Executive Order 11191). We pointed out in our July 21 decision that in certain instances the Government has a special position because of its unique and national interest requirements, and that ComSat may be authorized to provide service directly to the Covernment whenever such direct service is in the national interest. Clearly, in view of the foregoing, the DTM is the focal point for the judgment of the Executive agencies as to the national interest. Finally, we recognize that the determination of communications services needed because of defense requirements in the national interest is a matter peculiarly within the province of the Executive. Cf. Bendix Aviation Corp. v. U.S., 272 F. 2d 533, 106 U.S. App. D.C. 304, cert. den., 361 U.S. 955.

6. Accordingly, we have concluded that our prior decision, and particularly Paragraphs 38(c) and 39, did not appropriately delineate the situation with respect to the Government as an authorized user and the procedures applicable thereto. We recognize that Comsat may be authorized to provide service directly to the Government whenever such direct service is in the national interest, and that raragraph 39 should

No. 5 A

not be applicable to service to the Government. While no specific procedures or criteria (other than the national interest) are proposed with respect to this governmental facet, in all cases where ComSat seeks to deal directly with the Government we shall act promptly after receipt of advice from the DTM. In acting on requests by Comsat for authorization to provide service directly to the Executive, it is the DTM, and not Comsat, to whom the Commission may turn with respect to the critical national interest facet. Our decision is hereby amended to the extent of reflecting the foregoing revisions.

Part II. <u>Consat's Contentions Concerning the Alleged Effects</u> of cur Policy.

7. Comsat states that, apart from direct service to the Government, its statutory mission may be best accomplished by affording the conventional carriers full opportunity to provide satellite service, reserving the opportunity to provide direct service to users in justified and enumeriated circumstances when necessary to spur development and utilization of satellite communications. Specifically, it says, it has urged that we recognize its right to serve users directly (a) where conventional carriers fail to make a desired satellite service available on reasonable terms; (b) where a new satellite service is provided on a developmental basis; and (c) where such service to a user or class of users would in a particular case be in the public interest. While it feels that we have adopted these suggestions in principle, it is concerned that we may in practice adopt an unduly restrictive approach which may undermine the salutary effect of defined exceptions to the "cerrier's carrier" policy. In particular, it is gravely disturbed by what it considers an adoption by us of a composite rate approach, under which satellite economics are realized by users only through reduction in charges made for services provided over all media, which it seems to feel militate against separate rates for satellite services.

8. As Comsat points cut, the approach we have taken is consistent with its own thinking as to the role of being primarily a carrier's carrier, dealing directly with users as an exception to that general principle. We are, of course, well aware of our responsibilities for encouraging the development and use of satellite communications, as well as for seeing that needs of users are effectively met. The point we were stressing, however, was that this should not be at the undue expense of the vast majority of users, who would not be in a position to go to Comsat directly. We also have a general responsibility to the public, which necessarily must be harmonized with our particular responsibilities for satellite communications, to assure adequate service at

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reasonable charges and to take steps to assure that the conventional carriers responsible for general service can meet this obligation. The concern expressed in our decision was over the danger implicit in competition between Comsat, having a favored position with respect to a more economical medium, and conventional carriers who are at a disadvantage in not being able to acquire such a favored position. Unless closely and wisely regulated to harmonize the statutory responsibilities above, this unequal position could result in an overall deterioration in public communications services. The approach we took on rates was a consequent corollary of these considerations, and does not, of course, preclude the establishment of satellite rates, as distinguished from a composite rate, where in the public interest.

Part III. Suggested Procedural Revisions

9. The parties have filed petitions for reconsideration and clarification in this proceeding concerned with the lack of formalized procedures to be followed by Comsat in requesting authorization to serve directly non-carrier entities. As to the case of procedure with respect to direct service to the Government, this matter is discussed in par. 6, <u>supra</u>. With respect to RCAC's contentions, we believe that no revisions are called for at this time, in light of the policies established in our prior decision and in this Memorandum Opinion and in light of the fact that the Commission receives regular monthly reports of foreign negotiations in this area. Further experience is necessary to enable the Commission to determine what, if any, changes are required. The Commission will remain cognizant of the petitioners' contentions in this regard and reassess the procedures now established from time to time in light of experience gained.

10. ACCORDINGLY, IT IS ORDERED, This 1st day of February, 1967, that the Petitions for Reconsideration cited above, and the replies and responses therato, are granted to the extent set forth above in paragraph 6 and are otherwise denied.

FEDERAL COMMUNICATIONS COMMISSION

Ben F. Waple Secretary

Released: February 3, 1967

Department of Instice Washington

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LEGAL ADVISER

Mr. Leonard C. Meeker Legal Adviser Department of State Washington, D. C.

APR 3 0 1969

DEPARTMENT OF STATE

Dear Mr. Meeker:

IT A TTANET GENERAL

This responds to your letter of February 18, 1969, in which you have asked for our opinion on two questions concerning the authority of the National Aeronautics and Space Administration (NASA) to provide launch services to a foreign government for a domestic communications satellite system. 'Your questions are:

- (1) "Under existing domestic law is there any legal obstacle or impediment to the provision of launch services by the National Aeronautics and Space Administration to a foreign government having a foreign operational domestic communications satellite system?
- (2) "If NASA has authority to provide such services under our law may it do so independently of the Communications Satellite Corporation, whether acting as an independent United States corporation or as an agent for Intelsat?"

Although not specifically so stated in your letter, I understand your questions assume that such launch services would be provided on a 100% reimbursable basis. In these circumstances, it is our opinion that (1) there is no legal impediment to the provision of launch services by NASA if the President should direct such action; and (2) that launch services pursuant to such Presidential directive may be furnished independently of the Communications Satellite Corporation (Comsat). We have considered the legal memoranda submitted by NASA and Comsat concerning these questions. Those memoranda discuss NASA's authority to engage generally in activities of a purely operational nature. No opinion is expressed herein on that issue because we find sufficient specific authority in the pertinent legislation to dispose of the questions presented without reaching the broader questions discussed by NASA and Comsat.

I. .

The determination of the authority of NASA to provide launch services for foreign operational domestic communications satellite systems calls for construction of the National Aeronautics and Space Act of 1958, 72 Stat. 426, as amended, 42 U.S.C. 2451 et seq. ("Space Act") and the Communications Satellite Act of 1962, 76 Stat. 419, 47. U.S.C. 701 et seq. ("CSA").

The Space Act provides, in § 102(c)(42 U.S.C. 2451(c)), that -

"The aeronautical and space activities of the United States shall be conducted so as to contribute materially to one or more of the following objectives: * * *

(7) Cooperation by the United States with other nations or groups of nations in work done pursuant to this Act and of the peaceful application of the results thereof"

Section 205 (42 U.S.C. 2475) provides that:

"The [National Aeronautics and Space] Administration, under the foreign policy guidance of the President, may engage in a program of international cooperation in work done pursuant to this Act, and in the peaceful application of the results thereof, pursuant to agreements made by the President with the advice and consent of the Senate." The quoted provisions constitute a clear mandate for NASA to engage in international cooperation, not only in research, but also in the application of the results of aeronautical and space activities. 1/ The legislative history of § 205 makes it clear that such cooperation is to be under the guidance of the President. 2/ The only question as to NASA's authority under this section is whether such international cooperation may only be carried out pursuant to agreements made by the President with the advice and consent of the Senate.

President Eisenhower stated with respect to § 205 at the time he signed the Space Act that he did not construe that section as prescribing the only permissible form of international cooperation:

"The new Act contains one provision that requires comment. Section 205 authorizes cooperation with other nations and groups of nations in work done pursuant to the Act and in the peaceful application of the results of such work, pursuant to international agreements entered into by the President with the advice and consent of the Senate. I regard this section merely as recognizing that international treaties may be made

1/ There is also some evidence that § 203(b)(6), 42 U.S.C. 2473(b)(6), which authorizes NASA to cooperate with other government and public and private agencies was intended to include foreign governments. See H. Rep. No. 1770, 85th Cong., 2d Sess. p. 9 (referring to the predecessor paragraph 302(a)(6) in an earlier bill).

2/ The section that eventually became § 205 as it was first passed by the House provided that international cooperation should be "under the foreign policy guidance of the State Department." H. Rep. No. 1770, 85th Cong., 2d Sess. p. 25. The Conference Report (H. Rep. No. 2166, 85th Cong., 2d Sess. p. 21) states that the conferees adopted a revised version "specifying that the Administration would act under the foreign policy guidance of the President rather than the State Department." in this field, and as not precluding, in appropriate cases, less formal arrangements for cooperation. To construe the section otherwise would raise substantial constitutional questions." Press Release of July 29, 1958, <u>Public Papers of</u> the Presidents of the United States: <u>Dwight David</u> <u>Eisenhower 1958</u>, par. 185, p. 573.

In addition to this ground for not holding agreements with the advice and consent of the Senate to be necessary for international cooperation in all cases, Congress has subsequently provided detailed guidance for purposes of international cooperation by the United States with respect to communications satellites. The Communications Satellite Act of 1962 (76 Stat. 419, 47 U.S.C. 701 et seq. (CSA)) sets forth the applicable policy objectives and limitations on executive actions, and clearly does not require that such international cooperation be limited to agreements entered into with the advice and consent of the Senate. The meaning of section 205 of the Space Act must be construed in the light of this subsequent, and definitive, legislation on the subject of international cooperation by the United States in the field of communications satellites.

The Communications Satellite Act provides in § 102(a) and (b) (47 U.S.C. 701(a) and (b)) that "it is the policy of the United States to establish, in conjunction and in cooperation with other countries . . . a commercial communications satellite system as part of an improved global communications network . . ." and that "in effectuating this program care and attention will be directed . . toward efficient and economic use of the electromagnetic frequency spectrum. . ".

Section 201(a) (47 U.S.C. 721(a)) directs that, in order to achieve the objectives and carry out the purposes of that Act, the President shall --

- 4 -

"(3) . . . coordinate the activities of governmental agencies with responsibilities in the field of telecommunication, so as to insure that there is full and effective compliance at all times with the policies set forth in this Act;

"(4) exercise such supervision over relationships of the Corporation [Comsat] with foreign governments or entities or with international bodies as may be appropriate to assure that such relationships shall be consistent with the national interest and the foreign policy of the United States;

"(5) insure that timely arrangements are made under which there can be foreign participation in the establishment and use of a communications satellite system; . . .

"(7) so exercise his authority as to help obtain coordinated and efficient use of the electromagnetic spectrum and the technical compatibility of the system with existing communications facilities both in the United States and abroad."

Although the CSA was enacted for the purpose of establishing an international communications satellite system, the issues raised by any proposal for United States cooperation in the establishment of a foreign communications satellite system are inseparable from those relating to the success of the international system "as part of an improved global communications network."

The CSA is a very broad mandate to establish a global network of satellite communications on the basis of international agreements to be negotiated in the future. When the CSA was enacted it was generally believed that for both technical and economic reasons any communications satellite system would be international in character, and that duplicate systems would present serious problems of

- 5 -.

economic feasibility and technical interference in the use of the electromagnetic spectrum. 3/ While it was anticipated that communications satellites might also be used for domestic communications, the feasibility of separate systems for this purpose was not considered a likely prospect for the near future. Congress could not and did not attempt to foresee what specific organizational form domestic communications by satellite would have in relation to international communications. It did, however, make clear the objective of the United States that an international communications satellite system be established soon, and on the basis of international agreement that would protect the system from technical interference in the use of the electromagnetic spectrum as well as uneconomical competition with competing systems. To these ends, the Act authorized the President, among other things, to insure that arrangements be made for foreign participation in the system and to use his authority to obtain coordinated and efficient use of the electromagnetic spectrum.

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Whether, and to what extent, domestic communications satellite systems established by other nations should be integrated with or operate separately from the international system is a question that is inextricably related to the issues involved in the establishment and operation of the international system. The authority to determine the U.S. position and to enter into agreements dealing with such questions must be deemed included within the broad authority conferred upon the President by the CSA.

