May 2, 1969

MEMORANDUM FOR GENERAL O'CONNELL

Could you please arrange to have someone brief me for about a half an hour on our emergency civilian communications, to include systems in being, responsibilities, and in particular the role of the FCC vis-a-vis OEP.

Clay T. Whitehead
Staff Assistant

CTWhitehead:ed

DTM

October 23, 1969

MEMORANDUM FOR TOM WHITEHEAD

On the draft 10/15/69 Responsibilities of the Office of Telecommunications Policy, the important function of discharging the war emergency responsibilities of the President seems not to be developed. This responsibility conveyed upon ~~him by~~ the President by the Communications Act is really basic to his management of the communications activities within the executive branch and their interaction with the private sector whose telecommunications facilities were and are considered to be a national resource available to the President in time of war or emergency. Therefore, I think that this war emergency problem should be covered very adequately and in considerable detail since it is really the basis for his authorities over the spectrum and over all of our communications, both government and private in time of war or emergency. Also, on page 2, I would suggest changing the name and functions of the Radio Resources Management Agency in the Department of Commerce to Radio Resources Research Agency in the Department of Commerce and ???? add in during phase 1 of this action?? place the high rank in the Department of Commerce. I have had much experience with the Department of Commerce group and am completely certain that they do not have the capabilities for handling this at the present time or in the short-term future. I believe that it would diminish the confidence of the private sector and the Commission and other government departments to do this until there was a real assurance of existence of the capability to handle it. Even then, the wisdom of such a decision is questionable because the decision making authority (the OTP) would be dependent in his decision making role on the advice furnished by the Radio Resources Management Agency. On the other hand, the research capabilities of the Department of Commerce should be utilized and expanded under guidance provided to it by both the OTP and the FCC. If organized as indicated on page 2, I am sure that the OTP would have to constitute a contract agency reporting to him to review the activities and recommendations of the so-called Radio Resources Management Agency. Before taking such a step as is proposed, I would strongly recommend that you consult with experienced people

in the private sector who are highly knowledgeable in frequency management affairs to get their evaluation of the capabilities of the Department of Commerce to take on this function. My recommendation would be to give them increased resources and guidance in the performance of programs designated by the responsible authorities, namely, the OTP and the FCC, but that "management" be eliminated from their charter. Further, on page 2, under the proposed qualifications of the Director, I would suggest that the national security requirements, actions, conflicts, and priorities form the largest share of the problems of the executive branch internally and in procurement interactions with industry. Hence, I think the priority for experience in this field should be high.

(Suggested you see the marks on the side of page 2)

The growing influence of the executive branch interacting with the FCC has its firmest power base in this area. Further, executive branch overall policy influence in FCC areas is important but will need to be based on demonstrated competence and knowledge and it is very apt to be extremely difficult to establish this influence by fiat, considering the present statute.

The paper entitled Recommendation and in the paper entitled Responsibilities of the Office of Telecommunications Policy the subject of the National Communications System is not dealt with so far as I can see. In view of the GAO study, I think that the policy direction of the NCS should be specifically covered and this ties in also with the President's responsibilities for most effective utilization of the total telecommunications resources in time of war or national emergency. I would like to have more time to discuss at greater length the Department of Commerce problem in its relation to frequency management and the difficulties and disadvantages of creating a Radio Resources Management Agency in that department. I believe this would be a retrogressive step and would be almost universally recognized as such by both the government and industry frequency community. Again, my recommendation that you consult other members of this community before taking final action of this nature. Still, I would like to make it clear that the resources which the Department of Commerce has should be reoriented, given new direction, and

brought more closely into the picture of our present and future problems. This can be done without creating a management authority in that department which would tend toward the establishment of a trichotomy of frequency management rather than the dichotomy which now exists. As a final point in this connection, I would say that creation of this management function in the Department of Commerce would significantly impair the confidence of knowledgeable agencies in the potential effectiveness of the overall arrangements which are proposed. I have covered larger areas which I think are missing which I think are apt to seriously weaken the effectiveness of the future organizational program. I would not like you to think, however, that I fail to recognize the many improvements which are incorporated in both papers. I appreciate the opportunity of reading these and will maintain complete discretion on contents. I am also available for further discussion over the telephone (305) 391-5620 or by correspondence. Naturally, having lived and struggled with this for five years, I cannot divorce myself from very great interest in seeing the best possible solution to the problem, so be assured of my willingness to devote further time to discussing it with you, if you so desire.

I leave the two papers with you, but I'd like to study them some time and I'll give them some more constructive thoughts.

General James O'Connell
1701 Sabal Palm Drive
Boca Raton, Florida 33432

Attachments

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

November 5, 1969

MEMORANDUM FOR MR. WHITEHEAD

FROM: Charlie Joyce

SUBJECT: Comments on Mr. O'Connell's Comments of October 23

1. As I mentioned to you on the phone, the title, "Radio Resources Management Agency," appears to suggest to Mr. O'Connell that the whole frequency management job would be put in the Department of Commerce. That is not what we intended, and I again suggest some such name as Electrospace Research and Engineering Agency.

2. The current capabilities of the Commerce Department to do the frequency management job are not relevant because the proposal is to move ODTM personnel to the Commerce Department as a nucleus for this function.

3. We propose to deal with the NCS by an appropriate study. O'Connell does not seem to have noted this.

4. The O'Connell paper talks about emergency responsibilities as if they were the basis for all of the President's influence over telecommunications. It should be noted that the President's authority to assign spectrum to government users is not based on any emergency power concept. The paper's third sentence comes closest to the truth: "... this war emergency problem ... is really the basis for his authorities ... in time of war or emergency."

5. Attached is a discussion of the emergency preparedness area. I would appreciate it if you would keep it for your use only right now. I am going to try to do a couple more papers like this in other functional areas.

Also attached is a revision of the Recommendations and Responsibilities papers to include national security and emergency preparedness factors.

Attachments

Emergency Preparedness for Telecommunications

Emergency preparedness responsibilities are generally vested in the Office of Emergency Preparedness. In many areas (e.g., labor, transportation), planning and program responsibilities have been redelegated to a Cabinet Department. In telecommunications, the planning and program responsibilities have been assigned to the DTM within OEP, though certain functions have been delegated by the President to the FCC and the GSA by Executive Order.

The current philosophy of emergency preparedness for telecommunications is that:

a) adequate communications must survive and function throughout any emergency including all out nuclear attack, and

b) the surviving resources must be capable of being allocated by central authority to meet the highest priority needs after an attack, including governmental needs at all levels as well as private needs.

The principal means taken to achieve these objectives have been:

1. To encourage the telephone company to harden the telephone system, bury facilities, route facilities around cities, and install a complex of operations control centers, to make the telephone network resistant to nuclear attack.

2. To attempt the integration of all national communications facilities, public and private, into a single system to maximize the resources available to the government for use in an emergency.

3. To set up systems for the restoration of service and allocation of facilities in accordance with national priorities.

The principal problems in this area are:

1. It is not at all clear that terrestrial communications facilities can be made to survive a nuclear attack at any reasonable cost.

2. Problem 1 notwithstanding, at least 175 million dollars has been spent in the last 10 years to increase the survivability of national communications resources.

3. The costs of this survivability are largely hidden from view -- to a great extent they are passed on to the customers of the telephone companies.

4. The agency which defines the measures to be taken does not have to budget for or justify the costs of the program.

5. The objective of survivability has dominated the concern of agencies responsible for national telecommunications planning and coordination for almost ten years, and has provided an excuse for a degree of centralization which seems otherwise unnecessary and undesirable.

This background raises the following questions:

1. How can telecommunications preparedness postures be evaluated in terms of their relative effectiveness and costs, so that a reasonable preparedness objective can be established?

2. If a new Office of Telecommunication Policy is established in the Executive Office of the President, but outside of the Office of Emergency Preparedness, where should the responsibilities for telecommunications preparedness be placed?

3. What impact would a change in preparedness objectives or policies have on the need for, or objectives of, the National Communications System?

There is ample precedent for delegating preparedness responsibilities to agencies other than OEP, provided OEP retains overall policy direction and a few people to monitor the area. Further, the technical studies and industry liaison involved can best be done by the

organization with the substantive charter. The only possible reason for not giving the emergency preparedness responsibility to the new policy office would be to discourage the continuation of past policies and to reduce the likelihood that the new office would be unduly influenced by considerations of survivability. However, Presidential guidance to the new office, coupled with the effect of moving it out of OEP, should go a long way toward putting preparedness considerations in proper perspective. The proposed study of the NCS would provide another opportunity to adjust priorities.

A review of alternative preparedness postures might well indicate that:

a) further steps to increase the survivability of domestic facilities are not warranted, and

b) the common-user telephone networks of the federal government provide an adequate means of organizing and using surviving communications facilities to meet executive branch needs.

If these conclusions were validated, there would be little need for a high degree of centralization of all executive branch telecommunications facilities. This situation would clearly affect the objectives and organization of the NCS.

Conclusions

1. A new Office of Telecommunications Policy should be responsible for telecommunications emergency preparedness, subject to overall policy guidance from the Director, OEP. The OEP would require a few people within its own staff to provide an interface and monitoring capability.

2. The proposed review of the NCS should include an analysis of feasible alternative telecommunications preparedness postures and an evaluation of the impact of each posture on NCS objectives, structure and organization.

OTP Budget

September 22, 1970

MEMORANDUM FOR

Mr. Charles C. Joyce, Jr.
National Security Council

I would appreciate it if you would undertake the following tasks for me:

1. An analysis of policy alternatives with respect to the future role of satellites and submarine cables for international communications.

2. A review of U. S. emergency preparedness policies, procedures and facilities in the telecommunications area.

The purpose of these activities should be to develop the issues and information necessary for me to decide what OTP activities should be in these areas over the near term.

Please draw upon the staff of this Office to assist you as needed.

Clay T. Whitehead
Director

cc: Mr. Whitehead

CJoyce/Whitehead:jm

O.P

Nov. 18, 1970

MEMORANDUM FOR CHARLES JOYCE, JR.

I am concerned with the lack of structure for the emergency role of this office, and of the apparent philosophy that this office will only get involved when problems cannot be resolved at a lower level. This kind of "management by exception" may be suitable for normal operations, but in emergencies it tends to result in the higher levels being informed of the problem only when it has gotten completely out of hand. I would like to avoid that by getting involved in the relevant operational activities prior to emergencies, and by having a monitoring capability so that I will become aware of potential problems well in advance of having to act.

I would like to establish a clearly defined monitoring capability within the office. This capability should function during all normal duty hours, and arrangements should be made for continuous operation whenever I so direct.

Please see that a detailed concept for this capability is developed for my review as soon as possible. The concept should include: information requirements, display techniques, reporting relationships and procedures, communications, and staff procedures.

The capability should be applicable to both natural disasters and war, and should provide on a routine basis information about communications system status, performance, and the results of tests of telecommunications systems and procedures.

Clay T. Whitehead

cc: Dr. Mansur
Capt. Babcock
Mr. Ward
DTP - 2 ✓
Joyce Subj File
" Chron File

CCJoyce:hmy
11-18-70

Telecom

June 9, 1970

MEMORANDUM FOR GENERAL GEORGE LINCOLN

I appreciated very much the opportunity to hear Lt. Berkman's briefing on telecommunications warning systems and to receive the copy of his study.

This is a very important area that raises some very fundamental policy questions that should be resolved as soon as possible after the new OTP gets under way. Many of the questions fall in the category requiring "overall policy guidance from the Director of OTP." As soon as the new director is on board, I would like to suggest a meeting of the three of us and a representative of Dr. Kissinger's Office.

Clay T. Whitehead
Special Assistant to the President

cc: Mr. Whitehead
Central Files

CTWhitehead:jm

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF EMERGENCY PREPAREDNESS
WASHINGTON, D.C. 20504

OFFICE OF THE DIRECTOR

June 4, 1970

MEMORANDUM FOR THE HONORABLE CLAY T. WHITEHEAD
SPECIAL ASSISTANT TO THE PRESIDENT

Attached is a copy of Lt. Berkman's study on telecommunications warning systems. I thought you would appreciate having it as a reference in light of the briefing you received Tuesday. If you consider it useful, feel free to pass a copy on to Dr. Niskanen. I welcome any comments or suggestions on this problem that you might have.

G. A. Lincoln
Director

Attachment

Prepared by: Richard Berkman
May 6, 1970

TELECOMMUNICATIONS WARNING STUDY

I. Summary Conclusions

A. Civil Defense Warning

Civil defense (i.e. attack) warning should be disseminated as rapidly as possible to as much of the general public as possible, in addition to selected groups and officials with emergency responsibilities.

NAWAS[#] is the main system presently available to OCD to disseminate civil defense warning. WAWAS,[*] the EANS/EBS,[**] commercial television and other existing and potential physical communications system can also be used to disseminate civil defense warning.

The systems presently available for disseminating warning to the general public involve a combination of Federal, State, and local warning systems which have a relatively slow response time and limited population coverage.

\# National Warning System
* Washington Warning System.
** Emergency Action Notification System/Emergency Broadcast System.

Comsat

COMMUNICATIONS SATELLITE CORPORATION

ROBERT A. BUTTON
The Special Assistant to the Chairman

July 29, 1969

Dear John:

The attached correspondence refers to the NASA/ COMSAT team project.

Phase I - the inventory of usable system hardware - should be completed by this Friday, August 1st.

Phase II - discussions with possible users - will commence as soon as possible.

The whole project has an aspect of some urgency and goes ahead regardless of the new White House task force.

I think CPB would be at the head of the list for Phase II.

Sincerely,

Attachments.

Mr. John W. Macy, Jr.
President
Corporation for Public Broadcasting
Suite 630
1250 Connecticut Avenue, N.W.
Washington, D.C. 20036

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

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

OFFICE OF THE ADMINISTRATOR

Arrange luncheon w/ Shapley, Labus, Button

JUL 2 1969

Dr. Joseph V. Charyk
President
Communications Satellite Corp.
950 L'Enfant Plaza South, S.W.
Washington, D. C. 20024

Dear Dr. Charyk:

We in NASA welcome the offer you made in your letter of June 12 to Dr. Naugle to work with NASA officials and potential users of satellite service to experiment with available satellite and ground station facilities. The potential scope of experimentation with ATS satellites along the lines envisaged at the NASA briefing on June 13 could be considerably augmented by the additional facilities that COMSAT could make available directly as well as through its participation in INTELSAT.

I suggest that we form a joint NASA-COMSAT team to consider how our respective facilities could be used in support of the proposals that were submitted to NASA at the June 13 meeting as well as similar proposals which may subsequently be received. We could then meet with the interested parties and consider specific projects for implementation or further study. At this stage, we can deal with the question of procedures for securing any required authorizations from the FCC on behalf of COMSAT or the experimentor or from the Director of Telecommunications Management, if necessary in the case of NASA.

If this approach meets with your approval, please call me so that we can arrange an early meeting.

Sincerely,

Willis H. Shapley
Associate Deputy Administrator

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

VP -
OS -

Friday, May 16

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

IN REPLY REFER TO:

8 MAY 1969

Dr. Joseph V. Charyk
President
Communication Satellite Corporation
950 L'Enfant Plaza South, S.W.
Washington, D. C. 20036

Dear Dr. Charyk:

In response to recent expressions of interest in the experimental use of NASA satellites on the part of a number of commercial and educational broadcast organizations, we have invited them to a presentation of the capabilities and availability of the Applications Technology Satellites (ATS) and the experimental opportunities they might offer. Enclosed is a statement setting forth NASA policy covering the availability of ATS satellites for experimental purposes which has been transmitted to the interested parties.

Although your organization is already fully familiar with NASA's ATS experimental program, we would welcome your attendance at this meeting. It will be held at 1:30 p.m. on June 13, 1969 in the Program Review Center, Room 7002, NASA Headquarters, 400 Maryland Avenue, S.W., Washington, D. C.

Please let us know as soon as possible if you or anyone from your organization wishes to attend.

Sincerely,

John E. Naugle

John E. Naugle
Associate Administrator for
Space Science and Applications

Enclosure

THE WHITE HOUSE

WASHINGTON

August 1, 1969

MEMORANDUM FOR

Dr. Lee A. DuBridge
Dr. Paul McCracken
Mr. Robert Mayo
General James O'Connell
Chairman Rosel Hyde
Mr. Richard McLaren
Dr. Thomas O. Paine

We intend to present by ~~November~~ Oct 1 Administration recommendations to the FCC on guidelines for the use of satellites for domestic communications by commercial organizations.

Our objectives in formulating these guidelines should be to:

- assure full benefit to the public of the economic and service potential of satellite technology.

- insure maximum learning about the problems and possibilities of satellite services.

- minimize unnecessary regulatory impediments to technological and market development by the private sector.

- encourage more vigorous innovation generally among communications entities to develop new telecommunications services and markets.

To assist in developing these guidelines, a small working group is being established. I would like to plan our first meeting for Aug. 11 ~~September 4~~ at 2:00 p.m. and invite you or your representative to participate in this effort. I expect that a rather intensive effort will be required by the members of the working group during September and October. We will forward, in the near future, working papers on a number of alternative approaches to these guidelines and on working group procedures. Would you please let my office know who will represent your agency?

Clay T. Whitehead
Staff Assistant

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

We
~~The Administration~~ intend to
by November 1
~~shall~~ present to the FCC ~~in the near~~
future Administration recommendations
on guidelines for initial uses of
~~communications~~ satellites ~~by~~ for
domestic communications by
commercial organizations. (insert) To
assist in developing these guidelines,
~~we~~ a small working group is being
established. ~~It will be~~
~~to develop + evaluate alternative~~
~~Who You~~ Would you or a representative
~~of your office~~ I would like to invite you
or your representative to participate in this
effort. ~~which will~~ We will meet on Thursday,
~~Sept 4 at 2:00 P~~ ~~I will~~ Would you
(no PP) I expect that a rather intensive

meeting for September 4 at 2:00

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

effort will be required by the members of the working group during September & October. Would you please let my office know who will represent your agency?

We will forward in the near future working papers on a number of alternative approaches to these guidelines & on working group procedures.

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

insert

~~Our objective will be to assure that the best possible decision is developed~~

~~In this issue~~ Our objectives in formulating these guidelines should be to:

- assure full benefit to the public of the ~~new~~ economic & service potential of satellite technology
- ensure maximum learning about the problems & possibilities of satellite services
- minimize ~~the~~ regulatory impediments to technological & market development by the private sector until specific needs for regulatory measures appear ~~are necessary~~
- encourage more vigorous innovative ~~competitive~~ generally among communications entities to develop new telecommunications services & markets.

~~Discuss w/ Tom Moore~~
CTW- For final approval & insertion of dates
Bell

MEMORANDUM

THE WHITE HOUSE
WASHINGTON

FOR: DuBridge
McCracken
Mayo
O'Connell
Hyde
McLaren
~~Shapley~~
Paine

~~cc Tribus Cherington~~

cc Tribus Cherington ~~Blount~~ Dep PMG

cc: Tribus Cherington PM Deputy Gen.

The Administration seeks to ~~develop and evaluate alternative approaches to a formal policy on domestic~~ develop comments or recommendations for ~~adopting decision~~ the introduction of satellites communications ~~to place before~~ for domestic uses to present to the Federal Communications Commission in the near future. The objectives should be to:

~~develop an approach to communications policy generally~~

1. Develop guidelines governing the use of satellites for domestic communication by commercial organizations. These guidelines are to encourage more vigorous innovative competition among communication entities and thereby result in the establishment of new telecommunication services and markets as well as lower rates.

2. Minimize unnecessary regulatory impediments to technological and market development by the private sector.

3. Insure maximum learning about the problems and possibilities of this new technology.

A number of alternative policy approaches, including those of a draft

FCC Order and the Rostow Report, have already been compared as ways of achieving these objectives. ~~These are outlined in the accompanying paper.~~ A paper outlining these alternatives will be forwarded soon.

A working group is being established to undertake a more thorough analysis of these options as well as others it may develop. You, and/or a designated representative, are invited to attend a meeting on _____ at _____ at which time the organization and procedures of the working group will be established.

cc: Tribus
Cherrington
Dep PMG

THE WHITE HOUSE
WASHINGTON

8/11/69

FOR: Mr. Whitehead

FROM: Mr. Gabel

Mr. Gabel sez this is rather sensitive.

Alternative 1: Open Entry, No Pilot Program

(a) Organization - Any entity would be free to install, own and operate satellite systems for competitive or complimentary service, subject to national and international radio licensing restrictions. Competition for satellite or terrestrial provision of service would be permitted on a non-predatory basis.

(b) Technical - Uncertainties with regard to spectrum use and orbital slots would be resolved by privately financed experiments with responsibility for avoiding harmful interference (or rendering compensation therefor) on each operating entity.

(c) Participation - Open to any prospective user on carrier who foresees economic application and is willing to stand the financial risk.

(d) Public Role - FCC would continue to exercise authority over frequency licensing and, where common carrier participation is involved, exercise its statutory functions. NASA would provide technical advice.

(e) Plan Tenure - Indefinite. No need for pilot. Market forces would generate permanent arrangements.

Alternative 2: Open Entry on Interim Basis

(a) Organization - Basically same as alternative 1 except that NASA would serve as technical coordinator passing on compatability of proposed systems, both special purpose or multiple purpose.

(b) Technical - Project proposers would have wide discretion on design subject only to NASA technical review and coordinated use.

NASA to contribute through ATS-type technical program.

(c) Participation - As in alternative 1.

(d) Public Role - NASA to provide technical coordination and advisory role. FCC to perform conventional licensing and regulatory functions. Rate-making policies governing carrier operations would recognize high risks of undertaking (e.g., accelerated depreciation, high rate of return, etc.)

(e) Plan Tenure - Set for fixed period. Thereafter, permanent operating arrangements to be determined.

Alternative 3: Controlled Multiple-Entry Pilot (Rostow Proposal)

(a) Organization: Entry open to major users and suppliers under COMSAT coordination. COMSAT to own demonstration satellite with design to reflect views of users. Ground station ownership would be the responsibility of users, with COMSAT coordinating design while acting as system manager. Multiple purpose system.

(b) Technical: Coordination by COMSAT

(c) Participation: Open to major entities, including users and common carriers.

(d) Public Role: FCC provides spectrum assignment and common carrier regulation. NASA to provide assistance in ensuring technical coordination. It conducts parallel experiments and systems analysis as basis for future organizational recommendations.

(e) Plan Tenure - A pilot program with alternate ownership rights to be determined thereafter.

Alternative 4: Single Pilot Project (FCC Proposal)

(a) Organization - A two-stage approach. First, development of technical-operational plan with interim ownership arrangements deferred to second stage; permanent ownership arrangements deferred until completion of demonstration program. COMSAT to be system coordinator responsible to an advisory committee composed of major suppliers, users and operating utilities. Committee to be chaired by FCC Commissioner.

(b) Technical - Determined through advisory committee, although Commission favors single, multiple purpose system.

(c) Participation - Nominally open to all users and operators.

(d) Public Role - FCC leadership exercised through chairmanship of satellite advisory committee. Commission exercises standard licensing and regulatory functions while relying on NASA for technical review.

(e) Plan Tenure - Demonstration project of predetermined duration with ownership rights and permanent working arrangements established upon conclusion of the pilot.

Evaluation of Alternatives

Assessment of these four alternative plans depends on what we seek to achieve out of a domestic communications satellite program. There is reasonable consensus on objectives so that we can evaluate the proximity with which the alternatives meet these objectives. The detailed evaluation follows. The caption headings are an abbreviated statement of goals.

1. Maximum Information - The program should provide the maximum of information concerning the technical, operating and economic aspects of satellite communication. The two first alternatives hold far greater promise in this regard, than the last two. COMSAT has not displayed market initiative in seeking new technical or operating approaches. Coordination under its leadership may tend to freeze structural arrangements and minimize the foundation for learning.

2. Effects on Innovation. In theory, the first plan offers the widest scope for innovation. Practically, its effectiveness is restrained by the absence of capable technical coordination proposed by the second alternative. The technical constraints imposed by the NASA role under plan 2 are viewed as necessary for compatability, but without the restraints imposed by the pecuniary motivations of the common carrier.

3. Least Delay. The fourth alternative, the FCC approach, would appear to invite greatest delay. In seeking a consensus of views of commercially hostile participants through an Advisory Committee, we would expect extended discussion and acrimony and probably the lowest common denominator in terms of agreed design. There would probably be small difference in speed of implementation under the first three plans.

4. Public vs. Vested Interests. Under the interim arrangements for the INTELSAT consortium, and in the international communications field generally, commercial interests have frequently restricted the full exploitation of technology to the detriment

of other private benefits and public usage. We should avoid this possibility in the domestic environment. The first two alternatives are advantageous with respect to relative freedom of market opportunities and avoid the possible closure of technical-operating systems latent under plans three and four.

5. Ownership Options. It seems desirable at this time to keep all ownership options--including possible public ownership of some domestic satellite system--wide open. Despite repeated assurances that a trusteeship arrangement does not bind future commitments, the inference is clear that a trustee assignment will solidify the position of the designee as future operator. If COMSAT (or any interested party) were designated as trustee for domestic satellite service on the basis of previous experience, a reversal of this view will become infinitely more difficult as additional experience is gained as interim operator for the domestic system. The two latter plans are equally faulty on this score. The options would remain open under the first two alternatives.

6. Encourage Experimentation - Permit Assessment. While we want to encourage experimentation, we need to establish an arrangement whereby objective assessment of these efforts can be undertaken. The role proposed for NASA under the second alternative makes it most desirable on this score. NASA would provide continuous monitoring and evaluation of the technical and operating advantages and limitations of the experimental efforts, just as with the ATS efforts. It would be difficult to establish equally satisfactory working arrangements under

the first alternative. In its role as a common carrier, COMSAT would tend to promote established technology and operating methods and possibly preclude wholly independent evaluation of the experiments, as under alternatives 3 and 4.

7. Advanced technology. Given the rapid pace of technological advance in the satellite field, it is desirable to seek employment of the most current state of the art. The first two alternatives are most likely to exploit more advanced technical methods if only for their reduced dependence on established common carriers. Theoretically, users could turn to advanced suppliers such as TRW and Hughes for advice under any of the alternative plans. In practice, the manufacturers are likely to be far more diffident in response with the foreknowledge that coordination must be effected through COMSAT (alternatives 3 and 4) than of a commercially neuter body such as NASA were performing this function.