The broad range of possible forms of international cooperation intended to be made possible by the CSA include the conclusion of international arrangements through

- 6 -

3/ See, e.g., S. Rep. No. 1584, 87th Cong., 2d Sess. (1962) p. 8; Hearings before the House Committee on Interstate and Foreign Commerce on H.R. 10115 and H.R. 10138, 87th Cong., 2d Sess., part 2, p. 422 (1962). less formal devices than a treaty, as exemplified by the various agreements on which the Intelsat system is based. 4/

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The clear legislative intention of the CSA is to vest in the President control of the activities of NASA and other government agencies, as well as of Comsat, when engaging in programs of international cooperation in satellite communications. I therefore conclude that the only requirement of domestic law that must be satisfied before NASA may provide reimbursable launching services for a foreign operational domestic communications satellite system is the specific approval of the President.

II.

The foregoing analysis also provides the answer to your second question. Since the authority for NASA to provide such launch services is to be found (a) in NASA's general authority under the Space Act, and (b) through the approval of the President under his authority in both § 205 of the Space Act and § 201(a) of the CSA, I can find no requirement that Comsat be involved in any way in the provision of such services. 5/

4/ The Intelsat system is governed by three separate agreements. The International Telecommunications Satellite Consortium of August 20, 1964 (TIAS 5646) is an intergovernmental (executive) agreement. In addition, a "Special Agreement" (also TIAS 5646) is an agreement between the operating entities, including Comsat. A separate arbitration agreement was concluded subsequently between these operating entities.

5/ Section 201(b)(5) of the CSA (47 U.S.C. 721(b)(5)) which directs NASA to furnish reimbursable launch services to Comsat, is not inconsistent with this conclusion. That section is simply a direction making it mandatory that NASA provide such services. See, e.g., (Cont'd.)

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I trust that the foregoing answers your questions.

Sincerely,

William H. Rehnquist

Assistant Attorney General Office of Legal Counsel

5/ (Cont'd.) testimony of NASA Administrator James E. Webb in hearings before the Senate Commerce Committee on S. 2814, 87th Cong., 2d Sess., p. 143, and before the House Commerce Committee in hearings on H.R. 10115 and H.R. 10138, Pt. 2, pp. 608-9. There is no indication, either in the CSA, or in its legislative history, that section 201(b)(5) was intended as a limitation on the specific form of arrangements that might be negotiated for a global network of satellite communications. Indeed, section 305(a)(1) expressly recognizes that Comsat's ownership interest in an international system may be either by itself "or in conjunction with foreign governments or business entities."

8.

May 13, 1969

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MEMORANDUM FOR GENERAL O'CONNELL

The Communications Satellite Act appears to give the President substantial authority and responsibility relevant to the characteristics of a domestic satellite system. Could you please advise on how these provisions provide authority for the President to take an initiative in defining the broad characteristics of domestic satellite policy and of a domestic satellite system. This should include how the Act may limit what the President can do, how it has been interpreted, and the extent to which a Presidentially stated interpretation could clarify such issues.

Could you also forward a summary of the "30-circuits" case to include the issues as defined by the FGC, their ruling, and the provision for DTM certification that procurement of the circuits from COMSAT is in the national interest.

Signed

Glay T. Whitehead Staff Assistant

cc: Mr. Whitehead Central Files

May 6, 1969

Comment

MEMORANDUM FOR THE RECORD

Section 201 (a) of the Communications Satellite Act seems to give the President substantial authority that may be useful in our domestic satellite activities. In particular, it provides that the President shall coordinate the activities of Government agencies with responsibilities in the field of telecommunications to achieve compliance with the Act, and still exercise his authority to help obtain better use of the spectrum and the technical compatibility of the system with existing communications, both in the United States and abroad.

We should check to find out how these provisions may help us in intervening in the domestic satellite inquiry before the FCC and proposing or directing the kind of experiment we have discussed.

Also need to get a reading on how the Communications Satellite Act may limit what we can do, how it has been interpreted, and the desirability of a Presidentially stated interpretation with respect to domestic satellites or a Presidentially suggested amendment to the Act.

> Clay T. Whitehead Staff Assistant

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May 3, 1969

MEMORANDUM FOR GENERAL O'CONNELL

Mr. Flanigan has sent out the attached letter to Congressman Follock. Would you please forward the attached copy of Congressman Pollock's letter to the Federal Field Committee. A suggested draft letter is size attached.

Signed

Clay T. Whitehead Staff Assistant

Attachmente

cc: Mr. Flanigan Mr. Hofgren Mr. Whitehead Mr. Rose Central Files

May 2, 1969

Con man time

Dear Mr. Pollock:

The contents of your letter of March 5, 1969, have been discussed with the Communications Satellite Corporation, the Department of Defense, a representative of the Federal Field Committee for Development in Alaska, and the Special Assistant to the President for Telecommunications, who is concerned with communication satellite matters. The points you raised deserve carnest consideration in the planning for future satellite communications systems.

The Communications Satellite Corporation (COMSAT) has a pending pathtion before the FCC for authority to install a communications satellite earth station at Talkeetna, Alaska. The Department of Defense supports COMSAT in this petition. I understand that FCC action can be expected in the near future.

While this station will not satisfy all of the requirements identified in your letter, it will substantially improve communications between Alaska, the South 48 and the rest of the world.

The question of intrastate satellite communications for Alaska is being considered in the Request for Offers for purchase of the Alaska Communications System which states: "...offerors are urged to either provide in their basic offers...proposals encompassing the use of satellite communications, as appropriate, for interstate and intrastate communications." However, it should be noted that COMMAT completed a study in October 1965 which concludes that a separate satellite system for Alaska would not be profitable, as you noted in your letter, and would require Federal financial assistance. This aspect of your suggestions should be raised with the appropriate department of Government.

A Federal Field Committee for Development Planning in Alaska was established by Executive Order 1182 and is charged, among other things, to "serve as the principal instrumentality for developing coordinated plans for Federal programs which contribute to economic and resources development in Alaska and for recommending appropriate action by the Federal Government to carry out such plans.

Sincerely,

Signed

Peter M. Flanigan Assistant to the President

Honorable Howard W. Pollock House of Representatives Washington, D. C. 20515

General O'Connell

cc: Mr. Flanigan Mr. Hofgren Mr. Whitehead Mr. Rose Central Files

HOWARD W. POLLOCK

1507 LONGWORTH HOUSE OFFICE BUILDING (202) 225-5765

> ALASKA OFFICES: 326 H STREET ANCHORAGE 99501 (907) 272-3332

M15 FEDERAL EUILDING JUNEAU 99801 (907) 586-7409

President Richard M. Nixon The White House Washington, D.C.

Dear President Nixon,

Alaska is the only State in the Union that still does not have adequate long-range communications tying its communities together. The creation of a terrestial system of communication transmission to interconnect the widely scattered points of population in the State is neither technologically logical nor economically viable. Fortunately, the very rapid development in the last few years of space science and satellite technology makes possible a powerful new tool to provide the interconnection within the State of Alaska needed to satisfy a broad scope of purposes.

Just last month a study group of the National Academy of Sciences has emphasized that certain communication applications of satellites seem so easy technically, so reasonable economically and so potentially desirable that they recommend consideration of their implementation as a matter of high priority. One of the systems recommended was a multichannel distribution system for networking television for both the private and public sectors. The other is a multi-channel system for cducational, instructional and informational television for developing countries as well as for audiences sparcely spread throughout the United States. Both of these are directly applicable to the needs in Alaska.

The most critical communication needs of Alaska were recently highlighted as follows:

1. The ability to interconnect with the rest of the United States and with the rest of the world on a basis at least equal to that now found everywhere in the United States except Alaska.

2. The ability to communicate by telephone between any two populated points within the State of Alaska.

3. The ability to receive direct, live domestic commercial and noncommercial television programs on a basis at least equal to that now enjoyed everywhere in the United States except in Alaska.

4. The ability to apply instructional television as a means of overcoming the difficult problem of providing adequate educational instruction to the population living in the remote regions of Alaska.

Congress of the United States House of Representatives March 5, 1969_{MAR} 6 1969 COMMITTEES

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INTERIOR AND INSULAR AFFAIRS

MERCHANT MARINE AND FISHERIES

POLICY COMMITTEE

COMMITTEE ON COMMITTEES

NATIONAL CONGRESSIONAL COMMITTEE

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Additional services which the new satellite technology makes possible are aeronautical and ship-to-shore communications, as well as state-wide communication for emergencies and rescue operations.

System configuration studies for satellite communication within Alaska have progressed to the point where it is possible to sketch a satellite system that will provide Alaska with the communication it needs so badly. These studies prove technical feasibility, but conclude that in the early phase the costs involved are such that these services are unlikely to be commercially profitable. The studies also indicate, however, that the amount of government assistance that might be required to bring about such services is quite modest when viewed against the levels of expenditure currently being made by the government in the various fields of activity which such a system would directly support. For example, in 1968-1969 about \$50 million was included in the educational budget for Alaska with an additional \$14 million authorized for the construction of educational facilities through the issuance of bonds. In other words, some \$64 million a year is presently committed toward education in Alaska. The studies indicate a suitable satellite system capable of prov ding a television channel to 40 communities in Alaska (representing some 100 schoolrooms and more than 85 per cent of the student population) could be maintained in orbit for about a 10 per cent increase in this annual appropriation to education.

One possible configuration consists of a multi-beam sattellite with a special antenna directing its energy on Alaska. Our major cities could be provided with a hundred voice channels interconnecting them and providing a connection service to the "South 49" states and to the rest of the world.

The outlying regions would be interconnected with reliable communications by relatively small radio sets (seven to ten-foot diameter parabolic antennas) costing about \$10,000 each. The exact number would depend on the requirement at the time, but 100 to 300 locations seem feasible. Such a system providing educational TV, reliable communications for the bush, and interconnecting Alaska's major cities could be provided for an investment of between \$50 and \$60 million.

Alaska represents within the United States a nearly perfect prototype region which can be used by the U.S. Government to study various approaches for the application of space technology in assisting the developing countries of the world. Alaska can be thought of as "the United States testing ground" for various technological advances that will provide communication to remote regions, television to widely scattered populations, special emergency and operational communications which may be applicable to oil exploration on the northern slope. This concept could become a key element in the formulation of a new United States communications policy in furtherance of a national program for the application of space technology to fulfilling the needs of people in Alaska and elsewhere in the world.

The U.S. Government and industry must be free to innovate and invoke new approaches. One such new approach would be to undertake as a national program, the establishment of a satellite system intended to serve these communication needs of Alaska by drawing upon funding which could be made available from the budgets which are allocated to education, to land management and exploration, to transportation and safety services; as well as the private. commercial sector. Such a national approach can bring about an early realization of the benefits, as well as the full understanding of the problems, limitations and potentials so necessary for this country to maintain its role of leadership in extending the benefits of space technology to the world.

Cordially,

OLLOCK HOWARD W. The Congressman Alaska

HWP:d
DRAFT

Chaiman

Federal Fleid Committee for Ecvelopment Flatsing in Alaska Suite 450 Elff Scilding Anchorage, Alaska

Dear Sir:

The attached letter from Representative Pollock is forwarded for your consideration. The thoughts expressed by Mr. Pollock should be of value in your planning for Sedaral programs which contribute to economic and resources development in Alaska.

Sincerely,

J. D. O'Connell Epocial Assistant to the President for Telecommunications

Attachment

COMMUNICATIONS SATELLITE CORPORATION

Date _ April 15, 1969

SA

To: _____ Mr. Clay T. Whitehead

From: Robert E. Button

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For your information.

atcs.

Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D. C. 20554

In the Matter of the Establishment of domestic communications satellite facilities by non-governmental entities.

Docket No. 16495

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COMMENTS OF COMMUNICATIONS SATELLITE CORPORATION

1. Communications Satellite Corporation (Comsat) submits herewith its comments on the recent submission of the General Electric Company (GE). The GE presentation consists of a description of a domestic communications satellite system to provide primarily data and other record services and closed circuit television service. The system model and the projected market described by GE contemplate requirements around 1980. GE does not support in detail its conception of what the future holds either by proposing to implement its plan at this time or by suggesting the means of effecting the transition from the present to the time when the arrangements it describes might be feasible.