8. Risks or the Private Sector. Public funds has made satellite communications possible. The future offers many attractive commercial opportunities. The rewards may be great. The risks of development, which may be equally large, should be borne at this stage by private enterprise. The FCC proponents of plan 4 avers this as its objective. Regulatory experience implies to a contrary result. In common carrier systems management errors of market or technology are absorbed as part of the cost of total revenue requirements, borne by subsequent users on other service classifications. This difficulty is evinced to a lesser

extent under alternative no. 3. The first two alternatives are reasonably clear on this point in that the cost burden rests directly on those initiating the experimental effort.

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

New FCC watchdog on Pennsylvania Avenue

Nixon administration will make itself felt in establishment of communications policy

The White House's public intervention into the FCC's consideration of domestic communications-satellite policy apparently presages a continuing effort on the part of the Nixon administration to keep a close watch on—and to exercise influence over—major developments in communications.

White House aides reject suggestions that the administration's plans for setting up a small committee of government specialists to review all aspects of the complex communications-satellite issue ("Closed Circuit," July 28) indicates a lack of confidence in the commission.

"The question of confidence has nothing to do with it," said one Presidential aide. "It's simply that this [communications-satellite issue] is a big one. It's one that we ought to concern ourselves with."

But he also indicated the White House would be interesting itself increasingly in commission matters. "Big problems are looming on the horizon," he said. "It would be surprising if we didn't take a look at them."

He declined to specify which problems might attract the administration's attention. But the policy questions involved in the current inquiry into the relationship between computers and communications regulations might be one. The general question of spectrum management could be another.

Whatever the issue, the White House will not necessarily tackle it with a committee, as it is doing in the case of communications-satellite policy, the aide said. It might work through one of the executive agencies—the Justice Department, for instance, or the Office of Telecommunications Management—which would enable it to maintain a low silhouette. The aide said this technique has not yet been used.

The Department of Justice's antitrust division increasingly over the past several years has contributed comments to commission rulemaking proceedings and filed pleadings aimed at breaking up or preventing what it considers anticompetitive broadcast ownerships.

White House sources also dispute the notion that such interest is unusual or unprecedented on the part of an administration. They noted that the Johnson administration established a task force on communications policy to make a comprehensive study of a host of communications matters.

Commission officials made no secret of their unhappiness over the letter from White House aide Dr. Clay T. Whitehead, notifying the commission that the White House was establishing a small working group that would review the domestic-satellite matter and issue a report in 60 days.

The commission has been studying the matter for four years and, according to some officials, was prepared to announce its policy determination regarding an interim system last year. However, although an independent agency, it felt obliged to await the results of the task-force report, which was completed in December. Then the commission felt it had no choice but to maintain liaison on the matter with the new administration which came into office in January and permit it to consider the matter.

Chairman Rosel H. Hyde, in responding to Dr. Whitehead's letter, reflected the commission's impatience. He noted that the domestic-satellite issue has been studied extensively by the commission and President Johnson's task force and that the commission feels "it is vital to proceed without further undue delays in the formulation of national policy in this area."

But he also indicated the difficulty a government agency has in saying no to the President by adding: "At the same time, we would, of course, welcome any further exchange of views or comments which the Chief Executive might wish to make in this new field."

Dr. Whitehead's letter indicated the committee would not focus on the commission's domestic-satellite proposal but, rather, on "the general structure and direction of the industry. . . ."

Dr. Whitehead, who will serve as chairman of the committee, had not yet named its members last week. He was planning to write the secretaries of commerce and transportation, the attorney general, the Office of Telecommunications Management, the President's Council of Economic Advisors, the Office of Science and Technology and the FCC, asking them to name representatives to serve.

The commission's proposal for an interim system has not yet been made public. But it's understood it would provide for a multipurpose system that would be managed by the Communications Satellite Corp. ("Closed Circuit," June 2). Comsat, according to one source, would be given the responsibility of working out a mutually satisfactory agreement with potential users—common carriers and broadcasters, among them—on ownership and management of the system. The FCC reached no decision on ownership.

This proposal—apparently aimed at accommodating the conflicting views in part of the parties involved—is understood to have run into opposition from a number of quarters. Comsat reportedly feels that conflicting views of the parties would produce a stalemate; it believes it should be named the manager of the project, directed only to confer with other principals.

AT&T, the dominant carrier of voice and TV and radio traffic in the U.S. is said to be having second thoughts about the wisdom of a domestic-satellite system. The company three years ago proposed a single, multipurpose system as a pilot project, but, reportedly, it now feels there is a serious question as to whether such a system would be more efficient and economical for users than a terrestrial network. However, AT&T is agreeable to a pilot project that would permit its assumptions to

CPB money bill moves on

The House Communications Subcommittee last week approved a proposed $20-million authorization for the Corp. for Public Broadcasting. The bill (H. R. 4212) now goes to the parent Commerce Committee this week. Omitted from the bill, however, was an authorization for appropriation of "such sums as may be necessary" for each of the next five fiscal years beginning July 1, 1971. The bill had previously been passed by the Senate (S. 1242) with that provision.

be tested.

In addition, the hardware manufacturers—companies that build satellites and ground-station equipment—are said to favor establishment of a number of specialized systems for individual users (telephone, broadcasting, computer-data, among others) rather than one multipurpose system. Such a variety of systems, obviously, would provide a greater market for their wares.

It is not known whether or to what extent such interested parties have expressed their views to the White House. But it is known that the White House committee will obtain the views of industry representatives in its review.

Besides questions involving ownership and management of the system, the White House is concerned over elements in the project which impinge on the President's responsibilities in the field of international relations. The use of frequencies assigned for satellite communications—4gc and 6gc—would have to be coordinated with the needs and plans of other nations. And some foreign governments as well as the International Telecommunication Union are said to have expressed so informally reservations about the U.S. plans for a domestic system. The State Department is currently developing the U.S. position on satellite communications to be presented at an international conference in Geneva in 1971.

In addition, a domestic communications satellite would be lofted into a synchronous orbit over the equator: and its "parking space" would involve the U.S. in negotiations with other nations planning systems of their own. Canada, for instance, has plans for a domestic system.

THE WHITE HOUSE

WASHINGTON

August 5, 1969

MEMORANDUM FOR

Dr. Lee A. DuBridge
Dr. Paul McCracken
Mr. Robert Mayo
General James O'Connell
Chairman Rosel Hyde
Mr. Richard McLaren
Dr. Thomas O. Paine

We intend to present, by October 1, Administration recommendations to the FCC on guidelines for the use of satellites for domestic communications by commercial organizations.

Our objectives in formulating these guidelines should be to:

- assure full benefit to the public of the economic and service potential of satellite technology.

- insure maximum learning about the problems and possibilities of satellite services.

- minimize unnecessary regulatory impediments to technological and market development by the private sector.

- encourage more vigorous innovation generally among communications entities to develop new telecommunications services and markets.

To assist in developing these guidelines, a small working group is being established. I would like to plan our first meeting for August 15 at 2:00 p.m. and invite you or your representative to participate in this effort. I expect that a rather intensive effort will be required by the members of the working group during September and October. We will forward, in the near future, working papers on a number of alternative approaches to these guidelines and on working group procedures. Would you please let my office know who will represent your agency?

Clay T. Whitehead
Staff Assistant

cc: Dr. Myron Tribus (Commerce)
Mr. E. T. Klassen, Deputy Postmaster General
Mr. Paul Cherington (DOT)
Mr. Flanigan
Mr. Hinchman
Mr. Gabel
Mr. Hofgren
Mr. Trent
Mr. Kriegsman
Mr. Whitehead
Central Files

CTWhitehead:ed

Thursday 8/7/69

2:45 Frank Loy's office received their copy of the Domsat Working Group paper.

He wants to know if it is for information or for action.

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

OFFICE OF THE DIRECTOR

August 7, 1969

Memorandum for Dr. Clay T. Whitehead:

Reference is made to your memorandum of August 5th concerning the establishment of a small working group to develop the Administration's recommendations to the FCC on guidelines for the use of satellites for domestic communications by commercial organizations. As I indicated to you earlier, I have designated Colonel Ward T. Olsson, USAF, to serve as the Office of Telecommunications Management representative to the working group that you are establishing. I share your recognition of the importance of this effort and the need for an early initiation of a dynamic program which will enable the nation to benefit from the potential of this new technology. I stand ready to provide any further assistance you may need in this regard as your working group progresses.

J. D. O'Connell

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

OFFICE OF THE ADMINISTRATOR

AUG 1 1 1969

MEMORANDUM FOR: Dr. Clay T. Whitehead
Staff Assistant
The White House

In response to your memorandum to Dr. Paine of August 5, 1969, concerning a working group to develop guidelines for the use of satellites for domestic communications, I will participate as NASA representative and Dr. Walter Radius will serve as my alternate. I am planning to attend the first meeting on August 15 at 2:00 p.m. and would like Dr. Radius to accompany me.

Willis H. Shapley
Associate Deputy Administrator

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY
WASHINGTON, D.C. 20506

August 7, 1969

MEMORANDUM FOR

Clay T. Whitehead
The White House

SUBJECT: Working Group on Domestic Communications Satellite Policy

Dr. DuBridge has agreed to participate in the study of domestic communications satellite policy and has asked me to inform you that I will represent OST on subject working group.

Russell C. Drew

Russell C. Drew
Technical Assistant

FROM THE DESK OF

WARD T. (TOM) OLSSON

August 12, 1969

Memorandum for Dr. Clay T. Whitehead:

The attached paper replaces the previous draft I left last Friday. This expanded version incorporates some of the thoughts of Walt Hinchman.

Tom

W. T. Olsson

cc: Mr. Gabel
Mr. Hinchman

THE WHITE HOUSE
Washington, D. C.

DRAFT/ 8/11/69

Topical Outline

MEMORANDUM FOR THE Honorable Rosel H. Hyde:
Chairman, Federal Communications
Commission

Subject: Domestic Satellite Communications Policy

Purpose: To express viewpoints of the President and the policy of the Administration.

Memorandum will:

-- Highlight opportunities and challenges

-- Encourage FCC to formulate a dynamic program

-- Suggest flexible structural arrangement

-- Provide Administration's policy guidelines

Basis for Presidential Interest

Communications Satellite Act of 1962

Presidential responsibilities (Sec. 201 (a)) and national interest aspects of the subject.

Highlight Achievements

-- Space Program - APOLLO 11 example.

-- Satellite communications experiments and demonstrations.

-- Institutional arrangements for international cooperation.

-- Operational employment
(Commercial Global System - INTELSAT)

Challenge to the Nation

-- Recognize the opportunities for applying satellite communications in the domestic scene throughout the fifty States.

-- Promote the early introduction of this modern technology for the benefit of our society.

Policy of the Administration

-- The Executive Branch will aggressively encourage the exploitation of advanced technological innovations in the space field, particularly the establishment and operation of commercial satellite communications by private enterprise for both domestic and international telecommunications.

-- The nations activities in satellite communications will be guided by the policy contained in the Communications Satellite Act of 1962 and will be consistent with the obligations under the terms of the Interim Arrangements for the Global Commercial Communications Satellite System (INTELSAT) and the International Radio Regulations (ITU).

-- With respect to domestic applications of satellite communications technology, this Administration will promote the early initiation of a Provisional Domestic Commercial

Communications Satellite Program (Pilot Project). This Pilot Project would promote a dynamic undertaking by private enterprise to establish a wide range of alternative applications in such a way as to evaluate the technical, operational and economic trade-offs with a view toward enhanced telecommunications in both quality of services and charges for such services.

Primary Goal of the Provisional Domestic Commercial Communications Satellite Program (Pilot Project)

-- Pursue a dynamic program which will provide an early Domestic Communications Satellite System (satellite and earth station facilities), as part of an integrated system of telecommunications for the nation, which will assure full benefit to the public by providing a broad range and quality of service while meeting the common good at the most reasonable cost, and at the same time be so designed as to achieve maximum responsiveness under emergency conditions (Presidential Communications).

Secondary Goals

-- Foster wide participation in the Pilot Program and encourage competition and flexible structural approaches within regulatory and statutory limitations, International Radio Regulations (ITU), and other international commitments (INTELSAT).

-- Encourage early application of technological and management innovations in meeting the growing needs of society for enhanced telecommunications services in common carrier and special purpose (dedicated) applications.

-- Obtain the maximum learning and information on technical, operational and economic factors relating to use, management and ownership of domestic commercial communications satellite system(s).

Program Approach and Institutional (Structural) Arrangements)

Offer the Chief Executive's views on the need for an enlightened program approach and the need for ensuring flexible policies regarding organization and management arrangements during the explorative phase of the program. Provide an example of a structural model which should be examined by the Commission for the Pilot Project as follows:

(Select optimum alternative)

For example:

Alternative I-D (1st Choice)

Single Multiple-Purpose System

Two or more networks

COMSAT Space Segment Multi-Purpose Satellite with common carrier and dedicated transponders

Participants - Common Carrier Group Terrestrial network -- ATT, other common carriers and interested participants would be encouraged to pursue a Pilot Project for providing common carrier services (voice, record, data and television)

Participants - Dedicated Terrestrial network - GE, CPB, Networks (NBC, ABC, CBS) and Ford Foundation would be permitted to pursue a pilot program to use the dedicated portion of the multiple-purpose satellite provided by COMSAT and a dedicated terrestrial furnishing record, data and broadcast (television and radio) distribution services for interested participants.

This alternative would enable a competitive but rigidly controlled test to be conducted of the technical, operational and economic viability of fundamental and diverse approaches of

the proponents of satellite communications for domestic telecommunications. The Executive Branch would establish the Pilot Project Evaluation Group to make recommendations on the long-term role of satellite communications in the domestic environment.

Another example:

Alternative II - A (2nd choice)

Dual Systems Approach

System I

COMSAT Space Segment Multiple-Purpose Satellite for common carrier purposes.

Participants - Common Carrier Group Terrestrial Network - AT&T and other common carriers would be encouraged to pursue a Pilot Project to provide common carrier services (voice, record, data and television).

System II

Space Segment by means of a separate dedicated satellite for specialized services developed by a Consortium of interested parties.

NASA provide technical advice to the Consortium.

Participants - GE, CPB, Networks (ABC, CBS, NBC) and Ford Foundation would be encouraged to pursue a Pilot Project to use a dedicated satellite and dedicated earth station network(s) for the purpose of furnishing record, data and broadcast (television and radio distribution services for interested participants.

This alternative would enable a competitive but loosly controlled test to be conducted of the technical, operational and economic viability of two approaches. Again, the Executive Branch Pilot Project Evaluation Group would make recommendations on the long-term role of satellite communications in the domestic environment.

Policy Guidelines for Implementing Program

-- Applicability of COMSAT Act of 1962.

-- Highlight Sec. 102 (d) national interest.

-- Avoid actions which would be contrary to United States' obligation to the INTELSAT Consortium.

-- Other specific guidelines like
  - Preserve U. S. interests in the positions taken for the World Administrative Radio Conference, 1971

Summary

RMN Support of this program.

Indicate need for dynamic approach

Call on FCC to rise to the challenge.

Refer to attached Message to the Congress.

Welcome further discussions as program unfolds and tasks the new DTM to keep me informed of progress in this important undertaking.

For the President's Signature

Encl.
(White House Message to the Congress)

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

August 7, 1969

TO: C. T. Whitehead

FROM: R. Gabel

SUBJECT: Domestic Satellite Task Force

There is attached for your information a list of parties who filed comment with the FCC in the Domestic investigation.

The Task Force designated by your Memo of August 6, 1969 may seek extended discussion with a select number of participants who contributed to the proceeding. In addition, there are a few knowledgeable individuals who can contribute diverse and imaginative viewpoints. The suggested individuals and their affiliated organizations are listed below:

Participants in FCC Docket 16495

1. COMSAT — Bob Button, Bob Brickman, Joe Charyk

2. AT&T — Ken McKay, Bill Stump, Ben Oliver

3. ABC Network

4. CBB/Ford Foundation/ NAEB/NET — John Macy, George Bundy, Matt Coffey, Ed Roth

5. General Electric — Dick Gifford, John Gayer, Don Atkinson

Other Possible Contributors

1. Hughes Aircraft — Harold Rosen, A. D. Wheeler, Alan Puckett

2. FCC — Nick Johnson

3. Yale University — Merton J. Peck

4. Canadian Satellite Corporation

5. Rand Corporation — Leland Johnson

Domestic Satellite Inquiry

Parties Filing Comments in Docket (16495)

Party	Represented By
ABC Television Affiliates	Wilner, Scheiner & Greeley 1343 H St., N.W. Washington, D. C. 20005
Ad Hoc Committee on Adult Education	Eugene I Johnson, Sec. c/o Adult Education Assoc. of the USA 1225 19th St., N.W. Washington, D. C. 20036
Aeronautical Radio, Inc. & Air Transport Assoc. 1000 Connecticut Ave. Washington, D. C. 20036	Donald C. Beelar Kirklan, Ellis, Hodson, Chaffetz & Masters 800 World Center Bldg. Washington, D. C. 20036
American Broadcasting Companies, Inc. 7 West 66th Street New York, New York 10023	Mortimer Weinbach 7 West 66th Street New York, New York 10023
American Library Association 50 E Huron Street Chicago, Illinois 60611	
American Newspaper Publishers Assoc.	Kirkland, Ellis, Hodson Chaffetz & Masters 800 World Center Bldg. Washington, D. C. 20006
American Petroleum Institute 1101 17th St. N.W. Washington, D. C. 20036	Joseph E. Keller W. H. Borghesani, Jr. Keller and Heckman 1712 N Street, N.W. Washington, D. C. 20036
American Telephone & Telegraph Co. 195 Broadway New York, New York 10007	
American Trucking Assoc., Inc. 1616 P Street, N.W. Washington, D. C. 20009	Jeremiah Courtney Arthur Blooston 908 20th St., N.W. Washington, D. C. 20006

California State of

Arent, Fox, Kintner,
Plotkin & Kahn
1100 Federal Bar Bldg.
1815 H St., N.W.
Wash., D. C. 20006

Carnegie Commission on Educational
Television
26 New Street
Cambridge, Massachusetts 02138

CBS Television Network Affiliates Assn.

Ernest W. Jennes &
Henry Goldberg
Covington & Burling
701 Union Trust Bldg.
Washington, D. C. 20005

Columbia Broadcasting System, Inc.
51 West 52nd Street
New york, New York 10019

Communications Satellite Corporation
950 L'Enfant Plaza South, S.W.
Washington, D. C. 20024

Dow Jones, Inc.
30 Broad Street
New York, New York 10004

Ford Foundation
477 Madison Avenue
New York, New York 10022

General Electric Co.
777 14th Street, N.W.
Washington, D. C. 20005

Carl R. Ramey
McKenna & Wilkinson
1705 DeSales St., N.W.
Washington, D. C. 20036

GT&E Service Corp.
730 3rd Avenue
New York, New York 10017

Hawaiian Telephone Co.
P.O. Box 2200
Honolulu, Hawaii 96805

Warren E. Baker, Esq.
Chadbourne, Parke,
Whiteside & Wolff
One Farragut Square South
Washington, D. C. 20005
&
Marshall M. Goodsill
Anderson, Wrenn and Jenks
P.O. Box 3196
Honolulu, Hawaii 96801

Health, Education & Welfare (U.S. Dept. of)
300 Independence Avenue, S.W.
Washington, D. C. 20003

ITT World Communications, Inc.
320 Park Avenue
New York, New York 10022

JFD Electronics Corp.
770 Lexington Avenue
New York, New York 10021

Joint Council of Educational
Telecommunications

Lloyd P. Morris
2947 N. 78 Ct.
Elmwood Park, Illinois 60635

National Association of Broadcasters
1771 N Street, N.W.
Washington, D. C. 20036

National Association of Educational
Broadcasters
Dupont Circle Bldg.
Washington, D. C. 20036

National Association of Manufacturers
918 16th Street, N. W.
Washington, D. C. 20006

National Broadcasting Co., Inc.
30 Rockefeller Plaza
New York, New York 10020

National Education Association
1201 Sixteenth St., N.W.
Washington, D. C. 20036

National Education Television & Radio
Center

Mallyck and Bernton
621 Colorado Building
Washington, D. C. 20005

Krieger & Jorgensen
1926 I St., N.W.
Washington, D. C. 20006

2947 N. 78 Ct.
Elmwood Park, Ill. 60635

Norman E. Jorgensen
Louis Schwartz &
Robert A. Woods
Krieger and Jorgensen
1926 Eye St., N.W.
Washington, D. C. 20006

Howard Monderer
Nat'l Broadcasting Co., Inc.
1725 K St., N.W.
Washington, D. C. 20006

Henry G. Fischer
McKenna & Wilkinson
1705 M St., N.W.
Washington, D.C. 20036

National Science Foundation & National
Foundation on Arts & Humanities
1800 G Street, N.W.
Washington, D. C. 20550

United States Independent Telephone
Assoc.

Warren E. Baker
Chadbournne, Parke,
Whiteside & Wolff
One Farragut Square Square
Washington, D.C. 20006

Western Union International
26 Broadway
New York, New York 10004

Western Union Telegraph Company
60 Hudson Street
New York, New York 10013

Wednesday 8/13/69

9:55 Mr. Scherr in the General Counsel's Office at Post Office indicated he would attend the first meeting of the Domestic Satellite Working Group on Friday (8/15) at 2 o'clock. (177) 7472 or 8149

Memo sent to	Phone No.	Date sent	Representative	Repr.'s Phone No.	Attended Mtg. on 8/15/69
Dr. Lee A. DuBridge Director, Office of Science and Technology Room 203 - EOB	3530	8/6/69	Dr. Russell Drew	3570	Dr. Russell Drew
Dr. Paul McCracken Chairman Council of Economic Advisers Room 312 - EOB	5036	8/6/69	Dr. Tom Moore	5080	Ed Mitchell
Mr. Robert Mayo Director Bureau of the Budget Room 252 - EOB	4840	8/6/69	Bill Morrill	4684	Don Crabill
General James O'Connell Director, Office of Telecommunications Management 1800 G Street, N. W. Washington, D. C.	5182	8/6/69	Col. Ward Olsson	5190	Col. Ward Olsson
Chairman Rosel Hyde Dean Burch Federal Communications Commission Room 814 1919 M Street, N. W. Washington, D. C.	632-6336	8/6/69	Chairman Hyde Bernard Strassburg	Same	Chairman Hyde Bernard Strassburg
Mr. Richard McLaren Assistant Attorney General Dept. of Justice Room 3109 10th and Const. Ave., N. W. Washington, D. C.	(187) 2401	8/6/69	Don Baker	(187) 2411	Richard McLaren Walker Comegys (Brock)

Dr. Thomas O. Paine Administrator National Aeronautics and Space Administration Room 7137 - FOB-6 400 Maryland Avenue, S. W. Washington, D. C.	(13)36931	8/6/69	Mr. Willis Shapley Dr. Walter Radius (Alt)	(13) 24715	Mr. Shapley Dr. Radius
Dr. Myron Tribus Asst. Secy. of Commerce for Science and Technology 14th and Const. Avenue, N. W. Room 5884 Commerce Dept. Washington, D. C.	(189) 3111	8/6/69	Walter Hinchman Rm. 493 - EOB	2179	
Mr. E. T. Klassen Deputy Postmaster General Room 3202 New P. O. Bldg. 12th and Pa. Ave., N. W. Washington, D. C. 20004	(177) 7370	8/6/69	Robert Scherr G. C.'s office)	(177) 7472	Robert Scherr
Mr. Secor Browne (now CAB) Asst. Secy. for Research and Technology Dept. of Transportation Room 800 West 800 Independence Avenue, S.W. Washington, D C 20590	962-0988	8/6/69	Richard L. Beam Director, Office of Telecommunications Rm. 834	963-4313	Richard L. Beam

Copies of memo of August 5 also sent to:

		Date
Frank Loy	632-1498	8/6/69
Governor Scranton	632-9004	8/6/69
Abbott Washburn	632-8919	8/6/69

Domestic Sat. Comm.

Friday 8/15/69

1:10 The following people will be attending the 2 o'clock meeting this afternoon on domestic satellites:

OST	Dr. Russell Drew
CEA	Ed Mitchell
BOB	Don Crabill
DTM	Col. Ward T. Olsson
FCC	Chairman Rosel Hyde Bernard Strassburg
Justice	Richard McLaren Walker Comegys DON BAKER
NASA	Dr. Willis Shapley Dr. Walter Radius
Post Office	Robert Scherr
Transportation	Richard L. Beam
White House	William Kriegsman Richard Gabel Walter Hinchman

Working Members of the Domestic Satellite Group

Dr. Russell Drew
Dr. Tom Moore
William Morrill
Col. Olsson
Bernard Strassburg
Don Baker
Willis Shapley
Dr. Walter Radius
Walter Hinchman
Robert Scherr
Richard Beam
Will Kriegsman
William Anders
Richard Gabel

Donsat

COMSAT

COMMUNICATIONS SATELLITE CORPORATION

ROBERT E BUTTON
The Special Assistant to the Chairman

August 15, 1969

Dear Walter:

Enclosed are two papers. One is the draft we discussed at lunch. Our chairman likes it.

The second is some data on INTELSAT IV rate structures which you may find useful background information.

Sincerely,

Bob

Attachments

Mr. Walter R. Hinchman
Room 110
Executive Office Building
Washington, D.C. 20503

August 11, 1969
R.E.B.

NEW INITIATIVE ON DOMESTIC SYSTEM

This question has to be approached in a political frame of reference. If anyone doubts that, the President's broadcast on the new welfare system should have resolved the matter. In that particular case the President, after a 10-month study, came out with a new and shiny package of a welfare program with which he eliminated the existing set-up, propounded a new set of criteria and outlined a plan for achieving his goal.

I can only assume that the communications picture contains many of the same elements and potentials. If I were in the President's shoes I would seek to clarify a set of goals, to open the doors wide on a bright and shiny new technology, appoint a new team including a DTM, a chairman and two new commissioners of the FCC, and proceed forthwith to put the stamp of a new Administration on the whole package.

This being a politician's world, the package developed by the WH group is going to have the maximum spread in its recommendations, that is to say, something for almost everybody based on a set of premises that has to include private enterprise, competition and benefits to the public in terms of adequate, efficient and low-cost service.