2. Comsat believes that the means for realistically bridging the domestic communications requirements of today and tomorrow are at hand. We believe this can be achieved through the implementation of Comsat's pending proposal of a multi-purpose domestic satellite system to be initiated on a partial scale with Comsat as the interim owner of the system facilities. This would permit the postponing of decisions on permanent ownership and ultimate service arrangements until the extent of the market for satellite services is better known and until experience with various service arrangements have shown which are feasible, economically and otherwise, and which are not. The initial, partial scale system could be expanded either incrementally or by predetermined stages, although we would think it best to expand incrementally as demand requires and not be paced by any artificial period for operating the facilities initially planned. Decisions concerning expansion would depend upon requirements of users and upon traffic commitments that emerge during the formulation of a system plan and thereafter. If there are customers whose record service requirements appear to be similar to those suggested by the GE submission, these requirements can be accommodated in the formulation of the system plan or even later.

-2-

3. GE's submission emphasizes the provision of "record" services and de-emphasizes the network television market. This concentration on record services raises again the issue of a multi-purpose system versus a single purpose, or dedicated system which has been much discussed in this proceeding. (For example, see Comsat's Supplemental Statement, pp. 8-17, December 16, 1966.) Comsat still holds very firmly to the view that the greatest economies and service benefits to all communications users during the early years will be realized through a multiple use system. There are two fundamental reasons for this view. First, it would not exclude the service for which satellite facilities offer a particular and immediate opportunity, namely, network television. The multi-destination flexibility of satellites, and the large communications capacity required for television which places a premium on the economies of scale inherent in the satellite service, both make the satellite service especially attractive for commercial and non-commercial television transmission. Second, without the television service base in addition to the voice and telegraph message requirements indicated to date by the carriers, it would not appear economically feasible to establish any

-3-

domestic satellite service proposal for many years. On the other hand, by proceeding with an initially partial scale, multiple purpose system servicing the known television and message service market, the record market can be tested, evaluated, and developed without prejudice to the later adoption of a different method of serving that market, if experience in commercial application demonstrates that that is warranted.

* * * *

Accordingly, Comsat again requests that the Commission act favorably on its proposal for the initiation of domestic communication satellite services.

Respectfully submitted,

COMMUNICATIONS SATELLITE CORPORATION

By David C. Acheson

Vice President and General Counsel

By

Peter M. Andersen 950 L'Enfant Plaza So., S. W. Washington, D. C. 20024

April 14, 1969

A. 18

Its Attorneys

Mr. Robert E. Button Special Assistant to the Chairman Communications Satellite Corporation 950 L'Enfant Plaza South, S. W. Washington, D. C. 20024

Dear Bob:

*

Thanks much for the analysis of alternatives for international mergers of telecommunications services and entities. It was very informative. Could you send the whole report?

Let's talk again after I chat with Nick Johnson.

Sincerely,

Signod'

Clay T. Whitehead Staff Assistant

CTWHITEHEAD:ed

COMMUNICATIONS SATELLITE CORPORATION

ROBERT E BUTTON The Special Assistant to the Chairman

March 25, 1969

The Honorable Thomas Whitehead Staff Assistant to the President The White House Washington, D.C. 20500

Dear Tom:

The attached might be of possible background use in your forthcoming discussion with people from the industry. It is a summary of a study we commissioned two years ago. The task force used it as a sort of starting point for chapter 2.

Sincerely,

atc.

IX. MERGERS AND ORGANIZATIONAL ALTERNATIVES

The international telecomunications establishment could be restructured in many possible ways. Any consolidation of the plant and entities involved should increase efficiency, however, and the greater the consolidation, the greater the potential improvement in efficiency and reduction in rates.

Since the Intragovernmental Committee has proposed and prepared a draft of permissive merger legislation, Congress undoubtedly will conduct hearings on possible mergers in 1967. These hearings probably will serve as a forum for debating the merits of various mergers. If one of the carriers could onvince Congress that a single entity could provide all international communications in the most advantageous manner, Congress might not enact permissive legislation and instead enact mandatory legislation selecting a carrier as the chosen instrument.

More than 50 possible merger combinations exist. Only some eight of these are realistic possibilities, however. The eight organizational alternatives which were considered seriously by Spindletop are discussed in subsequent paragraphs. The alternatives are summarized for early reference in Figure 13.

Alternative	1Merged	Records
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I	n	t	e	r	n	a	t	1	0	n	55	1	
-	-	-		-	-	and a	and	h	-				-

AT&T--Voice Merged Records--Record COMSAT--Satellite Mode AT&T--Voice Western Union--Record COMSAT--Satellite Mode -

Domestiç

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If alternative 1 were selected, the international record carriers would merge and provide the same service as they now provide. Consolidating the plants, sales offices, and personnel should improve efficiency and eventually lower rates. This alternative should not significantly change the domestic structure.

Alternative 2-	-Single	U.S. R	ecord	Carri	er
International			Dome	stic	
	1. A.				
T&TVoice		AT&T-	-Voice	3	

Western Union--Record COMSAT--Satellite Mode AT&T--Volce Western Union--Record COMSAT--Satellite Mode

	1 .	2	3	4	5	6	7	8
INTERNATIONAL	AT&T Voice Merged Record Record Comsat Satellite Mode	AT&T Voice Western Union Record Comsat Satellite Mode	Western Union Voice and Record Comsat Satellite Mode	Merged Record Record Comsat Satellite Mode and AT&T Cables	Single Entity I Ove The Art Carrier's Carrier	Single Entity II [†] Carrier's Carrier	Single Entity III Common Carrier Record	Single Entity IV† Common Carrier Record
DOMESTIC	AT&T Voice Western Union Record COMSAT Satellite Mode	AT&T Voice Western Union Record COMSAT Satellite Mode	AT&T Voice and Record COMSAT Satellite Mode	AT&T Voice Western Union Record COMSAT Satellite Mode*	AT&T Voice Western Union Record COMSAT Satellite Mode	AT&T Voice Western Union Record COMSAT Satellite Modet)	AT&T Voice Western Union Record COMSAT Satellite Mode	AT&T Voice Western Union Record COMSAT Satellite Mode*

Alternative

*COMSAT may have to relinquish domestic satellite mode to AT&T if AT&T cable plant is acquired.

+COMSAT

*Domestic satellite mode probably will have to be relinquished if COMSAT is chosen instrument in international communications.

Figure 13. Organizational Alternatives

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Under alternative 2 Western Union would acquire the total international record plant and continue as the domestic record carrier. The consolidation resulting from alternative 2 would be greater than that achieved by merging the record carriers. The gateway city facilities could be eliminated and the Western Union domestic offices would serve customers. The single record campany would provide the same service as today and would have a monopoly in telegraph, Telex, Datel, and AVD.

Alternative 3--Geographic Trade

	3
International	Domestic
Nectorn Union Voice and Decord	

COMSAT--Satellite Mode

AT&T--Voice and Record COMSAT--Satellite Mode

4)

- 1 -

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All competition between voice and record would be eliminated if this alternative were elected. Western Union would acquire the AT&T international record plant in return for its domestic plant. Western Union would be a "carrier's carrier" for AT&T for all services and would not serve customers directly. Western Union would continue expanding the cable plant to maintain a group rate base. Since two entities are involved, domestic and international connections would be less efficient than under alternative 2.

Alternative 4--COMSAT Gains AT&T Cables

International

Domestic Nilles - 3 ini /AT&T--Voice es - COMSAT--Satellite Mode

Nerged Records---Record COMSAT--Satellite Mode and AT&T Cables

As in alternative 1, the international record carriers would merge if alternative 4 were selected. COMSAT would acquire the ATAT international cable plant, however. This acquisition would be permitted, based upon the premise that COMSAT would stop expanding the cable rate base to increase the demand for low-cost satellite circuits. To achieve this end, COMSAT might have to relinquish rights to domestic satellite operations to ATAT. COMSAT thus would become a "carrier's carrier" for ATAT and would furnish both cable and satellite service to ATAT. COMSAT also would serve as a carrier's carrier to the merger, record entity, in that the satellite and certain cable channels would be furnished. The record entity would have its own cable plant (actually portions of cables owned by COMSAT), however, and presumably could buy additional cable channels from COMSAT as requirements dictated.

Alternative 5--Single International Entity--I

If this alternative were selected, an existing record carrier would become the chosen entity. The entity would acquire the AT&T and record international plants and assume the COMSAT ownership and role in INTELSAT for international satellite communications. COMSAT would provide domestic satellite communications. The new international entity would be an international carrier's carrier for AT&T and Western Union, and would not deal directly with either voice or record customers. The entity would be ratebase oriented and would expand its cable plant to the maximum extent allowed by the FCC.

Alternative 6--Single International Entity--II

This alternative is similar to alternative 5 except that COMSAT would become the chosen instrument for international communications. COMSAT would acquire AT&T international radio and cable plants and the international record plant. It would retain ownership in INTELSAT and become a carrier's carrier for both AT&T and Western Union. COMSAT, as the single international entity, would be charged with exploiting satellite technology to the maximum extent possible. New submarine cables would not be installed unless circuit costs could be lowered by doing so (e.g., perhaps short links). The cables in operation in the late 1960s would provide enough redundancy (during the life of the cables) to satisfy Department of Defense requirements.

Alternative 7--Single International Entity--III

This is the same structure as alternative 5, except that the international entity would be a common carrier for record services. It would retain gateway facilities and sales offices to serve record customers.

Alternative 8--Single International Entity--IV

This is the same structure as alternative 6, except that the international entity (COMSAT) would be a common carrier for record services.

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VILLER CONVERSE

In addition to improved efficiency, other aspects of the national interest must be considered when comparing various organizational alternatives. Table 11 compares the eight organizational alternatives with a number of factors pertinent to the national interest. All of the organizational alternatives represent improvements over the present structure. The merger of the record carriers--alternative 1--would improve economic efficiency somewhat but would provide only minor improvement in the other considerations. Alternative 2--the acquisition of the record companies by Western Union--would provide greater economic efficiency but, like alternative 1, would not improve the other factors significantly.

In alternative 3, Western Union would acquire the AT&T international plant in exchange for its domestic plant. This would eliminate voice and record competition. The advantages of this alternative in the international sphere appear comparable with those of alternative 2. The advantages to the domestic communications service could be quite significant, however. The consolidations and efficiencies achieved in the domestic facilities undoubtedly would result in lower domestic rates, particularly for record services.

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Table 11 Organizational Alternatives and the National Interest Land P

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Interservice Competition Improved 1 International Negotiations Some improvements i Interface with Foreign Entities Some improvement i Interface with Domestic Entities Improved 10 Flexibility and New Service Slight 1 Redundancy of Transmission Media Little 1 Responsiveness to Diplomatic and Slight 11 Inforese Needs Slight 1, Responsiveness to Technology Slight 1, Improvement in Rate Reduction by 1975; (U.S. portion) Record 27% Voice 53% Overall 43% i' 1	Improved Little change Some improvement Some Much improved Much improved Little change Slight Slight	3 None Some improvement Improved Improved Slight improved Little change Improved Slight	4 Improved Little change Some improvement Slight improvement Slight improvement Eventual degradation Slight improvement	S Improved Improved Much improved Much improved Much improved Such improved Much improved Much improved Much improved Much improved Much	6 Improved 20 Improved 20 Much improved 20 Much improved 20 Much improved 20 Eventual degradation	Tmproved Improved Much improved Much improved Improved Improved Little change	Improved in the second
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Alternative 4 would increase the economic efficiency of the international telecommunications system somewhat but would offer no other significant improvement.

Alternatives 5, 6, 7, and 8 all involve consolidation resulting in one international telecommunications entity. A single entity would be the most effective instrument of our foreign policy objective. The U.S. telecommunications industry would speak with one voice and negotiations with foreign carriers for new rates and services would be facilitated. A single entity would provide greater responsiveness to diplomatic and defense needs.

Of these four organizational structures, alternative 6 is clearly superior. It would provide the greatest economic efficiency. The lower rates would accelerate the growth of communications throughout the world. This increased demand would result in even greater efficiencies. The only negative aspect of this alternative is the eventual loss of redundancy (a requirement of the Department of Defense) as the existing cable plant is retired from service. Further study of this aspect might point out economical alternative solutions (e.g., additional ground stations, back-up satellites).

Alternatives 7 and 8 were similar to alternatives 5 and 6, respectively, except that the international entity would render record services to the public in the gateway cities. This would result in a larger rate base and greater expenses; the potential rate reductions would be less. Possibly the sales offices would produce enough additional traffic to offset the greater rate base and expenses, but this seems unlikely.