It seems to me that the starting point is the question: Are we in the business to create a new primary system of space-based communications or is the plan simply to add on to the existing terrestrial system a new increment? If I were President I would say we are creating something new, something primary, something revolutionary.

In doing so I would not try to bypass or evade the knowledge and the experience of the people who manage the system we now have. As a politician I would simply set the goal and then create the mechanism to achieve it.

Assume then that the entire industry is charged with the objective of maximizing space-based communications, global and domestic; it is then necessary to delineate the role of every possible participant in such a system. If this is not done, there will be law suits from carriers, endless adverse filings by non-carriers, and a futile and endless defensive battle facing COMSAT.

The Communications Satellite Act of 1962, good as it was, created anomalies and contradictions which have severely tested those businessmen and technical people, who in the best of will, have tried to make it work. Giving them all credit I would propose to resolve certain of those contradictions so that the energies of our entire communications community can be directed to the objective of the best, most imaginative and publicly useful total communications system of which Man is capable.

To accomplish this I would create by Executive Order the Council of Communications Advisers, drawn from all segments of industry which have an interest in the use of space communications. I would charge the Council with preparing legislation that would correct the present law and recreate the presently absent incentives to maximize the deployment of this new technology. To provide laboratory conditions in which the Council's work could be meaningful, I would set Administration policy so that subject to proper economic safeguards COMSAT would be authorized to respond to any experimental requirement of the Council with satellites and other equipment needed to demonstrate and then provide any needed service. The most immediate example of this would be the Domestic System, the foundation of which could be created as explained in the Sampson memorandum of 11 August 1969. However, since this memorandum does not address itself to the political question, it is absolutely necessary to add that the domestic system be available (in the words of the 1962 Act) on a non-discriminatory basis.

We have by law a chosen entity in satellites, COMSAT, which has made a fine record of achievement in operating the global system with 68 other nations in INTELSAT. I would propose that COMSAT with its attention focused on space be in a similar role with the Council as it is in INTELSAT, charged with creating a new primary system of communications, risking its capital to do so and sharing the risk with

any participant who wished to do so. In the domestic case, the participants would be not nations but domestic entities who see sufficient promise in a project to put up their money to make it come about. If a possible use of the system appeared for which there were no parties willing to share the risk, COMSAT could proceed on its own, which is the general attitude it takes within INTELSAT.

In proposing a Council of Communications Advisers, COMSAT as Manager, and a domestic initiative immediately, I would recommend that the President frame all this in the context of Apollo 11 (which he did with the welfare program), as a spin-off from the space program, one that had application to many domestic problems (Task Force Report) and one that would have substantial effect on the domestic economy. The creation of the Council would be the proper way to bring together currently irreconcilable interests such as those of the CATV and the NAB, a prime example.

Assuming the acceptance of the above, this Administration has the opportunity to put a team in charge of bringing it all about. I can imagine a presentation in which the President explained the background, issued the challenge and presented the key members of the new team (DTM, FCC). If there are other organizational changes he has in mind in the public interest, they of course should be included.

In my opinion there is enough meat to be added to this skeleton to provide substance for an interesting public broadcast and to give the Administration considerable credit for moving ahead in an activity that is basic to the national interest and to the Administration itself.

I N T E L S A T

RATE PROFILE
ASSUMPTIONS FOR INTELSAT IV PROGRAM

Contract Prices	
Delivery: First Four Spacecraft	$52,554,600
TT&C	1,401,000
Unlaunched or Launch Failure (each)	3,211,560
Incentives (each satellite)	
30 days satisfactory operation	2,919,700
Each month through 84th month	22,865
Launch Cost (Based on Titan IIIB/Agena)	
NASA Non-Recurring	12,530,000
NASA Recurring (each s/c)	11,430,000
Contractor Launch Support (each s/c)	211,500
Other Recurring (each s/c)	1,000,000

Launch Schedules

	Minimum Program (One In-Orbit Spare)	Maximum Program (Three In-Orbit Spares)
F-1 Atlantic - Fail	1971-1st qtr.	1971-1st qtr.
F-2 Atlantic	1971-2nd qtr.	1971-2nd qtr.
F-3 Pacific	1971-4th qtr.	1971-3rd qtr.
F-4 Indian	1974-3rd qtr.	--
System In-Orbit Spare	--	1971-4th qtr.
F-5 Sys. In-Orbit Spare-Fail	1975-3rd qtr.	1972-1st qtr.
F-6 System In-Orbit Spare	1975-4th qtr.	1972-2nd qtr.
F-7 2nd Atlantic	1976-4th qtr.	--
Indian	--	1974-3rd qtr.
F-8 Atlantic (Replacement)	1978-2nd qtr.	--
System In-Orbit Spare	--	1974-4th qtr.
F-9 2nd Atlantic - Fail	--	1976-4th qtr.
F-10 2nd Atlantic	--	1977-1st qtr.
F-11 Atlantic (Replacement)	--	1978-2nd qtr.

Comparison of the Two Programs

Number of Satellites

	Minimum Program	Maximum Program
Operational	4	4
Replacement (in 1978)	1	1
In orbit-spaces	1	3
Failures	2	3
TOTAL	8	11
TOTAL INVESTMENT	$246 million	$308 million

INTELSAT RATE PROFILE TO 31 DECEMBER 1971

(Values in $000's)

(Based on Minimum Program)

	1967 $	1968 $	1969 (b) $	1970 (b) $	1971 (b) $
System Costs					
Operating & Maintenance	5,230	7,506	13,181	13,840	14,532
Depreciation	19,172	13,026	24,369	15,809	22,406
Total Operating	24,402	20,532	37,550	29,649	36,938
Average Net Investment Per Year	58,182	75,563	96,705	121,250	148,864
Return on Above at 14%	8,145	10,579	13,539	16,975	20,841
Total Revenue Requirement (incl. Return)	32,547	31,111	51,089	46,624	57,779
Mean Units (1969-71 at 85% of Data Base)	Not Applicable	Not Applicable	2,395 (a)	4,364	5,787
ALTERNATIVE A					
Rate Profile	$20,000	$20,000	$20,000	$16,000	$10,000
Revenue (Actual 1967 and 1968)	16,736	28,738	47,900	69,824	57,870
Percentage Return Realized in Year	(13.2)	10.9	10.7	33.1	14.1
Surplus/Deficiency in Year Relative to 14% Return	(15,811)	(2,373)	(3,189)	+23,200	+ 91
Surplus/Deficiency Carried Forward	(15,811)	(18,184)	(21,373)	+ 1,827	+ 1,918
ALTERNATIVE B					
Rate Profile	$20,000	$20,000	$20,000 (c) $16,500	$16,500	$10,000
Revenue	16,736	28,738	45,142	72,006	57,870
Percentage Return Realized in Year	(13.2)	10.9	7.9	34.9	14.1
Surplus/Deficiency in Year Relative to 14% Return	(15,811)	(2,373)	(5,947)	+25,382	+ 91
Surplus/Deficiency Carried Forward	(15,811)	(18,184)	(24,131)	+ 1,251	+ 1,342
ALTERNATIVE C					
Rate Profile	$20,000	$20,000	$20,000 (d) $13,000	$13,000	$13,000
Revenue	16,736	28,738	42,384	56,732	75,231
Percentage Return Realized in Year	(13.2)	10.9	5.0	22.3	25.7
Surplus Deficiency in Year Relative to 14% Return	(15,811)	(2,373)	(8,705)	+10,108	+17,452
Surplus/Deficiency Carried Forward	(15,811)	(18,184)	(26,889)	(16,781)	+ 671

NOTES:

(a) 1607 unit years to 31 September and 788 unit years from 1 October.
(b) Excludes Revenues from TV and occasional use.
(c) $20,000 to 1 Oct.; $16,500 from 1 Oct.
(d) $20,000 to 1 Oct.; $13,000 from 1 Oct.

REVENUE REQUIREMENT PROFILE 1969/78

(Values in $ million)

INTELSAT IV MINIMUM PROGRAM (1 IN-ORBIT SPARE)

	1969 $	1970 $	1971 $	1972 $	1973 $	1974 $	1975 $	1976 $	1977 $	1978 $
Investment in year	53.9	35.2	58.2	6.0	-	12.9	55.1	12.6	-	12.6
Net Average Investment	96.7	121.2	148.9	154.0	126.1	105.4	116.7	125.2	103.2	83.1
Operating & Maintenance	13.2	13.8	14.5	15.2	16.0	16.8	17.7	18.6	19.5	20.5
Depreciation	24.4	15.8	22.4	30.7	31.1	23.1	22.3	28.6	28.0	24.7
Total Operating	37.6	29.6	36.9	45.9	47.1	39.9	40.0	47.2	47.5	45.2
Return (at 14%)	13.5	16.9	20.8	21.6	17.7	14.8	16.3	17.5	14.4	11.6
Revenue Requirement	51.1	46.5	57.7	67.5	64.8	54.7	56.3	64.7	61.9	56.8
Traffic Units (at 85% of Data Base)	2,395	4,364	5,787	6,966	8,054	9,190	10,648	12,154	13,780	15,797
Revenue Requirement per unit (in $000)										
with return	$21.3	$10.7	$10.0	$ 9.7	$ 8.0	$ 6.0	$ 5.3	$ 5.3	$ 4.5	$ 3.6
without return	$15.7	$ 6.8	$ 6.4	$ 6.6	$ 5.8	$ 4.3	$ 3.7	$ 3.9	$ 3.4	$ 2.9

INTELSAT IV MAXIMUM PROGRAM (3 IN-ORBIT SPARES)

Investment In Year	55.2	40.5	74.7	27.0	9.2	40.1	8.8	19.1	21.2	12.6
Net Average Investment	97.0	124.8	163.1	183.2	161.6	149.5	140.7	120.9	106.1	88.5
Operating & Maintenance	13.2	13.8	14.5	15.5	16.4	17.3	18.6	19.1	20.1	20.8
Depreciation	24.4	15.8	22.8	38.6	40.8	32.8	33.7	34.0	35.9	33.3
Total Operating	37.6	29.6	37.3	54.1	57.2	50.1	52.3	53.1	56.0	54.1
Return (at 14%)	13.6	17.5	22.8	25.7	22.6	20.9	19.7	16.9	14.8	12.4
Revenue Requirement	51.2	47.1	60.1	79.8	79.8	71.0	72.0	70.0	70.8	66.5
Revenue Requirement per unit (in $000)										
with return	21.4	10.8	10.4	11.5	9.9	7.7	6.8	5.8	5.1	4.2
without return	15.7	6.8	6.4	7.8	7.1	5.4	4.9	4.4	4.1	3.4

DRAFT

Domsat
8/13/69

Dear

The Administration is reviewing alternative policies for the introduction of satellites to domestic commercial communications. Our objectives are to assure timely and full benefit to the public of satellite technology potentials and to assure maximum learning about the problems and possibilities of satellite services in domestic applications.

We are aware that _____ has had a continuing interest in this subject. While we have reviewed the public record of the last several years, your current ideas and information would be a useful addition to our review. I would therefore like to invite you to submit any information or comments you feel would be helpful to our working group. We expect to complete our review about October 1.

Since the Federal Communications Commission is responsible for authorizing specific operational systems, we will not be concerned with specific corporate proposals or the details of system designs. Rather, our focus will be on the economic and institutional structure of the industry, the relationships between competition and regulation, and how new uses and services can be encouraged for public benefit.

Attached are some of the issues we will be considering that you may wish to use, in part, in organizing your comments. I look forward to hearing from you.

Sincerely,

CTW

MEMORANDUM OF CALL

TO: Eva

☒ YOU WERE CALLED BY— ☐ YOU WERE VISITED BY—

Mr. Gabel

OF (Organization)

☐ PLEASE CALL → PHONE NO. CODE/EXT.

☐ WILL CALL AGAIN ☐ IS WAITING TO SEE YOU

☐ RETURNED YOUR CALL ☐ WISHES AN APPOINTMENT

MESSAGE

Charington no longer in Domsat area. Secr Brown now in chg Richard L. Beam coming

RECEIVED BY	DATE	TIME
RM	8/14	

STANDARD FORM 63
REVISED AUGUST 1967
GSA FPMR (41 CFR) 101-11.6

GPO : 1969—c48—16—80341-1 332-389

63-108

DRAFT 8/14/69
(Olson)

NATIONAL POLICY ISSUES

DOMESTIC COMMERCIAL SATELLITE COMMUNICATIONS

* *

CONCEPTUAL FRAMEWORK

There will be abundant opportunities available to American society during the 1970's to make practical uses of our achievements in space exploration. For example, a bold, imaginatively conceived and aggressively conducted effort toward domestic applications of satellite communications might provide enhanced telecommunications services throughout the nation by private enterprise supported by the Government. The successful accomplishment of such a dynamic undertaking could provide increased benefit to the public and would be in the national interest.

* *

(1) Benefit to the Public

(a) Are there discernable trends in the needs (qualitative and quantitative) of users for telecommunications services which justify utilization of satellite communications in domestic applications?

(b) Are forecasts for new and unique practical applications technically feasible, operationally compatible and economically viable?

(c) Can the potential of satellite communications technology be exploited commercially in realizing enhanced telecommunications and benefit to the public?

(d) What should the United States do to assure full benefit to the public of the economic and service potential of satellite communications technology?