Consat

April 1969

Tom talked with Dave Taylor, Executive Assistant (110) 2003 to Secretary Schultz re the appointment of George Meany to COMSAT.

THE WHITE HOUSE

3/12/69

Tom:

The memo did go to the Secy. of Labor and the memo to the President through the Staff Secy. was as a result of that memo.

(Both attached)

Eva



MEMORANDUM

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THE WHITE HOUSE

WASHINGTON

(Te)

March 11, 1969 2:30 PM

FOR:

The Staff Secretary

FROM: Robert Ellsworth

SUBJECT:

George Meany and the COMSAT Board.

I concur in the recommendation of the Secretary of Labor: the position should be offered to Meany. If he does not want it, then the President should select Abel, Lyons or Minton.

Attachments

MEMORANDUM

Date: March 11, 1969 Time: 12:00 Noon

THE WHITE HOUSE

WASHINGTON

FOR: ACTION: R. Ellsworth H. Flemming cc (for information):

Draft Reply

Draft Remarks

For Your Information

FROM THE STAFF SECRETARY

SUBJECT (see attached): George Meany and the COMSAT Board.

ACTION AND REMARKS:

For Necessory Action

____ Propore Agenda and Brief

For Your Comments

X For Your Recommendations

Other:

The attached memorandum from Secretary Shultz to the President recommends that George Meany be reappointed to the COMSAT Board. The President is meeting with Mr. Meany on Thursday, the 13th, at 10:00 A.M., and it would be appropriate for a decision to have been reached by the President by that time.

DUE: Dato: March 12, 1969

Time: 2:00 P.M.

Please attach this copy to material submitted.

If you have any questions or if you anticipate a dolay in submitting the required material, please telephone the Staff Secretary immediately.

K. R. COLE. JR. For the President U. S. DEPARTMENT OF LABOR OFFICE OF THE SECRETARY WASHINGTON

March 10, 1969

MEMORANDUM FOR THE PRESIDENT

RE: George Meany and the COMSAT Board

Bob Ellsworth has brought to my attention that George Meany's term on this Board is about to expire so that you will decide soon whether to reappoint him or fill his chair with another person.

I recommend that he be reappointed for the following reasons:

1. A strong case can be made that a labor person serve on such a Board, since the organization is responsible in a special way to all segments of the American public.

2. He has personally taken a great interest in this activity and has, I understand, performed ably, in a spirit of non-partisanship appropriate for this job.

3. I would question the advisability of going outside the AFL-CIO, say to the UAW or the Teamsters.

4. Within the Federation, Meany is unquestionably the top man. If he wants the job (my guess is that he does) and is disappointed, he could make it difficult to get another top man.

5. Meany has so far been most cooperative and friendly. I am sure we will have substantial differences, but to date he has been generous in his attitudes and comments, and reasonable in his expectations. MEMORANDUM FOR THE PRESIDENT

Page 2.

6. If another man is to be chosen from AFL-CIO, possible names are:

- a: Lee W. Minton, President of the Glass Bottle
 - Blowers Association of the United States and Canada and a Republican (though he backed Humphrey).
- b: John H. Lyons, a rising younger person and President of the International Association of Bridge, Structural and Ornamental Iron Workers.
- c: I. W. Abel, President of the United Steelworkers of America.

George P. Hults

George P. Shultz Secretary of Labor

March 10, 1969

OMSAT

MEMORANDUM FOR

THE SECRETARY OF LABOR

The term of George Meany as a Presidential appointee to the COMSAT Board of Directors will soon expire. The President must nominate for Senate approval someone to fill this vacancy prior to the meeting of the COMSAT Board of Directors on May 13.

There are fifteen members on the Board of Directors, three of whom are Presidential appointees. These three traditionally have included one representative each from business, from the university community, and from labor. Mr. Meany has been the labor representative since the corporation was founded.

Joe Charyk. President, and Jim McCormack, Chairman of the Board, of COMSAT feel that it would be desirable to reappoint Mr. Meany if the tradition of having a representative of labor is to be continued. They state that he has been quite conscientious in fulfilling his responsibilities and has refrained from a partisan labor stance.

It is my personal spinion that we should find someone from labor for this appointment, but that the President should have the opportunity to consider whether he wants to continue Mr. Meany in that role. Would you give the President the henefit of your views on this subject prior to his meeting with Mr. Meany on March 14. The President probably will want to discuss this subject with Mr. Meany at that time.

Signod

Robert Ellsworth Assistant to the President

cc! Mr. Ellsworth Mr. Hofgren Mr. Whitehead

CTWhitehead:ed

17 February 1969

MEMORANDUM FOR MR. ELLSWORTH

Subject: Comsat Board Member

After the INTELSAT delegation meeting today, General McCormack told me he had enjoyed the session with you and your colleagues.

He said he had forgotten to mention one thing to you-namely--that they will have a Presidentially-appointed opening on their Board of Directors this May when George Meany's term is up. The President appoints three members of Comsat's Board: one from industry, one from labor, and one from education. The terms are for three years.

It is not essential or legally required, he says, that this appointment be from labor. But if the President feels it should be, then Comsat would like to see George Meany reappointed if he will accept. (He is 75 years old.)

They have another opening on the Board for Philip Buchen--one which is not a Presidential appointment.

A.W.

Abbott Washburn

He- Comment

Tuesday 2/11/69

2:55 Bill Morrill wanted you to know that in your discussions re changing the COMSAT Board of Directors (S. 71), it has passed the Senate, but not the House. He had told you incorrectly earlier.

THE WHITE HOUSE

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Bora / Labor / Union

WASHBURN, STRINGER ASSOCIATES, INC.

4622 BROAD BRANCH ROAD, N. W. WASHINGTON, D.C. 20008

362-9494

ABBOTT WASHBURN

February 7, 1969

Dear Bob,

Something came up yesterday that I thought should be passed to you promptly. Possibly you may already have this information.

One of the Comsat executives, Bob Button, sent me word that their president, Joe Charyk, has been talking with Jerry Ford and that Congressman Ford's law partner, Philip Buchen, is interested in getting into the Comsat picture. He would like to serve on the Comsat Board of Directors and also as an observer or delegate to the Satellite Conference, handling liaison with the White House.

Comsat does have a vacancy on its Board coming up in May, when George Meany's three-year term expires. Speaking for Charyk, Button writes: "We would welcome Mr. Buchen as a replacement for George Meany since it is not mandatory to have the replacement come from labor circles. Mr. Buchen could conceivably work with the U. S. delegation to the Satellite Conference as a training ground for later duties as a Comsat Director. I assume that he would not be a candidate to succeed Ambassador Marks as chairman of the delegation (if the Conference extends beyond March 28)."

If two or three Nixon designees are to be added to the delegation, sounds as if he might be a good possibility.

Sincerely, Abbott Washburn

Hon. Robert Ellsworth Assistant to the President The White House Washington, D. C. 20500

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ALLE RID SENA NOTOS-A

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January 26, 1969

JAG NY 1955

JAN 27 1969

TO: JOHN D. EHRLICHMAN

FROM: EDWARD L. MORGAN

SUBJECT: Senate Bill 17: To amend the Communications Satellite Act of 1962 with respect to the election of the board of directors of Communications Satellite Corporation

CURRENT SITUATION

General J. D. O'Connell has been asked to testify before the Pastore Committee regarding Senate Bill 17. General O'Connell is a special assistant to the President for Telecommunications, acting director of Telecommunications Management, and assistant director of the Office of Emergency Planning under General Lincoln.

I met with General O'Connell and his counsel, John O'Malley, on Saturday, January 25. The meeting was a result of his request to see you. He had already conferred with Dan Hofgren of Bob Ellsworth's office. Before the meeting with General O'Connell I went over the matter with Dan Hofgren.

GENERAL O'CONNELL'S REQUEST

General O'Connell advised that he always worked with someone in the Counsel's office regarding proposed legislation. These meetings were in conjunction with the Eureau of the Budget's legislative clearance section, with whom I had, coincidentally, met Friday night on another matter.

General O'Connell sought approval of his testimony, copy of which is attached, as part of the normal White House legislative clearance function.

PROPOSED AMENDMENT

I have reviewed the proposed amendment with General O'Connell and his general counsel and find it to be a routine change in the Act meriting no objections from the administration. Briefly, it does the following:

cc: Dan telefgren

Memorandum 1/26/69 page 2

(1) Provide for the election of directors of the corporation between the public and common carrier shareholders in accordance with a formula based on the proportion of the corporation's voting stock held by both groups. The Act presently provides that the Board shall have 15 directors. 6 of whom shall be elected by the general public. 6 by the common carriers holding stock and 3 appointed by the President. The Act contemplated that the stock would be split with 50% held by common carriers and 50% by the general public. However, ITT sold 900,000 of its shares to the general public, as a result of which 62% of the stock is now held by the public, but the public is unable under the Act to elect more than 6 directors. Therefore, there are now 2 vacancies on the board which can never be filled. This is merely an administrative change in the Act which is necessary for the board to function properly.

(2) The corporation is concerned that since there are two classes of stock and the D.C. Business Act requires a 66-2/3% vote of stockholders to approve the above change, the question could arise regarding whether or not this would require a 66-2/3% vote of each class of stock. I find no reason that the administration should not support this, since it is mechanical to the Act and probably not even necessary.

(3) The amendment would provide that the Board could act with less than 8 members present in time of national emergency. This proposal gains strong support from General O'Connell because in time of an atomic ' attack it is difficult to get 8 men together quickly. This is not abnormal, since other boards have the same power. Naturally, the numbers would be spelled out in the regulations and I am assured that should it be necessary that only one person act, it would be the chairman, followed by a line of successor or chain of command.

REVIEW

This Act has already been before Congress and I attach the memorandum from the Justice Department which supported the legislation and a copy of the study done by the Satellite Board in support of the legislation.

PERSONS WHO WILL TESTIFY

General J. D. O'Connell James McCormick, Chairman of the Board of COMSAT Rosel H. Hyde, Chairman of the Board of FCC Memorandum 1/26/69 page 3

RECOMMENDA TIONS

1. That the Act be reviewed by the Bureau of the Budget legislative section for approval. I have already initiated that action with Mr. Rommel. Assistant Director for Legislative Reference, Bureau of the Budget.

2. That we be assured that all three persons testifying are in general accord. I have already taken steps in this regard.

3. After final legislative clearance between the Bureau of the Budget, General O'Connell, Chairman Hyde, Chairman McCormick and myself, approval be given to General O'Connell's testimony.

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ELM/ms

enclosures:

Copy of proposed testimony Memorandum from Justice Dept. Satellite Board study:

GOSGIGTETT

Putting birds to use

High ranking officials of National Aeronautics and Space Administration have under consideration policy determination that might permit TV networks to use existing or future Applied Technology Satellites for distribution of TV programs to affiliates. ATS spacecraft are orbited to perform scientific experiments; when these are completed satellite is available for other use. TV networks would pay for construction of earth stations and other facilities; there would be no cost to government.

Proposal for pilot commercial satellite system by Communications Satellite Corp. has been pending before FCC for year. NASA plan would require no FCC approval, it's believed, since system would be noncommercial, experimental. Edward Roth, consultant to space agency and former broadcast official (NBC, WGM-TV Chicago, among other posts), is architect of NASA scheme.

Hip shot

They're having second thoughts at White House on President Nixon's endorsement of Senator John Pastore's criticism of sex and violence on television. Nixon letter (BROADCASTING, March 31) expressed concern "with the ethical as well as the artistic level of many television programs and commercials" and referred to misuse "of this great medium." There's hindsight that Nixon letter was cleared without sufficient research and that "clarification" may be forthcoming.

Lesson learned from incident is that communications involving such sensitive areas as program controls, having censorship overtones, won't be handled at lower staff level henceforth out will entail top-policy scrutiny.

Roadblock

Their silence on Post-Newsweek Stations' announced plan to substitute local commercials for cigarette messages in CBS programs (see page 32) does not mean CBS officials are taking it lightly. What it does apparently mean is (1) they did not receive copy of Post-Newsweek letter outlining plan to FCC; (2) they have not had chance to talk to Post-Newsweek officials and therefore (3) they have no first-hand knowledge of Post-Newsweek plans. But don't bet it'll stay that way; they consider it very serious matter. Betting among observers is that no network is likely to

sit quietly and let affiliates not only sell local time in network programing but do so at network expense.

Haven for Smotherses?

Reports circulated late last week, apparently with some foundation, that William Morris Agency has put out high-level feelers at ABC about possibility of moving Smothers Brothers to ABC-TV network next fall or, if not then, as midseason replacement early in 1970. ABC is not commenting on any phase of current Smothers Brothers controversy, but it is widely believed that under normal circumstances network would be interested in negotiating. In present circumstances, however, ABC presumably would want to be sure that Smotherses are legally "free and clear"-that cancellation of their show by CBS will not end up in some sort of lawsuit into which ABC might be drawn.

Changes in making

White House staff isn't permitting grass to grow in its quest for means of cleaning up what's generally regarded as "that communications mess" in Washington. Following preliminary meeting with representative group of broadcasters (BROADCASTING, March 31) White House officials have had informal conversations with other authorities dealing with licensing and regulatory policies and composition of commission itself. Example: Last Wednesday White House Assistant Dr. Clay T. Whitehead, met with NAB President Vincent T. Wasilewski and Joint Board Chairman Grover C. Cobb in follow-up discussion. Presumably intention is to talk with smaller groups as focus narrows.

Meanwhile no new names are being mentioned for possible appointment to FCC. Report persists that chances are good that Commissioner Robert E. Lee will move into chairmanship when Chairman Rosel H. Hyde's term expires June 30. Candidacy of Robert E. But-ton, special assistant to chairman of Comsat, reportedly is in forefront, with file now being examined at top-staff level. Mr. Button was formerly with NBC and has won considerable broadcaster support.

USIA toasts

Odd's-on favorite for director of Voice of America in new administration is Elmer W. Lower, president of ABC News and verteran of 15 years as network news executive (he's been with

all three networks). It's also certain that Dr. Frank Stanton, CBS Inc. president, will be asked to stay on as chairman of U. S. Advisory Commission on Information, which sits over USIA at consultative policy level. Dr. Stanton had submitted his resignation with change in administration and reportedly has felt that with ex-CBS executive Frank Shakespeare as director of USIA, there would be "too much CBS" in organization. But administration reportedly does not want to lose Dr. Stanton's prestige and expertise and has asked him to continue for another three-year term.

Reps vs. reps

Efforts are being made to settle main points of dispute that has had Station Representatives Association and station reps owned by broadcast groups at swordpoint ever since SRA sparked FCC action and plan for rulemaking against group reps few weeks ago (BROADCASTING, March 17, 24). In retaliation, some group-owned reps and their lawyers have been compiling lists of broadcast ownership interests of SRA members-and also have been talking of petitioning FCC to require that station contracts of all reps be made public.

Word now, however, is that this tack might be abandoned if SRA would join group reps in proposing adoption of new FCC rule directed at another issue raised by SRA in its petition to FCC: whether group owners that produce and sell programing should be allowed to represent stations, too. Talks reportedly are being held on compromise plan, said to have been initiated on groupowner side, that would bar such dual activities only if representation were made condition of program sale, or vice versa. SRA members are said to be concerned that multiple owners can use programing as competitive advantage in gaining representation business. FCC officials have indicated their own rulemaking notice will not be issued before mid-May.

Slight fakery

ABC is said to have informed FCC that some ABC personnel were involved in one of four news-staging incidents alleged to have occurred at Democratic national convention in August. Incident was one in which newsman put "Welcome to Chicago" sign in small street fire, and signaled cameraman to film scene.

SATURDAY, MARCH 29, 1969





P. W. BUCHEN

J. H. MCCONNELL

COMSAT NOMINEES—Philip W. Buchen and Joseph H. McConnell have been nominated for election as Series 1 (public) directors of Communications Satellite Corp. Buchen is a Grand Rapids lawyer who recently served as adviser to the U.S. delegation to the International Telecommunications Satellite Consortium. Mc-Connell is president of Reynolds Metals Co., Richmond. Comsat's annual meeting May 13 is in the L'Enfant Theater here. COMMUNICATIONS SATELLITE CORPORATION

Date March 28, 1969

MR. THOMAS WHITEHEAD

From: Robert E. Button

To:

For your information.

atc.

SA

S. G.

Mr. Whilehead.

VARIETY

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March 26, 1969

The State of Wadsworth

Washington, March 25. Most of the talk about changes in membership at the FCC center around FCC Cairman Rosel Hyde, whose term expires June 30, and commissioners Kenneth Cox and Nicholas Johnson, whose activist voting records make them anathema to broadcasters. But Commissioner James Wadsworth, some observers say, may be the first to go-not a prospect to delight broadcasters, since he generally lines up with the Hyde-bound conservatives on the commission.

commission. Speculation about Wadsworth is stirred because he is a Repub-lican in a GOP administration that is under pressure to fill available jobs and because he has never been enchanted with service on the commission. His diplomatic background and interests—he was a United Nations appointee under Eisenhower —equip him admirably for a State Dept. slot. If one is offered to him, the betting is he'll show his heels to the FCC in a flash. An added factor: the Nixon administration is anxious to stay friendly with the Democratic majority in Congress, and Wads-worth's brother-in-law, Sen. Stuart Symington (D-Mo.), is a mem-ber of the Senate Foreign Relations Committee.

COMMUNICATIONS SATELLITE CORPORATION

ROBERT E. BUTTON The Special Assistant to the Chairman

March 26, 1969

Dear Tom:

The corporation referred to in the attached will be 30% carrier owned, 30% general public and 40% government.

I should think we could somehow get started before the Canadians and it would be good for the Intelsat picture if we did. Task Force people used to say let the Canadians go ahead and we will see what mistakes they make, but I cannot see this point of view at all.

Sincerely,

atc.

ccs: J. O'Connell M. Anderson A. Washburn

The Honorable Thomas Whitehead Staff Assistant to the President The White House Washington, D.C. 20500

Defense & Aerospace Systems

Canada to Have Satellite By '71, Space Group Told

By IVOR W. BOGGISS

TORONTO. — Canada will have one communications satellite in synchronous orbit toward the end of 1971. A second vehicle will be placed near the first after about $2\frac{1}{2}$ years. A third will replace the first when the latter's lifespan is almost ended.

Postmaster General Eric W. Klerans, soon to become Canada's first Minister of Communications as well, told Canadian space scientists here this is the Canadian Government's plan for its domestic satellite program. It will be unveiled in detail before the Canadian Parliament "In a matter of a few weeks."

He was speaking at last week's Advanced Aerospace Technology Symposium, sponsored jointly by the Canadian Aeronautics & Space Institute (CASI) and the National Research Council's Associate Committee on Avionics.

Mr. Kierans confirmed that while his new department will initiate a communications satellite program, operations will be undertaken by a mixed public and private satellite corporation. He said this will represent "a new direction in cooperation between Government and industry."

The satellite system envisaged, he said, will constitute for the next several years "the main 'big science' project in Canada—and I mean 'big science' in both its scientific and industrial senses."

Specific proposals for sixchannel communications satellites have already been submitted to Mr. Kierans by RCA, Ltd., and Northern Electric Co., Ltd., Montreal.

The CASI symposium this year combined the annual avionics and astronautics meetings of the Canadian society. Speakers in nine technical sessions hailed from Britain, the United States and Australia, though most talks were written by Canadians.

and Australia, though most talks were written by Canadians. Com satellites, ground station and antenna systems, and satellite electronics dominated the meeting. But alreraft electronics, power supplies, propulsion systems and spacecraft dynamics also came in for review.

Direct Broadcasting.

Direct broadcast satellites and the need for international agreement on how they will be used were also tackled by Mr. Klerans. What frequencies to use for this will be faced by a world administrative radio conference to be convened at the end of 1970 or early in 1971, he said. It was said that one of the

It was said that one of the most exciting benefits of the com satellite era may be the possibility of providing educationally-backward nations with educational opportunities.

tionally-backward nations with educational opportunities. "Clearly it is technically possible to provide satellite television direct to all schools in a nation," wrote Michael O'Hagen, manager, space and defense systems, Standard Telephones & Cables, Ltd., London, in a talk read in his absence. "But there appears almost to be a danger that the very practicability of direct broadcast might overshadow the real prob-

"But there appears almost to be a danger that the very practicability of direct broadcast might overshadow the real problems of optimum utilization," he added. He cited the possibilities for two sub-continent sized nations—Brazil and India. A detailed report on the Arctic

A detailed report on the Arctic Communications (Arcom) earth terminal developed by Northern Electric was given by W. R. Reader, manager of the company's Aerospace Communications Laboratory in Ottawa. A prototype has been built by Northern for Bell Canada at Bouchette, Que., with Canadair, Ltd., Montreal, designing the 30foot antenna and mount.



MINI COM SAT: Eric W. Kierans (center), Canada's Postmaster General, soon to be also Minister of Communications, inspects a model of the Isis-A satellite with speakers at a communications satellite session at the Canadian Aeronautics & Space Institute aerospace symposium in Toronto last week. Left to right: Lorne A. Keyes und John S. Korda, both RCA, Ltd., Montreal; Mr. Kierans; Joseph MacDowall, session chairman, now with the Canadian Department of Energy, Mines & Resources, and David G. Vice, Northern Electric Co., Ltd., Ottawa.

Color TV.

54

Mr. Reader said the terminal is designed to receive one or more color television programs. It uses wide deviation frequency modulation to transmit and receive up to 60 telephone channels or the equivalent in telephone, data and program channels. It has a 100W travelling wave tube transmitter and an uncooled parametric amplifier receiver.

uncooled parametric amplifier receiver. J. S. Korda, Aerospace Reliability Engineering, RCA, Ltd., Montreal, spoke on reliability program management for Canadian scientific satellite projects. Canadian space efforts until new, he pointed out, have re-

Canadian space efforts until now, he pointed out, have resulted in three successful launches out of three manufactured spacecraft.

His company is engaged in building Isis "B", the second in the Isis series of joint U.S.-Canadian satellites designed for probing the lonosphere. It is scheduled for launch late in 1970.

In Tuesday's talks, John Mac-Naughton, director of mechanical products, Spar Aerospace Producis, Ltd., Malton, Ont., unveiled his company's latest development in storable tubular extendible members (Stem) booms. To date over 350 of these devices, in lengths from 11 inches to 850 fet, have been used in various national space programs with up to 10 on a single spacecraft.
COMMUNICATIONS SATELLITE CORPORATION Date 11 Mar 69. J. Whitehead To:

From: Robert E. Button

Per Conversatio

SA

VARIETY

March 5, 1969

Comsat's Button In Line for FCC?

Washington, March 4. Speculation is already swirling on what the Nixon Administration will do when FCChairman Rosel Hyde's term expires June 30, though certainly nothing is firm yet. But a name being checked out as a likely successor is Robert E. Button, 54, director of policy planning for Communications Satellite Corp.

E. Button, 54, director of policy planning for Communications Satellite Corp. Button, at one time account executive for NBC, was director of the Voice of America in 1956-58 under President Eisenhower. Before joining Comsat, he was a U.S. staffer in the North American Treaty Organization. Hyde is a Republican but has reached retirement age, and Nixon Administration sources indicate unhapploess with the FCC, where changes are considered overdue.

Dartmonth 36 MB Brockly, Law 39 HB.

DRAFT January 8, 1968 (Corrected 1/19/68)

The Future of the Communications Satellite Corporation

Mire :

This paper on the future of the Communications Satellite Corporation should be considered in context with "Task 6: The Problems of International Telecommunications," dated December 14, 1967, prepared for the President's Task Force on Telecommunications by the Office of the Director of Telecommunications Management.

The future success of Comsat is of major concern to the U.S. Government, to the Corporation's officers and employees, and to its many stockholders. The success of Comsat is critical to the success of INTELSAT and the achievement of the objectives set forth in the Communications Satellite Act of 1962.

Comsat's Current Situation.

As the early very optimistic assumptions and beliefs concerning communications satellites are being replaced by more detailed economic studies, the conclusion seems inescapable that Comsat, as a viable economic enterprise, is in a precarious situation. Over the past two years, the company's prospects have worsened rather than improved and to a considerable extent this is due to Governmental actions and decisions. 1, 2 The future of Comsat is highly dependent upon the understanding, the initiative and the policy guidance and support of the U.S. Government. Unlike other elements of the telecommunications industry, Comsat is a direct creation of the U.S. Government. It was created by the Congress upon recommendation of the Executive; the President was given major responsibilities for promoting the development of Comsat and the FCC was given authority for more detailed regulation and control of decisions than it has over other carriers.³ Thus, to a most unique extent, the U.S. Government has responsibility for the progress and success of this new communications capability.