(2) Evaluation of Potential Applications

(a) What kind of near-term program approaches might be used to obtain meaningful information about the potentials, impediments and problems associated with the use of satellite communications in the Domestic scene?

(b) What opportunities will be afforded the users of telecommunications through development of communication satellite technology that would be impaired by its absence?

(c) How should the United States structure a program to insure maximum learning in all sectors of society with respect to the technical, operational and economic factors in an actual satellite communications applications environment?

(3) Developing New Markets

(a) Is the general trend of satellite communications technology advances likely to be sustained? And how does this trend related and compare to the advances of terrestrial communications technology?

(b) What research and development projects need to be pursued by the public and private sector in achieving an orderly and timely introduction of technological innovations into practical uses for society?

(c) How should the United States foster and encourage more vigorous technological and marketing innovations among communications entities in the development of new and expanded markets for telecommunications services?

(4) Government Support and Regulation

(a) What areas of Government support are required in achieving the objective of assuring full benefit to the public of the economic and service potential of satellite communications technology?

(b) Are there any structural arrangements which would promote competition while at the same time assuring positive economic and service benefit to the public?

(c) What discretionary authority rests with the Federal Communications Commission, consistent with its statute, to alter its conventional regulatory focus and recognize the impact of competitive market forces in supplementing the regulatory process.

(d) Are there any practical means for effecting reform in the Regulation process which would promote the development of advanced technology and markets by the private sector?

8/27/69

Dr. Russell Drew Office of Science and Technology Room 285 - EOB Washington, D. C.	(103) 3570	395-3570
Dr. Thomas Moore Council of Economic Advisers Room 327 EOB Washington, D. C.	(103) 5080 (temporary - 5040)	395-5080
Mr. William Morrill Bureau of the Budget Room 10009 New EOB Washington, D.C.	(103) 4684	395-4684
Col. Ward Olsson Office of Telecommunications Management Room 750 1800 G Street, N. W. Washington, D. C.	5190	395-5190
Chairman Rosel Hyde Federal Communications Commission Room 814 1919 M Street, N. W. Washington, D. C. 20554		632-6336
Mr. Bernard Strassburg Federal Communications Commission Room 514 1919 M Street, N. W. Washington, D. C.		632-6910
Mr. William Watkins Federal Communications Commission Room 714 1919 M Street, N. W. Washington, D. C.		632-7060
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ALTERNATIVES FOR INTERIM POLICY ON DOMESTIC COMMUNICATIONS SATELLITES

There exists a wide range of possible alternatives which are possible as an interim policy for the development of domestic communication satellite services. Five of these representative alternatives are outlined below. They differ in certain major respects: (a) The type(s) of system which would be encouraged; (b) The extent and freedom of entry; and (c) The degree of regulatory control to be exercised. The alternatives discussed below were selected for their internal coherence in regard to these three specific features. However, it should be apparent that the separate features can be permuted in different arrangements.

Alternative 1: Open Entry, No Pilot Program

(a) Organization - Any entity would be free to install, own and operate satellite systems for competitive or complementary service, subject to national and international radio licensing restrictions and authorization to operate as a common carrier, as appropriate. The entities would compete in the provision of satellite and ground station service on a non-predatory basis.

(b) Technical - Privately financed experiments would be authorized to develop criteria for frequency sharing and for orbital slots. Permanent licensing would follow development of criteria. Responsibility for avoiding harmful interference during operations (or rendering compensation therefor) would fall on each operating entity.

(c) Participation - Open to any prospective user or carrier who foresees economic application and is willing to stand the financial risk.

(d) Government Role - FCC would exercise its statutory licensing authority and pass on the technical characteristics of proposals. Its rate and regulatory functions would recognize the uncertainties and high risk in this type of enterprise. NASA would provide technical advice.

(e) Plan Tenure - Indefinite. No need for pilot Market forces would generate permanent arrangements.

Alternative 2: Open Entry, Pilot Program

(a) Organization - Basically same as Alternative 1 except that NASA would serve as technical coordinator passing on compatibility of proposed systems, both special and multiple purpose.

(b) Technical - Project proposers would have wide discretion on design subject only to NASA technical review and coordination of use. NASA to contribute through ATS-type technical program.

(c) Participation - As in Alternative 1.

Govt

(d) Public Role - FCC to perform conventional licensing. Regulatory functions would recognize high risks of undertaking (e.g., permit accelerated depreciation, high rate of return) granting pricing latitude subject to avoidance of predatory pricing. NASA to provide technical coordination and advisory role.

(e) Plan Tenure - Set for fixed period. Thereafter, permanent operating arrangements to be determined.

Alternative 3: Controlled Multiple-Entry Pilot, 1st Option

(a) Organization - Two or more systems, one under common carrier auspices, with common management; one or more additional system(s) dedicated to special services (data processers, broadcasters, educators).

(b) Technical - Carriers responsible for design of own satellite and ground stations; Special purpose users responsible for their system; NASA to provide over-all technical coordination.

(c) Participation - Open to major entities, including users and common carriers.

(d) Government Role - FCC approves spectrum assignment and performs standard common carrier functions. NASA, as technical coordinator of dedicated system provides parallel experiments. Executive Branch provides systems analysis as basis for future organizational recommendations.

(e) Plan Tenure - A pilot program with ultimate ownership rights to be determined at conclusion of demonstration.

Alternative 4: Controlled Multiple-Entry Pilot, 2nd Option

(a) Organization - Essentially the same as 3 except that COMSAT would serve as system manager for multiple-purpose and special

purpose system(s). Proposers to submit plans and share costs pro rata.

(b) Technical - COMSAT to develop design with advice and approval of the FCC in response to proposals of interested parties. NASA to advise FCC of technical compatibility.

(c) Participation - Open to major entities, including users and common carriers.

(d) Government Role - FCC would exercise its statutory role in licensing of frequencies, review and approval of rate and service standards. NASA as technical advisor. Executive Branch to provide systems analysis as basis for future organizational recommendation.

(e) Plan Tenure - Same as Alternative 3.

Alternative 5: Single Pilot Project (FCC Proposal)

(a) Organization - A two-stage approach. First, development of technical-operational plan with interim ownership arrangements deferred to second stage. Permanent ownership arrangements deferred until completion of demonstration program. COMSAT to be system coordinator responsible to an advisory committee composed of major suppliers, users and operating carriers. Committee to be chaired by FCC Commissioner.

(b) Technical - Design developed through advisory committee although Commission favors single, multiple-purpose system.

(c) Participation - Open to designated major users, suppliers and operators.

(d) Government Role - FCC would exercise leadership through chairmanship of satellite advisory committee. It would provide the normal frequency licensing and regulatory functions while relying on NASA for technical review of proposals.

(e) Plan Tenure - Demonstration project of predetermined duration. Ownership rights and permanent working arrangements would be established upon conclusion of the pilot.

Handed out at
the meeting
on 8/15/69

AT&T
COMSAT
Western Union
GT&E

ABC
NBC
CBS
Ford Foundation
Corporation for Public Broadcasting

General Electric
IBM
Hughes
TRW Systems

Electronic Industries Association
Communications Workers of America
IBEW
National Association of Broadcasters
National Cable Television Association, Inc.

ITT World Com
RCA Globcom
Western Union International

University Computing Corporation

DRAFT 8/16/69

Dear _____:

The Government is considering alternative policies for the timely introduction of satellites to domestic commercial communications. Our objectives are to assure timely and full benefit to the public of satellite technology potentials and to assure maximum learning about the problems and possibilities of satellite services in domestic applications.

We are aware that _____ has had a continuing interest in this subject. While we have reviewed the public record of the last several years, your current ideas and information would be a useful addition to our review. I would, therefore, like to invite you to submit any information or comments you feel would be helpful to our working group. We expect to complete our work about October 1.

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Enclosed are some of the issues we will be considering. You may wish to use these, in part, in organizing your comments. I look forward to hearing from you.

Sincerely,

Clay T. Whitehead
Staff Assistant

Enclosures

August 15, 1969

Public Benefit

1. What specific services have you identified that would be made possible and economically feasible through satellite technology that are not now available?

2. What specific services now being offered have you identified that could be provided more effectively or more efficiently through satellite technology and what economic savings do you project?

3. What institutional, technical, and economic arrangements, taken as a whole, appear likely to assure full benefit to the public of domestic satellite potentials?

Maximum Learning

1. What information about technological capabilities and performance of satellite systems is needed to resolve uncertainties about the technical and economic feasibility of potential systems? Can this information be obtained best by further research, experimental trials, or a pilot operational system?

2. What information about operational uncertainties is needed?

3. What information about economic and market characteristics is needed?

4. Specifically, what information or technological developments are needed over the next few years with respect to tradeoffs between spectrum utilization, orbit location, and cost to permit maximum utilization of communications satellite capabilities?

Innovation

1. What Government policies would be most effective in promoting development of new telecommunications services and markets by the private sector?

2. What research should be carried on by the Government to encourage innovtation?

3. Given appropriate economic incentives and institutional arrangements, what new services, markets, or technologies could the private sector likely develop in the foreseeable future?

4. What institutional arrangements with respect to ownership and operation of communications satellites will offer the best balance between the rate of innovation and nondisruptive growth of the communications industry?

Degree of Regulatory Control

1. What type of economic and technical regulation is now clearly necessary for communications satellite service during the initial phases of domestic satellite communications?

2. Given your projections of the economic and technological potential of satellite services, what type of regulation appears most desirable for the long run?

3. Is it desirable to have regulatory policies with respect to telecommunications via satellite that are distinct from policies for terrestrial systems?

8/15/63

Names of White House Working Group given to

Leonard Zeidenberg
Tom Malia
Mr. Connor, Interstate Commerce Cmte.

8/15/69

THE WHITE HOUSE
WASHINGTON

Attached is a summary of filings with the FCC on the Domestic Satellite question as discussed at our meeting of August 15.

Domestic Satellite Inquiry, FCC Docket 16495

Background and Summary of Comments of the Parties

A. History of the Proceeding

1. The history of this proceeding dates from an application filed with this Commission September 21, 1965, in which the American Broadcasting Companies, Inc. (ABC), requested ". . . a satellite authorization in the Auxiliary Radio Broadcast Service for television broadcast distribution purposes." An opposition to the application was filed by the Communications Satellite Corporation (ComSat), to which ABC replied. The application was tendered under Part 74 of the Commission's Rules and Regulations and requested waiver of Parts 2, 21 and 74, as might be necessary. ABC proposed use of the frequency bands 3700-4200 and 5925-6425 MHz, for transmitting network programs from earth stations in New York and California, via satellite, to ABC-owned and affiliated stations throughout the United States, including Alaska, Hawaii, Puerto Rico and the Virgin Islands. ABC also proposed to provide facilities for the interconnecting of non-commercial educational television stations in those areas.

2. The application proposed new use of space communication techniques and presented novel questions of law and policy which would have to be resolved before any Commission action on the application could be taken. Accordingly, on March 2, 1966, the Commission returned the ABC application, without prejudice to appropriate refiling in light of the outcome of a public inquiry which was simultaneously instituted.

3. Because the application by ABC raised novel problems, the Commission believed that the public interest would be served by obtaining the views and comments of interested parties on a series of questions as a means of determining what further actions were warranted by the Commission. Therefore, the Commission adopted a Notice of Inquiry on March 2, 1966, in which it cited its statutory responsibility to study new uses for radio and generally encourage the larger and more effective use of radio in the public interest (Section 303 (g) of the Communications Act of 1934, as amended).

4. The March 2, 1966, Notice of Inquiry (31 F.R. 3507) invited comments on the following specific questions:

a. Whether, as a matter of law, the Commission may promulgate policies and regulations, looking toward the authorization of non-governmental entities to construct and operate communications satellite facilities for the purpose of meeting their private or specialized domestic communications requirements. This proceeding is not concerned with the question of whether communications common carriers may be authorized to construct and operate communication-satellite facilities for domestic purposes. (Parties submitting comments in this matter should do so in separate legal briefs);

b. The effect or impact of any such authorization upon the policies and goals set forth by the Communications Satellite Act and upon the obligations of the United States Government as a signatory to the Executive Agreement Establishing Interim Arrangements for a Global Commercial Communications Satellite System;

c. Whether, as a matter of policy, it would be in the public interest to grant such authorization considering:

(1) The amount of frequency spectrum now available for the communication satellite service under the Commission's Rules;

(2) The extent to which terrestrial facilities are or may be available to provide the services contemplated;

(3) The potential economic effects on common carriers; and

(4) The potential benefits (e.g., improved quality and reduced cost of service) which might result from the grant of such authorizations;

d. Is it technically feasible to accommodate the space service contemplated in light of the requirement:

(1) That the power flux density produced at the earth's surface in the band 3700-4200 Mc/s by emissions from a space station employing wide-deviation frequency (or phase) modulation not exceed -149 dbW/m^2 in any 4 kc/s band for all angles of arrival nor a total of -130 dbW/m^2 for all angles of arrival;

(2) That the power flux density produced at the earth's surface in the band 3700-4200 Mc/s by emissions from a space station employing other than wide-deviation frequency (or phase) modulation, not exceed -152 dbW/m^2 in any 4 kc/s band for all angles of arrival;

(3) That earth stations receiving signals from space stations in the band 3700-4200 Mc/s be so located with respect to the existing common carrier microwave complex in that band that they are not subjected to harmful interference from such terrestrial microwave systems;

(4) That transmitting earth stations in the band 5925-6425 Mc/s:

(a) Not exceed a mean effective radiated power of 45 dbW in any 4 kc/s band in the horizontal plane; and

(b) Not cause harmful interference to the existing common carrier microwave complex in the same band.

e. Other relevant matters to which the respondents wish to address themselves.

B. Filing of Initial Comments (August 1966)

5. On or before August 1, 1966, comments were filed by 19 parties. (See list of all parties filing in this proceeding in Appendix A) Several parties argued that this Commission has authority under existing legislation including the Communications Act of 1934, as amended, and the Communications Satellite Act of 1962, to authorize entities other than communications common carriers to establish and operate communication satellite services to meet their private or specialized needs. This position was supported by ABC; the American Telephone & Telegraph Company (AT&T); the Columbia Broadcasting System (CBS); Dow Jones & Company, Inc.; the Ford Foundation; ITT World Communications, Inc. (ITT Worldcom); the National Association of Educational Broadcasters(NAEB); the National Association of Manufacturers (NAM); and the National Broadcasting Company (NBC). Opposition to this view, based upon an interpretation of the two named Acts, was contained in comments of ComSat; GT&E; the Hawaiian Telephone Company; and Western Union Telegraph Co.

6. ABC and NBC challenged the adequacy of the facilities of existing carriers to meet present and foreseeable television network program distribution requirements -- a challenge disputed by AT&T. ABC proposed that it be authorized, individually or in conjunction with other commercial or non-commercial educational network organizations, to construct and operate (by joint venture or otherwise) communications satellite facilities for the purpose of transmitting network programs (commercial and educational) to affiliated and associated stations within the United States and its insular possessions. ABC is prepared to join with other entities to create a non-profit organization to construct and operate such facilities.

7. Several communications common carriers challenged the economic and technical viability and feasibility of privately owned systems, and presented a variety of policy considerations in support of their conclusion that private ownership and operation of domestic communication satellite facilities are not technically or economically feasible. On the basis of historical, economic, technical and policy considerations, AT&T, ComSat, Hawaiian, ITT Worldcom and Western Union Telegraph urged the Commission to find it in the public interest that domestic communication satellite service should be provided by a multipurpose,common carrier owned satellite system. ComSat, urging that the Commission was limited by the 1962 Act to authorizing the space segment of a domestic system to ComSat alone and the earth stations to ComSat and qualified carriers, attached its technical plan for meeting various domestic requirements. AT&T stated that it was engaged in studying possible domestic uses of satellites and in formulating plans where their use appeared to be advantageous. Western Union took the position

that joint undertakings by the carriers are possible and perhaps desirable, but urged that present authorizations should run to a particular carrier in those instances where that carrier is seeking to establish a system to meet its own needs.

8. A number of parties urged the Commission not to reach any decision at this time which would preclude consideration in the near future or eventual establishment of privately owned or specialized domestic communication satellite facilities. Several of the parties stressed the necessity of leaving a choice available to potential users as to how they may arrange to meet their domestic telecommunication needs. JFD Electronics Corporation (JFD) in its comments asked the Commission to expand the proceeding to investigate and provide for the possibility of a satellite-originated television broadcasting service in the upper part of the UHF band (channels 70-83). JFD contended that there is no Congressional intent in the Communications Satellite Act of 1962 to grant ComSat a monopoly over domestic satellite systems.

9. The Carnegie Commission on Educational Television (Carnegie) advised the Commission that it was studying educational television in every aspect and that it presently was studying alternative methods of program distribution, including possible use of satellites, and that discussions were in progress with the National Aeronautics and Space Administration concerning a communications satellite system designed for non-commercial television. The statement was filed to call this Commission's attention to the studies in progress, and to encourage this Commission to retain flexibility on the issues relating to educational television until the final Carnegie report would be published in late 1966 or early 1967.

10. The U.S. Department of Health, Education and Welfare (HEW) filed comments encouraging the Commission to consider authorization for non-governmental, non-common carrier entities to construct and operate communication satellite facilities. HEW perceived four major advantages from multiple authorizations: (1) provide the greatest versatility in meeting the broad range of public needs; (2) allow individual entities to make specialized arrangements where necessary; (3) allow for reaching smaller professional or public groups where significant educational gains can be made; and (4) permit the broadest possible continuing experimentation necessary for the quality and variety of programming necessary for (3). HEW noted that not all needs for which private systems could be used involved mass audiences.

The Ford Foundation Proposal

11. In addition to answering the questions posed by the Notice of Inquiry, the Ford Foundation submitted a model of a private satellite system to provide television transmission for both commercial and non-commercial programming. The proposal calls for creation of a Broadcasters' Non-profit Service Corporation (BNS), authorized by the Commission to establish communication satellite facilities for transmission of commercial and non-commercial television and radio programming. The corporation would be a joint effort of the commercial and non-commercial institutions engaged in broadcasting. BNS would provide free interconnection for educational stations via satellite and would generate from its commercial users substantial funds (estimated to approximate $30 million a year at first and perhaps twice that much within 10 years) for non-commercial programming, both national and regional. BNS could operate, according to Ford, either as a specialized common carrier or as a cooperative controlled by its commercial, non-commercial and instructional users.

12. In a letter submitting its comments, the Ford Foundation urged that "non-commercial television has unlimited potential, for human welfare and for the quality of American life" and that "nothing is more needed - for television itself as well as for the country - than a first-rate national non-commercial service." Pointing out that it has been in the past the largest single source of funds for non-commercial broadcasting, the Ford Foundation stated that this contribution - though large for it - has been much too small for the needs of non-commercial broadcasting. While the financial needs of educational television are widely recognized, the sources of needed funds for programming have been elusive. The Foundation continued:

> * * *We all want educational television to be properly funded. We do not want the Government to "pay the piper and call the tune." We are looking for an answer. And that is what makes the possibilities of satellites so extraordinarily important. Non-commercial television has two great needs: first, to become a true national network, at a cost it can afford - and second, to have the money for programming, at a wholly new level of excellence. Properly used a television satellite can meet both needs. By its natural economic advantage over long landlines, it can effectively eliminate long-distance charges as a determining element in network choices - commercial and non-commercial alike. And if in the case of commercial networks a major share of

these savings is passed on to the non-commercial programmers, then both problems are on the road to solution, and everyone is better off than he was before. This is not magic, or slight-of-hand. It is a peoples' dividend, earned by the American nation from its enormous investment in space.

13. It was proposed that the programming fund would consist of two-thirds of the difference in cost to commercial broadcasting between program transmission by BNS and toll line payments to terrestrial carriers, with allowance for continued use of some ground facilities. The Ford Foundation filing contains tables setting forth estimated costs of installation and operation for both an initial BNS-1 system (providing six commercial channels and five non-commercial channels in each of four time zones) and a more expansive BNS-2 system, larger by twenty channels. The Foundation did not contend that BNS would provide all of the funds needed for non-commercial programming or that its particular models were the only way to proceed. Rather than seeking immediate licensing action, the Foundation urged that its proposal be put forth for public comment and that the Commission take no action in the meantime to foreclose this possibility.

C. Issuance of Supplemental Notice of Inquiry

14. Reviewing the comments filed August 1, 1966, and cognizant of the needs of all interested parties for the potential use of satellites to provide domestic communication services, the Commission considered it necessary in the public interest to expand the initial scope of this proceeding and to invite comment on the Ford Foundation proposal. In addition, it was found that responses to the initial Notice of Inquiry were not fully responsive to the technical questions set forth in the initial Notice. Accordingly, on October 20, 1966, the Commission adopted a Supplemental Notice of Inquiry setting forth the following matters for consideration by interested parties (31 F.R. 13763):

a. The Commission desires to have, to the extent they are available, descriptions, from existing carriers responding to this inquiry, as well as other entities intending to seek authority to provide common carrier services, general or specialized, of their plans for using communication satellite facilities to meet domestic needs; and

b. Whether, as a matter of law, there is any restriction on the Commission's power to authorize any communications common carrier or carriers to construct and operate communications services;

c. Assuming legal authority, under what circumstances should the Commission issue such authorizations, and to whom (one carrier, more than one carrier, two or more carriers jointly) having due regard for, among other things:

(1) The comparative advantages of communication satellites and other communication media in meeting domestic communications needs;

(2) The effects on charges for, and quality and adequacy of, present and future public communications services;

(3) The anticipated volume of domestic communications needs through 1980, and the portion thereof that can and should be satisfied through the use of communication satellite facilities in view of expected technological developments in all media;

(4) The comparative advantages and disadvantages of meeting domestic needs (i) through the facilities of the global system; or (ii) through a separate system or systems;

(5) The effect or impact of any such authorizations upon the policies and goals set forth by the Communications Satellite Act and upon the obligations of the United States Government as a signatory to the Executive Agreement Establishing Interim Arrangements for a Global Commercial Communications Satellite System.

d. Whether the type of entity and service contemplated by the Ford Foundation proposal may be licensed under present statutes, and, if not, the type of legislation that would be required.

(1) For the most part, comments filed thus far have not been fully responsive to the technical questions raised in the first Notice of Inquiry as to the adequacy of existing allocations to the communications satellite service or as to the electromagnetic interference to and from both present and projected operations of the global commercial communication satellite system and the

domestic fixed public services sharing the same frequency bands. The latter question is complicated further by the fact that the plenary assembly of the CCIR (Oslo, June 1966), has recommended changes in the technical criteria applicable to the power flux density delivered at the earth's surface from space stations. Therefore, pending resolution of the legal status of the Oslo criteria vis-a-vis those criteria now in the international Radio Regulations, interested parties, in responding to the questions raised in our prior notice and herein (which include the technical questions explicitlyset out in our prior notice) should direct their responses to both the present and Oslo criteria.

Additionally, to permit an evaluation of the impact from proposed systems, parties should indicate as fully as they now can the planned positioning of space stations on the equator for the system under consideration if equatorial stationary satellites are involved.

D. Filing of Supplemental Comments (December 1966)

15. By December 16, 1966, the Commission had received supplemental comments from 21 parties, 9 of which had not filed previously in this proceeding. Almost all non-carrier entities argued that, as a matter of law, the Commission has power under existing law to authorize entities other than carriers to establish a domestic satellite system. Arinc & ATA, ANPA, the Ford Foundation, NAEB and the three networks urged the Commission not to preclude the authorization of private systems. ComSat, GT&E, Hawaiian, the United States Independent Telephone Association (USITA) and Western Union contended that non-carrier entities could not be authorized under existing law; and AT&T, ComSat, GT&E, Hawaiian and USITA urged that private systems should not ,in any event, be authorized as a matter of policy. With respect to the Ford Foundation's BNS proposal, AT&T, ComSat, Hawaiian, USITA, CBS and NBC urged that additional legislation was required.1/ The Ford Foundation and NAEB commented that clarifying legislation might be desirable, but was not essential.

1/ In addition, AT&T challenged the Ford Foundations' estimates of construction and operating costs and questioned whether there would be any savings for non-commercial programming.

16. The joint Council on Educational Telecommunications submitted comments supporting favorable consideration by the Commission of some immediate action, such as proposed by Ford, to strengthen and foster development of communication facilities and services dedicated to educational purposes. Lloyd P. Morris, a private citizen filing individually, commented that a major effort must be made at the earliest possible time to improve and accelerate development of local facilities for program production and broadcasting for educational purposes. The National Educational Association and the National Educational Television and Radio Center (NET) supported the Ford proposal and encouraged study of, and immediate effort to resolve problems related to, the structure, activities and financial condition of program production and broadcast facilities of educational organizations and institutions.

17. The National Science Foundation and the National Foundation on the Arts and the Humanities submitted comments supporting consideration of the potential of satellites in educational, cultural and scientific activities and their encouragement and dissemination. They urged that, as a matter of policy, non-governmental entities other than carriers should be allowed to establish domestic communication facilities to meet private needs, particularly where such needs relate to educational, cultural and scientific activities.

Proposals for Domestic Systems

18. Four parties--ABC, AT&T, ComSat and the Ford Foundation--submitted proposals for domestic satellite systems. In brief, the proposed systems were as follows:

(1) The ABC Proposal

19. The ABC proposal, prepared by Hughes Aircraft Company, contemplates a special purpose 24 channel capacity satellite (with one spare in orbit and one in reserve) to provide 3 network signals and one ETV signal in each of 6 time zones (Eastern, Central, Mountain/Pacific, Alaska, Hawaii, and Puerto Rico/Virgin Islands). Each of the three networks would operate earth stations in the vicinity of New York and Los Angeles, which would be capable of transmitting one network signal to each of the six time zones and one ETV signal to the satellite. Receive terminals would be located in each of the television market areas served by one or more networks, each equipped occasionally to transmit one channel to the satellite for special events. There would also be 10 mobile

terminals for remote special events originations. The system would operate in the 4 and 6 GHz bands. It is estimated that the initial capital cost would be approximately $80 million, with annual expense in the neighborhood of $17 million, representing annual savings on program transmission costs to the networks of about $11 million. ABC asserts that the networks could voluntarily agree to donate a portion of their savings for ETV program production costs, but could not be required to do so. However, it is willing to make satellite transmission available to non-commercial stations without cost to them.