2 Decisions concerning the establishment of 30 satellite circuits to serve urgent Government requirements in the Pacific.

3 The Communications Satellite Act of 1962.

¹ The FCC Ground Station Decisions,

Clearly one of the intents of the Congress was to create an environment for the development of a global satellite communications system, as an important part of an improved global communications network, which could grow without undue constraints imposed by other, more conventional, techniques. The evidence indicates that this intent has not been achieved and will not be achieved under present circumstances.

Present Policy Environment.

In the past the Government's interest, understanding and development of national policy concerning telecommunications has been indifferent and inconsistent. Policy has developed principally as a reaction to crisis situations when it appeared unavoidable. Continuous planning to establish a body of consistent policy to promote, encourage and guide the industry is almost entirely lacking. 4, 5, 6, 7 This in drastic contrast to Government policy with regard to air transportation, development of nuclear energy, oil and gas exploration and many other fields.

The Government reacted to the crisis created by threatened foreign control of international radio communications in 1919 by promoting the establishment of the Radio Corporation of America to protect important United States' interests in international communications. It was not long, however, after the creation of RCA and the passage of the Cable Landing Act of 1921, before the Corporation and the Government became preoccupied with the development of domestic broadcasting, and our international telecommunications interests were neglected. In 1945, as a result of the experience in World War II which disclosed the inadequacy of our international commercial telecommunications organization, Mr. Forrestal (then Secretary of the Navy) and Dr. A.A. Berle (then Assistant Secretary of State for Economic Affairs) proposed the consolidation of all United States international telecommunications operations to form a single strong international carrier. This carrier could represent the national interest overseas and provide more effective telecommunications support of the foreign operations of

Federal Communications Bar Journal, Volume XVIII, No. 1, 1963.
Allocation of TV Channels, Report of the Ad Hoc Advisory Committee on Allocations to the Committee on Interstate and Foreign Commerce of the U.S. Senate, March 14, 1958.

6 Satellite Communications, Report by the Military Operations Subcommittee of the Committee on Government Operations of the House, October 1964.

7 Government Use of Satellite Communications -- 1967, 7th Report by the Committee on Government Operations, August 28, 1967.

Government agencies.⁸ This proposal failed for lack of policy continuity and agreement between agencies in the Executive Branch. The FCC embarked on a policy of allowing maximum competition in the provision of international services. This policy continued even after Justice Frankfurter said, in the Supreme Court's majority opinion in 346 U.S. 86 (1953), that it is only in a "blunt, undiscriminating sense that we speak of competition as an ultimate good." Further he said:

"... Indeed, as to the industry before us in this case, there has been serious qualification of competition as the regulating mechanism. The very fact that Congress has seen fit to enter into the comprehensive regulation of communications embodied in the Federal Communications Act of 1934 contradicts the notion that national policy unqualifiedly favors competition in communications. The Act by its terms prohibits competition by those whose entry does not satisfy the 'public interest' standard. In this field, the reason for such restriction undoubtedly lies primarily in the limited availability of international communication facilities, recognized in a series of international conventions. Other considerations may also have applied: Congress may have considered the possible inconvenience to the public of duplicate facilities -- as would more clearly be the case with telephones -- or the possible inadequacy of the demand for international communications to make more than one enterprise economically or socially desirable. Whatever the reasons, they are not for us to weigh; it is for us to recognize that encouragement of competition as such has not been considered the single or controlling reliance for safequarding the public interest."

The Government's preoccupation with competition as a goal in itself rather than a means to an end -- the best service at reasonable rates is demonstrated by the circumstances leading to the merger of the Postal Telegraph Company with Western Union in 1943. In that case the Government acted only after Postal was in such disastrous financial condition that the employees pension fund and its Reconstruction Finance Corporation's loans were threatened with default.⁹

In the passage of the Communications Satellite Act of 1962 and the establishment of Comsat, the Government, in response to intensive

⁸ Study of International Communications, Hearings before a Subcommittee of the Committee on Interstate Commerce, U.S. Senate, 79th Congress, 1st Session Pursuant to S. Res. 187 (78th Congress), March-April 1965.
9 House Report on S-2598, 77th Congress, 2nd Session.

pressures of interests with an exaggerated view of the satellite "gold mine," acted without adequate consideration of the nature and complexity of United States international telecommunications operations. The action seems to have ignored the domestic and international telecommunications lessons learned during World War II. Comsat would be both a "carrier's carrier" and a competitor in providing telecommunications service.

The operations and the success of Comsat are inextricably interwoven with the operations and activities of the U.S. communications carriers originating and handling international traffic. The American Telephone and Telegraph Company presently collects, through its Long Lines System and delivers to the gateway cities, the public message telephone traffic requiring about 85% of the international communications bandwidth. The remaining 15% of the required international communications bandwidth is accounted for by international traffic picked up by Western Union and delivered to the gateway cities, by traffic generated by the international carriers themselves in the gateway cities, and by Government leased lines and other full-time allocated circuits. The current use of Comsat circuits by the other United States carriers is illuminating. Of the half circuits (earth to satellite) in use, AT&T has 226; ITT Worldcom, 6; RCAC, 8; WUI, 14; and Hawaiian Tel, 54. Of the 28 circuits in use by the record carriers, 12-14 are to satisfy Government alternate voice/data (AVD) leases which requested satellite circuits and must be placed with the record carriers under the TAT-4 decision. Thus it can be said without practical exaggeration that Comsat has only one class of customer to which to sell its services. Those customers have an alternative source of supply: submarine cables. One of them (AT&T) has pioneered the cable technology and promoted extensive cable systems throughout the world. Furthermore, under present regulatory policy, AT&T and Hawaiian Tel include their cable channels in their rate bases for earnings purposes, while facilities leased from Comsat can only be considered as an operating expense. 10 Thus, the carriers have strong incentives to favor their use of cable rather than satellite circuits.

¹⁰ In the case of AT&T, it is estimated to be costing about \$2,307,000 more annually to lease its present circuits from Comsat than if it were using its own facilities. The FCC decision to grant to common carriers half ownership in earth stations ameliorated this situation somewhat, but with a corresponding loss to Comsat. If it were not for the extensive utilization of Comsat services by NASA and DOD, the economic situation of Comsat would be even more precarious.

Future Domestic Problems.

Thus, the current situation and future of Comsat (or INTELSAT) cannot be considered except in relation to the total domestic-international telecommunications system. The major difficulties which have been encountered in implementing the spirit and the letter of the Act are due to lack of recognition of the total systems nature of the expanding domestic-international telecommunications complex and the negative incentives in the Act toward economic motivation to U.S. industry to establish a workable system employing communications satellites.

The key issue in the future of Comsat is the struggle for income and earnings, i.e., the battle for markets and rate base to provide a return on its capital structure.¹¹ Income under the present method of regulation of the telecommunications industry is directly related to the "rate base" which is, in effect, the net investment in communications plant necessary (used and useful) to perform the services.

This is one underlying cause of the conflict between the existing communications carriers and Comsat for ownership of the ground stations. The original proposal of the carriers was that each own its own ground station, an obvious economic and operational absurdity. The later FCC decision, under which the carriers have half the investment in ground stations, goes part way in this direction; leaves all of them dissatisfied; creates, in effect, a domestic consortium;¹² seriously weakens the powers of decision of Comsat; partially negates the concept of a chosen instrument for satellite services embodied in the 1962 Act; and yet has not been accompanied by significantly increased use of satellite facilities, except by AT&T.

11 To achieve earliest possible viability, Comsat badly needs to make major inroads into the heavy traffic routes to Western Europe which have been dominated by the cable facilities. On the other hand, Comsat efforts to promote satellite earth stations in South America have been damaging to the already deteriorating position of cable and high frequency radio franchises under which United States companies have been operating in these countries.

12 In the background thinking and discussion which preceded finalization of the 1962 Comsat Act, serious attention was given to the desirability of a carrier joint venture or consortium of carriers to exploit the new satellite technology. Such concepts were rejected by Congress in favor of a chosen instrument which could, without undue constraints, push the promotion of the new technology and afford "competition" to the old. The situation resulting from the decision to grant 50% earth station ownership to the carriers has resulted, in effect, in a sort of joint venture or consortium which is clearly in a position to constrain the growth. As a matter of fact, the way the ground station committee has finally resolved the contention over participation in the ground stations results in each carrier having its own technical facilities in a ground station, thus making them part of its rate base. The effect of this compromise is to substantially increase the cost and degrade service in ground handling of traffic via the communications satellite by quadrupling, in some cases, the equipment and manpower required. This is in contrast to one of the basic purposes of the Communications Satellite Act which was to reduce the cost of communications to the public and to the Government.

In 1964 the gross revenue from U.S. international communications operations was about \$376 million. This revenue was almost equally divided between international telephone services and the telegraph (or record) services. After deducting the payments to foreign carriers, the amounts due Western Union and AT&T for domestic handling of foreign correspondence and the revenue accrued to U.S. carriers from communications both originating and terminating in foreign countries (transit traffic), the gross revenue from handling the strictly international portion of international traffic from or to the United States was about \$170 million. This is the 1964 base for international operations to provide earnings to continue to support the investment in overseas operations of AT&T, the three record carriers and the Communications Satellite Corporation.

Historically, the United States international communications carriers have required about \$2 of investment in plant to generate \$1 of operating revenue, while in the domestic telephone system the ratio is closer to 3 to 1. On the other hand, initial experience with communications satellites indicates only about \$1 of investment for \$1 of income. If we consider the total of international traffic as generating, in round figures, \$200 million of annual operating revenue in 1964-65 and divide the traffic equally between satellite and non-satellite systems, this means about \$100 million in traffic to be handled by satellites, but the only source of income from this for Comsat is ownership of one-half the ground stations and a percentage on the investments in INTELSAT (14% before taxes). A futher, but minor point, is that the income from traffic handled by U.S. carriers between foreign destinations (transit traffic) will be largely eliminated by the use of communications satellites.

Comsat estimates that by the early 1970's its rate base will be approximately \$100 million and that its current income from operations will be of the same order. The FCC, in a recent decision, has restricted AT&T to approximately 7-1/2% net earnings on rate base. On the other hand, Comsat has contended that it is entitled to a much higher rate of return because of the nature of the enterprise. However, even a 14% net return on \$100 million rate base is not adequate to pay substantial dividends on stock with a market value of approximately \$500 million. ¹³ The higher return can be disadvantageous because it handicaps satellites in the economic competition with cables.

Future International Problems.

Most of the problems of U.S. international telecommunications are traceable to the United States policy of trying to maintain a minute island of regulated-contrived-competitive private enterprise in a great sea of telecommunications operations carried on by regulated franchised public utility carriers, Government-sponsored chosen instrument corporations, or Government departments. ¹⁴

There is presently between \$90 and \$100 billion invested in world telecommunications facilities, mostly in telephone plant (over 220 million telephones). Nearly half of this plant is in the United States. This plant has developed over the last 100 years with more than ninetenths of the expansion since the initiation of intercontinental telephone service in 1927.

The transmission systems that provide the intercontinental trunks are a very minor part of the integrated system of world telecommunications. The United States carriers' investment in transoceanic facilities represents only about 1% of their total investment. The problems of this small international transmission plant have little impact on the evolution and management of the large individual country telecommunications systems that require the bulk of the investment to expand world communications.

13 There is, at present, no discernable rational business justification for the current inflated market value of Comsat stock. The only believable reason is an implicit faith that the U.S. Government is committed to the profitable success of the Corporation. This inflated stock value places undue pressure on Comsat decision-making, and the faith in Government support introduces extraordinary pressures on the Government and the danger of creating a credibility gap. One of the largest carrier owners of stock has already reduced its stock ownership by 22.35% and achieved a capital gain (on the sale) of about \$11,300,000. This single sale permitted this carrier to recover over 75% of its original investment in the stock and it still retains over 77% of its stock.

14 Study of International Telecommunications Policies, Technology and Economics, prepared for the Intragovernmental Committee on International Telecommunications by Stanford Research Institute, May 1966. Regardless of the size and complexity of the total system, any given communications operation, or any particular service, is conducted bilaterally by the two organizations on the ends of a circuit. In international operations these organizations are either corporations or government ministries who are actual or de facto agents of two sovereign nations. These two nations have within their exclusive national control 85% to 100% of the communications plant and facilities necessary to the provision of any particular international telecommunications service. The domestic terminal equipment, switching, control, and local transmission (the so-called tails of the communications circuit) are the principal factors determining the quality, reliability, and responsiveness of a telecommunications operation, once the quality of the international service is raised to the high standard of transmission excellence avai lable in telephone cables and communications satellites.

The necessity for bilateral agreement between the representatives of two independent sovereign nations to interchange communications over any given path and the requirement for multinational agreement to establish a communications satellite space segment was not adequately recognized in the background of the Communications Satellite Act, and still is not adequately understood.

Failure to recognize the total systems nature of world telecommunications and the difficulties of participation in this international system by the fragmented structure of the United States operations has resulted in many problems in implementing the Communications Satellite Act. "The Dilemma of Communications Satellites," Enclosure 1 to the Task #6 paper, discusses this problem in greater detail.

Although international communications facilities do represent only about 1% of the foregoing multibillion dollar investment, they are still the most substantial and formidable immediate hurdle to U.S. ambitions to establish a global communications satellite system as part of this international telecommunications complex. But it should be clearly recognized that the growth, service and cost potentials will also be influenced by the growth of domestic facilities within the nations involved. This factor will be a recognizable bottleneck in the developing nations in the near future and is evident even in the highly developed European nations. U.S. future growth plans for Comsat and INTELSAT should take this into account.

The fact that the bulk of the investment in telecommunications facilities is in the terrestrial plant associated with the domestic telephone systems of each country and that there is already a small, but well integrated, global system operating via cables and HF radio, poses real obstacles to the introduction of a new transmission system, such as satellites. If it is not intended that Comsat get into the business (which it clearly could not do economically) of actually providing customer-to-customer services on the ground, it has no choice but to sell its transmission services to the established carriers in the United States and overseas. Further, as communications satellite technology has evolved, the investment required in the space segment, including tracking, command and control, to provide substantial international capacity is small compared with the investment in the earth stations necessary to an effective global system. Again, these earth stations usually are owned by the agencies operating the terrestrial systems.

Looked at from the standpoint of the foreign correspondent of a U.S. communications carrier in a newly developing country, the situation also looks quite grim. Commitments have been made to build some 50 ground stations around the world and 60 nations have adhered to the INTELSAT Agreements, making some financial contribution toward the capital of the organization. A newly developing nation, which has had a few high frequency radio circuits to the United States, Britain, or France, each circuit costing initially a few tens of thousands of dollars in local plant construction cost and a few thousand dollars per year (in local currency) to operate, will now have circuits through a ground station which, although infinitely better, will cost \$6 million to construct and involve an annual fixed charge close to \$2 million. If 10 circuits are involved initially, the annual cost per circuit now jumps to \$200 thousand per circuit. In addition, the country has \$6 million tied up in a ground station which funds cannot be used to expand the local infrastructure of telephone exchanges, outside plant, and telephones so necessary to the economic advancement of the country.

In the present environment and under present policy, Comsat (and INTELSAT) cannot succeed without much more aggressive implementation of the responsibilities placed on the Government by the Communications Satellite Act of 1962. A large volume of traffic on the heavy routes between the developed countries is required to keep the space segment costs down on satellite service to and between the newly developing countries. Eventually, economic support through AID and other channels may be required to share the initially excessive costs of ground stations and the build up of supporting domestic infrastructures in the developing countries. The Government will need to favor the dependence on satellite circuits by slowing the construction of additional telephone cables and continue to use its influence with foreign countries to promote the expansion of communications satellite service.

It has been contended that Comsat participation in the provision of long haul domestic transmission services would provide a lucrative source of revenue to satisfy its need for income. Unfortunately, these predictions also suffer from a lack of understanding of the fundamental technical, operational and economic realities of the domestic telecommunications system. During the last several decades, the cost of providing a mile of long haul telephone transmission capacity in microwave or coaxial cable systems has been reduced by two orders of magnitude from \$200 - \$300 to \$2 or \$3. As a consequence, the portion of the cost of the average, long distance telephone call which is attributable to the long distance transmission is less than 10% of the total cost. Substantial further reductions in transmission cost are an immediate prospect, and when requirements grow to the point that microwave wave guides or laser pipes are required, further major reductions in transmission costs are certain to be achieved. These can provide bandwidths and costs per circuit mile which present state of the art satellites (in the present frequency bands) will not be able to meet and which will challenge the economic potentials of later generations of satellite systems designed for optimum cost effectiveness. These aspects of domestic services are discussed more fully under Tab A.

Summary.

The "authorized user" question, the ownership of earth stations, the question of who includes what in their rate bases, the problems of regulation of Comsat and the relationship of such regulation to INTELSAT, the U.S. influence on procurement policies of Comsat acting as an agent of INTELSAT, are all issues which derive directly from our basic lack of recognition of the total nature of domestic-international telecommunications as a single technical, operational and economic system. At the same time, lack of cohesive, understandable and believable United States national policy concerning international telecommunications are irritants which can be, and are, magnified by dissident nations to issues which they attribute to United States' failure to recognize telecommunications as an international enterprise, not subject to traditional U.S. regulatory and economic practices in which they have little confidence.

The future of Comsat (and of INTELSAT) will depend upon our ability to adapt our thinking to the realities and needs of a rapidly changing world. Are we going to continue, in an era of ICBM's, supersonic transports and global United States commitments, to rely on Governmental telecommunications philosophy and policy evolved in the environment of World War I and the 1920's. Can our telecommunications survive with ad hoc, unpredictable policy decisions influenced by traditional patterns of fears, beliefs and antitrust practices; decisions which are responsive to the weighing of current variable pressures, but lack adequate evaluation in depth of the social, technological, systems engineering and economic factors which are vital to the protection of our national interest.

Conclusions.

There are really only two alternatives with reasonable hope of assuring the future of United States ambitions to promote a global communications satellite system.

The first alternative is an aggressive program to promote the merger of all international telecommunications facilities into what amounts to a chosen instrument U.S. overseas telecommunications corporation. This would be a carrier's carrier handling all transmission between the large U.S. continental system and the comparable systems of countries around the world. It would be the principal U.S. spokesman for operational international telecommunications matters (as Comsat now is in satellite matters). It would build and operate transmission facilities to meet the operational, technical and economic requirements of any particular situation; would work with the correspondents overseas to promote the most efficient system; and would not have to favor satellites or cables for political or policy reasons. It would give the United States a voice in international telecommunications commensurate with its contribution to international traffic, its technological capabilities and its economic stake in world communications. Such a corporation would not be wedded to a single technology subject to obsolescence or isolation from other technical systems. It would require, while at the same time providing for, more effective Government regulation than has been achieved in the past.

A second alternative, if it is politically unfeasible to propose a consolidation at this time and if preservation of "competition", regardless of the effect upon service convenience, efficiency and economy is elected, would be to free Comsat of its present restrictions. The international communications carriers should be structured so as to be truly competitive, with Comsat having the right to serve all customers. Interconnection with AT&T Long Lines should be directed. The carrier members of the Comsat Board and carrier ownership of any portion of Comsat should be eliminated. Comsat should be given complete ownership of the ground stations, the Government should withhold authorization for any further international telephone cable construction for some time, and the concept of a composite tariff for overseas services should be abandoned. Such an arrangement would give Comsat a chance of economic viability, but could well force the record carriers into bankruptcy within a few years; would result in a running battle with AT&T over the use of cable versus satellite channels for handling international message telephone traffic; and could cause the United States to be the victim of foreign correspondent play-off of one carrier against another. It is doubtful that the FCC has the authority to effect many of the foregoing changes which would be essential to achieving this alternative.

Considering the intrinsic nature of telecommunications, it appears most unlikely that this second alternative would produce real economies or reap the benefits of competition which are achieved in many free market areas. It would, however, to a considerable extent, by unshackling the competitive process, provide an opportunity to observe more realistically the net effects for good or bad of competition in this field. A case can be made that it would lead to Government ownership in the foreseeable future.* It is a solution which we cannot recommend, though for the short haul it might improve Comsat's future. A substantial increase in the Government's managerial and regulatory capabilities would be essential.

Even though a proposal for firm action on the part of the Congress to promote a merger of all international facilities may elicit adverse reaction from some or all of the communications carriers other than Comsat, such a reaction would be mild, indeed, compared with that which would result from an aggressive program to promote unrestricted competition between international communications companies and modes of transmission.

On balance, the first alternative appears more readily achievable and much more effective in bringing about an orderly United States international telecommunications structure, while, at the same time, correcting current conditions which place in serious doubt the time it will take for Comsat to achieve sound economic viability.

* General Sarnoff has expressed a strong prediction of this result.

DRAFT January 16, 1968

Are Domestic Satellites an Economic Lifesaver for Comsat?

The opinion has been expressed in some quarters, including within the Comsat organization itself, that provision of domestic communications satellite services presents equal or better opportunities for earnings and viability than does the international satellite business, that Comsat would have an opportunity to invest its excess capital and develop a volume of business large enough to achieve a viable, economic enterprise.

There appears to be no question that the initiation of domestic satellite service would afford Comsat a way to start investing its excess capital, but each of the other statements is subject to serious question and much reasonable doubt.

It is the purpose of this paper, based on the data and information currently available, to examine the potential results of such actions and to arrive at some, at least interim, answers to these questions. Also considered is the possibility that even should the economic factors be unfavorable, the potential exists for shoring up Comsat with a concealed subsidy, the cost of which would be passed along to the ultimate users in the tariff structure.

Impact of Technology on Services.

With the technology likely to be available within the next four years and utilizing the present frequency bands with their constraints on systems design, satellite facilities do not appear to be economically competitive with terrestrial facilities to provide the same services in the domestic environment. About 85 percent of these facilities are presently being utilized for public message telephone purposes for which the AT&T Company would be almost the sole customer for the circuits. Approximately 15 percent of the service requirements are divided between private line services of various types and some message telegraph service distributed between TWX, Telex, and the public message telegram. The AT&T Company provides over half of the private line service. Thus, Western Union, the only other significant customer at the present time, provides about 5 percent of a market of which 95 percent comprise AT&T requirements. It is reasonable to anticipate that the predominant customer would be setting the terms and conditions of sale or lease unless the Government continuously supervised all details of the arrangements, including which circuits are to be by satellite and which by alternate means. Absent Government control, the customer would fix all details of contractual arrangements and charges. Further, it is most unlikely that the domestic telephone carriers would willingly utilize facilities leased from Comsat when they could build their own rate base by investment in terrestrial facilities.

It can be argued that this situation could be corrected by making Comsat a fully authorized common carrier dealing directly with the users of private lines. Examination of this possibility does not provide reasonable economic expectations. Limited by economic factors to the relatively small number of longer haul circuits would reduce the potential business. Furthermore, Comsat would be almost fully dependent upon Bell System and independent companies for the facilities to provide the link from the satellite earth terminal to the users premises. Duplication by Comsat of local facilities to users premises could not develop sufficient economies of scale to render this service economically competitive in any way with already established and partially amortized facilities of the local companies. In fact, it is very doubtful if State or local governing bodies would authorize Comsat to build facilities duplicating those of the local telephone company. Comsat would not be able to develop enough service density in a given area even to make economical the provision of adequate test board facilities and skilled, specialized maintenance personnel required to meet present standards of service.

This situation might be somewhat ameliorated if the distribution of the circuits among the uses could be expected to change radically with the development of data services and other narrow and wide band services. Such changes seem most unlikely to occur. These services, in the interest of economy, will, like the telephone service, likely be wanted on a time-charged, on-demand basis capable of being switched to provide flexibility and maximum fill. The economies of scale of this technology strongly favor a single switching, control and test center for all types of service with multiple switching networks, where required, and operated by a single common control (central computer). It seems inevitable that the growth of the new services will maintain or even increase the proportion of long haul intercity circuit capacity that is associated with the switched services.

Television.

Another possible market is that of providing the network distribution for television broadcasting. This total market amounts to approximately \$60 million annual revenue to the AT&T Company, plus an unknown amount that is handled by private microwave provided by the broadcasters themselves. Presumably this latter part would not be penetrated by satellites unless rates could be considerably lower than the present common carrier rates for these facilities; that does not appear likely at this time. With the present frequency allocations which must be shared by satellites and terrestrial microwave systems, it is easier and cheaper to serve most of the northeastern section of the country by terrestrial facilities than by satellite, so that part of the market is doubtful. Over the longer distances where satellites could conceivably compete effectively on an economic basis, Comsat would be dependent upon the Bell System and independent telephone companies for the local distribution and operation of test board and switching facilities, since these, which already exist for telephone nessage services, can be used at much lower cost than the same job could be done separately. Hence, without artificial constraints which increase costs, it is unlikely that this part of the market could be penetrated effectively.

Economics of Satellite Facilities.

Until the frequency bandwidths available for satellites are increased by several times the present allocations and frequency sharing avoided, the circuits obtained cannot compete effectively with the costs of the same circuits obtained from terrestrial facilities with new lower cost incremental construction on heavy routes. With wider bands, freedom from the constraints of frequency sharing, and lower cost optimized systems design, it seems likely that satellites can compete effectively on a cost basis with present terrestrial facilities, particularly if the allocations are in the higher frequencies where the very narrow beam earth terminal antennas can be constructed more cheaply. Even then satellites may be cheaper for only the longer haul circuits, probably in the order of 1000 miles or more.

Nature of the Domestic Network.

The combined network of long and short haul circuits making up the "telephone" transmission network of the United States has developed to the point where today there are almost 400 "nodes" interconnected by broadband transmission routes. (A node, as the term is used here, is a point at which three or more transmission routes come together, and where equipment is or can be provided for combining or separating channels to any stage desired, and the circuits, groups, supergroups, or mastergroups, interconnected between or among the different routes.) The increases in capacity of this network as the demand grows are never spread evenly over the network. Thus each year, as the additions are planned, complex analyses are made to determine how capacity may be added or additional routes provided between pairs of existing nodes, or by establishing new nodes, in the most economical way to accomplish the estimated need for additional trunks between toll centers. There is no straightforward analytical method for carrying out these studies so they must be done by a series of iterations where costs are computed over the entire network or a major part thereof for different patterns of additions, each of which would accomplish the desired increase in trunks, and the selection made of the least cost solution.

The introduction of satellites into this process further complicates it. The actual process used is described in a paper from the report of the Point-to-Point Communications Panel of the Woods Hole Study conducted by the National Academy of Sciences for NASA during the summer of 1967, Tab B. The methods described determine the location of the earth terminals and the number of trunks between earth terminals that produce economic optimization of the choice between satellite and terrestrial circuits. It is probably not possible for this process of optimization to be carried out if it were divided between two separate organizations. It would be even more difficult under the circumstances being considered where the purchasers or users of the facility, the AT&T Company, and the independent telephone companies are allowed to earn a return for their stockholders when they use terrestrial facilities in which they have an investment, but are allowed no earnings on satellite facilities procured from Comsat. The Government would be faced with the necessity of participating in this operation to a major extent which would require a large force of highly skilled systems planners to exercise a decision function as to what increments should be satellite and which should be terrestrial.

Management of the Network.

As described in the report on "Trends in Telecommunications Technology," AT&T Long Lines is well along in the process of introducing "facilities switching" into the network. This system provides the ability to switch

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the wideband facilities on a group, supergroup, or mastergroup basis at many of the nodes so that facilities can be rearranged to better handle shifts in the traffic pattern or to bridge around faults in the network due to facility failure, natural disaster, or hostile action. It is anticipated that this capability will gradually become almost completely automated to produce the characteristics of a dynamic self-adjusting, self-healing network. To administer the arrangement it is essential that the Long Lines Department have complete control of the switching and circuit allocation at all the nodes. Thus, it probably would be necessary for Long Lines to either operate the satellite earth terminals or provide some duplicate personnel if Comsat did the operating.

The needs might be accomplished by shared ownership of the earth terminals with AT&T designated to do the operating but any such sharing of the ownership would tend to reduce the amount of investment given to Comsat and thus subvert the objective of giving it a viable going business whatever it did to other objectives.

As mentioned previously, the Government could undertake, through an early decision to introduce satellites to domestic communications, to subsidize Comsat to the extent found necessary to make it viable and to undertake its future support regardless of the threat of other technologies which could potentially provide better service at lower cost.

The lack of reliable, in-depth economic studies divorced from corporate tactics and interests makes it extremely difficult, if not impossible, at the present time to determine the extent of subsidy liabilities to which the Government might be committing the industry and the public over the long haul.

In addressing the initial question, "Are domestic satellites an economic lifesaver for Comsat," we are forced to conclude at the present time that unless the uncertainties and unfavorable economic potentials are underwritten by the rest of the telecommunications industry under Government direction, satisfactory assurances of a domestic system bailing out Comsat are lacking.

Much more favorable competitive conditions for a domestic system could be achieved with an optimized system specifically designed for domestic purposes in a higher frequency band allocated exclusively to satellite communication purposes. Substantial development cost would be involved in producing such a system, but the potentials for achieving a large, substantial, and profitable domestic satellite system seem large enough to warrant the development effort. Many of the other obstacles and complexities described above would still exist, but if really major cost reductions could be assured, the other problems could possibly be manageable. However, such a system is more than five years in the future due to the time required to develop components, obtain data and get ITU agreement on frequency allocations.

The burden of this review is not to say that a properly designed pilot program (in present frequency bands) is not essential to orderly progress toward the use of satellites for domestic purposes or would not contribute mightily to the resolution of many of the uncertainties set forth herein.



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AUDIO ENGINEERING SOCIETY 37TH ANNUAL CONVENTION

Remarks by FRANK STANTON, President Columbia Broadcasting System, Inc. New York, October 15, 1969

As we enter the 1970s, the U.S. broadcasting industry is within reach of a breakthrough that has already become a household phrase -but so far has had only limited impact on 200 million Americans. I refer, of course, to satellite communications.

When man set foot upon the moon, satellite communications enabled 600 million men, women and children around the world -- one-fifth of the world's population -- to eyewitness this epic and electrifying event as it took place almost a quarter of a million miles away in outer space.

When Jean-Claude Killy raced down the slopes of the French Alps during the last Winter Olympics, when President Nixon visited Pope Paul at the Vatican last spring, when the Prince of Wales was invested at ancient Carnarvon Castle last summer, millions of Americans sat glued to their television sets watching these events as they unfolded before their eyes. Satellite communications made this live coverage possible.

Since 1965, United States-designed commercial satellites have been relaying television and radio broadcasts, telephone calls, telegraph messages, facsimile and computer data across the Atlantic, the Pacific and the Indian Oceans. A single satellite can provide almost as many circuits as are now available for telephone and telegraph transmissions from the United States to the rest of the world by undersea cable and high-frequency radio.

Satellites able to provide many times the present capacity of these other means of communication have already been designed.

Yet in spite of the successful introduction of satellites to international and space communications, the great benefits of this new technology have so far been denied to the American public for domestic use. The prime loser has been educational television with its nearly 200 stations. These stations, which reap such great benefits from joining forces in educational network operations, have been seriously limited in their use of nationwide interconnections because of the shortage of lines and because of the costs. They have been restricted in the degree to which they can rely on centrally produced programs, whose content and quality ought to be seen on a nationwide basis.

Since Syncom II went into orbit in 1963, we have known that a communications satellite could serve domestic as well as international communications. For at least five years we have known that for both technical and economic reasons, one of the most fruitful immediate applications of satellite technology would be domestic television. Satellites would substantially reduce the cost of television transmission, increase its range and improve its coverage and quality.

In so doing, satellites would greatly enlarge the capability of the networks, commercial as well as educational, to serve their affiliated stations -- particularly with news and public affairs broadcasts and special events which cry out for live simultaneous coverage -- and

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they would greatly augment the usefulness of networks in national emergencies and for civil defense.

The domestic satellite question has been under intensive examination for years. It has been almost five years since ABC's dramatic proposal of a system which, besides serving its own network needs, would also provide facilities for a truly nationwide educational television network.

By the following summer, not only had ABC broadened its proposal, but others had suggested constructive approaches. NBC presented impressive studies -- including the design of a model system -- deriving from the comprehensive electronics expertise of RCA. The Ford Foundation's imaginative plan stimulated lively discussion, and for the first time focused the national attention on educational television. Comsat and AT&T also offered plans for domestic satellite systems. Hughes Aircraft Company provided much of the technical foundation for the other proposals.

Painstaking technical work and great ingenuity went into the many proposals of 1965 and 1966. But to what avail? Now we are into the fifth year of discussion, analysis -- and bureaucratic inaction.

What a national waste.

For not only are there no insurmountable technical or economic problems, but the three main users -- ABC, NBC and CBS -- are in clear consensus in favor of a single purpose domestic satellite system constructed and operated by private industry. Broadcasters want to cross the threshold into the era of satellite communications and cross it now.

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Our news operations, our creators of entertainment programming, our affiliates, our stockholders -- but most of all, our audiences -all have a common interest in development of the best possible broadcast system that technology can provide. Moreover, such a system need not cost the government or the taxpayer a cent -- either in capital outlay or in operating costs.

What is needed is a meaningful move to turn consensus into concerted action. To that end, I propose that ABC, NBC and CBS join in forming immediately a consortium to build and operate a domestic satellite system, with the necessary ground stations, capable of transmitting television and radio programming to all 50 states and offshore islands. I further propose that the Corporation for Public Broadcasting be invited to join this consortium as a fourth member with a voice equal to that of each of the commercial companies in directing the consortium, and that the channels of the system be made available to the Corporation for Public Broadcasting at no charge.

We estimate that the cost of putting the satellites in orbit and building the ground segments of the system would be something on the order of \$100 million, and we propose that ABC, NBC and CBS share equally in the cost. If Washington could only be moved to prompt approval, the system could be in operation as early as 1972.

A recent 44 percent jump in the charge for AT&T's domestic transmission over its land lines and microwave systems makes an early start on a satellite system imperative. We have already waited many years for the Federal government to formulate its position on a domestic system. And we are still waiting. But AT&T has not been waiting. AT&T has increased its annual charges for network television inter-

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connection by \$20 million -- bringing its total yearly charges to the three nationwide television networks to \$65 million.

We all recognize that AT&T has serious problems, including rising costs. But for whatever the reason, because of the costs levied on the networks we lease AT&T lines only for 14 to 18 hours a day. With a satellite system at our disposal, we could afford to transmit around the clock. We could provide live network broadcasting to Alaska, Hawaii, Puerto Rico and the Virgin Islands, which now have to settle for delayed programming.

How soon we shall be able to do all these things depends on the Federal government's decision with respect to the ownership of domestic satellites. We are very much encouraged by the fact that President Nixon has taken a special interest in the subject. In August, as you know, he set up a White House panel under Clay Whitehead to review the issues and invite comment and suggestions.

And high time. By 1972, our neighbors in Canada expect to have in operation a satellite system which will beam telephone, television and other communication services to all parts of that vast country. On the opposite side of the globe, a satellite orbiting 22,300 miles above the Indian Ocean will beam educational television programs to relatively inexpensive receiving stations in 5000 villages in India.

At present, India has virtually no television. American space technology will, therefore, enormously aid her efforts to instruct her huge population in the essentials of survival -- agriculture and population control, for example -- and to create a sense of national purpose among diverse and isolated communities.

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Japan, Australia, Brazil and Pakistan are busy with plans for their own satellites. In Europe, several organizations are studying the possibility of regional European satellite systems for telephone and television service, and one of them could be operational by 1972. Russia already has an imperfect domestic communications satellite system, although it does not use stationary satellites.

Is it not ironic that the United States, which pioneered in space communications, is so slow in bringing the benefits of satellite technology to its own people? A rhetorical question and one which has been answered by rhetoric too long.

But the impasse can be broken. The nation can and should adopt a policy that will permit large capacity users of satellite communications to have a realistic choice of systems, each one designed for specific needs.

The consortium I am urging tonight provides one such choice -and in an application for which satellites are ideally suited. All we need is the go-ahead. It is in the public interest that we get it.

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