(2) The AT&T Proposal

20. AT&T submitted a comprehensive proposal for an integrated Space-Earth Communications System to meet anticipated growth in long distance communications requirements through 1980. This system would operate initially in Phase I in the 4 and 6 GHz region of the spectrum to facilitate an early establishment, but would in large part shift to 18 and 30 GHz in 1972 in order to obtain the exclusive frequency allocation (estimated to approximate 2800 MHz in the 18 GHz and 30 GHz regions, respectively) believed necessary to full development of a domestic system. The initial system, proposed for operation in 1969, would consist of two geostationary (synchronous) satellites, each with a capacity for 9600 voice circuits or twelve television channels.2/ There would be two receive-transmit earth stations located in the vicinity (within 10 or 12 miles) of New York City and Los Angeles (with a third satellite and Chicago vicinity earth station to be added in 1970 or 1971) and 73 receive-only earth stations and terrestrial links to meet the TV and ETV needs of 1969.3/

21. Beginning in 1972 AT&T anticipates use of a new generation of satellites with vastly increased capacity and new capability, in the 4, 18 and 30 GHz region of the spectrum, using pulse code modulation (pcm) for voice, and pcm and fm for television transmission. There would be four satellites (two in 1972, a third in 1975, and a fourth in 1976; the latter two replacing the three from the initial Phase I), each with capacity for 12 television channels and 30,000 voice circuits. There

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2/ AT&T also states that the initial system could have some 3200 two-way voice circuits, 8 full time television channels, and 12 occasional use television channels.

3/ The AT&T proposal does not contemplate satellite distribution service to the northeastern sector of the United States, where it asserts that economic and interference considerations call for terrestrial facilities only.

would also be 26 new earth stations in major metropolitan centers, to be used in conjunction with the 73 receive-only stations from Phase I. When fully employed the Phase II system would have capacity for 83,000 equivalent voice circuits, 27 television channels and 61 protection and/or occasional television channels. There would be provision for switching capability in the satellites, and for telephone split circuits (one way by satellite and return by terrestrial facilities, to alleviate the time delay problem). Although in Phase II all earth station operations would be discontinued in the 6 GHz band, the 4 GHz band would continue to be used for television distribution outside of the Northeastern portion of the United States. 4/

22. AT&T estimates that the initial system in 1969 would require an investment of approximately $104 million, with an additional $339 million by 1980. It states that continuing to meet these requirements through terrestrial facilities alone would require an estimated investment of $183 million in 1969 and $538 million by 1980. 5/ AT&T takes the position that any savings should be reflected in the rates charged the general public for common carrier services. It asserts that support of non-commercial television should come from general tax revenues.

4/ Protection against rain attenuation would be provided by space diversity; i.e., each earth complex would consist of two earth stations separated by at least 10 miles and linked by a high-capacity terrestrial system. During sun transit, receiving stations would be interconnected to stations outside the transit area using terrestrial protection facilities. With respect to use of the 17.7-19.3 and 19.4-19.7 GHz bands for transmission of telephone signals (or point-to-point television as distinguished from television distribution channels) from satellite to earth, AT&T estimates that these bands would be divided into one set of 15 channels, spaced 128 MHz and another set of 14 channels, also spaced 128 MHz but located between the first set. The two sets of channels would be used on adjacent antenna beams to reduce interference.

5/ AT&T estimates that the cross-over point where satellite transmission is economic in comparison to terrestrial facilities is approximately 1,300 miles for non-TV traffic.

(3) The ComSat Proposal

23. ComSat also proposed a phased system, to commence in 1969 at 4 and 6 GHz, and later to move into the higher frequencies after a period (perhaps five years) of technical research and experimentation in those frequencies. The initial implementation would involve one satellite (12 TV channel capacity), a large antenna facility on each coast and approximately 58 smaller antenna facilities including a few that are mobile. The Phase I system would gradually grow to 4 satellites, 6 large antenna facilities and approximately 173 smaller antenna facilities. In the early period, ComSat would include demonstrations and experiments to determine how satellite services can be most effectively and efficiently provided and to permit potential users to obtain knowledge as to practicable service arrangements which will meet their communications needs. In 1973, the system would be augmented by a few more large antennas, approximately 60 smaller antennas, and 20 antennas capable of transmitting in the bands above 10 GHz, if feasible. The third phase, in 1978, would include 4 satellites of substantially increased capacity and considerable utilization of transmitting and receiving facilities in the frequency bands above 10 GHz.

24. Although estimating that relative annual cost per channel would decline in the later models, with technological advances, ComSat did not set forth precise figures as to estimated costs for the various models. Like AT&T, it contends that the multi-purpose approach would effect economies over the specialized approach and asserts that "if domestic TV transmission were to be accommodated separately in the early days, general communications would suffer and the largest of all of the immediate 'peoples dividends' from the national space program would be severely prejudiced." According to ComSat, the "large block of the TV requirements supplies the necessary economic base for initiating the multi-service system."

(4) The Ford Foundation Proposal

25. The Ford Foundation, in a comprehensive filing comprising three lengthy volumes,6/ proposed two "much improved" systems, BNS-3 and BNS-4, which by comparison with BNS-1 and BNS-2 are "more reliable, more efficient and more economical in their use of the frequency spectrum."

6/ Volume I is addressed to policy and financial issues, Volume II to legal issues, and Volume III to the technical characteristics and costs of BNS-3 and BNS-4, interference problems and adequacy of spectrum space. Included in the Foundation's comments are studies by: Joseph A. Pechman, Brookings Institute, on possible sources of tax revenues for non-commercial broadcasting; Professor Wilbur Schramm, Stanford University, on

(continued on next page)

By moving to larger satellites lifted by larger launch vehicles (an Atlas-Uprated Agena or a Titan 3B-Agena), the Ford Foundation's designer was able to propose satellites of greater power and sophistication, each of them carrying 24 channels that can be beamed sharply and powerfully at selected time zones of the United States. The system would include service (omitted from BNS-1 and BNS-2) to Alaska, Hawaii, Puerto Rico and the Virgin Islands. The BNS-3 system would have two satellites, and BNS-4 would have three; either system would have 233 earth terminals of which 10 would be mobile.

26. The Ford Foundation estimates that BNS-3 would have an initial capital cost of $101.3 million and an annual cost of $22.8 million. BNS-4 is estimated to have an initial capital cost of $115.8 million, and an annual cost of $31.8 million. The Ford Foundation states that these cost estimates include all commercial, non-commercial and instructional requirements, and necessary microwave and cable links. The present cost of program transmission by terrestrial common carrier facilities is $65 million, expected to increase in the 1970's. The Ford Foundation estimates that by 1970, BNS-3 could replace $55 million (plus $5 to $10 million for a fourth network), leaving potential savings of $31.2 - $36.2 million. These figures represent potential savings, not revenues - which the Ford Foundation anticipates will be larger because the economies of satellite transmission will generate business.

27. The Ford Foundation states that BNS-3 and BNS-4, like their predecessors, are still only models open to criticism and subject to improvement. It mentions the possibility of a joint use of facilities, citing TAT IV (AT&T et al., 37 F.C.C. 1151) and stating:

> The alternatives are not either a number of special purpose systems or a single multi-purpose system owned by a common carrier. There are other modes of

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6/ continued: instructional television; International Business Machines Corp., on potential interference; cost studies by Hughes Aircraft Corp. and Philco-Ford Corp.; and a study entitled "Communications Rates and Integrated Communications Systems" by Dr. Leland Johnson, indicating how lower costs of satellite transmission would be reflected in rates if there were a common carrier system. Dr. Johnson concludes that the savings are likely to be absorbed and passed on to users, if at all, in amounts too small to be noticed. The Ford Foundation filing also includes a review of non-commercial and instructional television in other countries.

organization. If there are substantial cost advantages in joint use of some part of the facilities of a television satellite system - on the ground or in space - for telephone and date transmission, there is no reason why that should not be done. Joint use of facilities will undoubtedly require foresight in planning and designing the satellite system to insure flexibility; it will also require ingenuity in developing joint uses or forming joint ownership arrangements. We believe, however, that national economic tradition, the heavy national investment in space, the bright promise of satellite technology and the compelling needs of non-commercial and instructional television obligate us to look beyond traditional responses, as the Commission has done before.

(5) The Ford Foundation Demonstration Program.

28. The Ford Foundation noted that a number of questions had been raised concerning the feasibility of the Ford Foundation's proposal and ComSat's technical plan and indicated its understanding that serious thought was then being given by others to the possibility of launching a test satellite. The Ford Foundation took the position that a pilot demonstration program should be conducted by the National Aeronautics and Space Administration (NASA) as program manager, although in cooperation with other federal agencies (including HEW, FCC, DTM, DOD, and the National Bureau of Standards of the Department of Commerce) and all interested private parties including the carriers, the commercial networks, commercial and non-commercial stations, ComSat, the satellite system manufacturers, and the private foundations concerned with public and instructional broadcasting. The Ford Foundation proposed further that, in any event, a pilot demonstration program should not be commenced before April 1968, in order to permit the making of necessary national policy decisions on the issues involved in use of satellites for domestic purposes.

29. The Ford Foundation urged that existing programs and existing spacecraft should be used wherever possible, and modified as required, both for testing and pilot operations. Pointing out that NASA is already engaged in a testing program with its Application Technology Satellite Series (ATS) and is therefore in a position to make a swifter beginning, the Ford Foundation asserts that these satellites could be could be used for interference testing and for early pilot operations of non-commercial and instructional television through satellites. It also claims that interference measurements can begin without satellite through mobile vans and aircraft equipped to make measurements around existing terrestrial facilities and a transportable prototype earth

terminal sited near such facilities. If interference measurements and pilot operations cannot ride "piggy back" on an existing program then, the Ford Foundation states, it may be necessary to undertake design of a new satellite, with a 6 - 8 TV channel capability, to transmit signals in two beams, one to the eastern half of the United States and the other to the western half.

30. Whether the "piggy back" approach is used or a new satellite design proves necessary, the Ford Foundation states that the following ground equipment would be useful for conducting pilot operations:

2 network terminals with transmit/receive capability
6 affiliate terminals with transmit/receive capability
2 mobile terminals with transmit capability
18 mobile terminals with receive capability
20 remote schoolhouse terminals with receive capability

The Ford Foundation contemplates that the first three types of terminals would be primarily used by commercial and non-commercial television networks in the production and distribution of programs, and in testing various network configurations. One of the network affiliated terminals would be used on a time-shared basis to originate instructional programs. The 18 mobile receiving terminals would be used for instructional television purposes to demonstrate satellite program distribution to non-commercial stations and to classrooms for instructional use. The 20 schoolhouse terminals would be so placed as to evaluate a wide-area operational direct-to-school transmission system. 7/

31. The network terminals would be located in New York and Los Angeles, and the affiliate terminals would be used by the networks to feed established regional networks. Each terminal would simultaneously

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7/ According to the Ford Foundation, all 20 schoolhouse terminals would be placed at schools in a single geographical region. They would remain there for periods of a year or more, in order to integrate the programs they provide into the school curricula. Access to the available channel or channels could be time shared between state educational entities transmitting programs only to schools in their respective states and a regional body organized to test the feasibility of cooperation on a wider scale.

serve all networks, including non-commercial stations. The two mobile transmitting terminals would be used by networks at points of remote program origination, relaying these programs via the satellite. An instructional television demonstration and evaluation program would occupy one or two satellite channels and would require 18 mobile receiving terminals and the 20 schoolhouse terminals. Each mobile terminal would be a complete, self-sufficient television demonstration system consisting of an antenna, a dual-channel receiver, a video distribution system, and approximately 50 color television monitors to be placed in classrooms and auditoriums. Travelling with the terminals would be an operations team consisting of two technicians to install, operate, and maintain the equipment and several trained demonstrators to work with teachers and administrators.

32. The Foundation recognizes that a program of this nature is outside the scope of NASA's presently planned activities and that generous financial support by Congress would be vital. While not prepared to operate or manage anything in this field, Ford would consider how it might contribute to:

> Training personnel in non-commercial networking operations through the satellite.
>
> Training teachers and educational administrators in the more effective use of instructional television.
>
> Making available programs for both non-commercial and instructional television.

E. The Carnegie Commission Report

33. In January 1967, Carnegie issued the report to which it had referred in earlier comments filed in this proceeding. Carnegie presented a finding that "a well-financed and well-directed educational television system, substantially larger and far more pervasive and effective than that which now exists in the United States, must be brought into being if the full needs of the American public are to be served. This is the central conclusion of the Commission and all its recommendations are designed accordingly." (Carnegie Report, Bantam, pg. 3.). Specifically, Carnegie said:

> (1) We recommend concerted efforts at the federal, state, and local levels to improve the facilities

and to provide for the adequate support of the individual educational television stations and to increase their number.

(2) We recommend that Congress act promptly to authorize and to establish a federally chartered, non-profit, non-governmental corporation, to be known as the "Corporation for Public Television." The Corporation should be empowered to receive and disburse governmental and private funds in order to extend and improve Public Television programming. The Commission considers the creation of the Corporation fundamental to its proposal and would be most reluctant to recommend the other parts of its plan unless the corporate entity is brought into being.

(3) We recommend that the Corporation support at least two national production centers, and that it be free to contract with independent producers to prepare Public Television programs for educational television stations.

(4) We recommend that the Corporation support, by appropriate grants and contracts, the production of Public Television programs by local stations for more-than-local use.

(5) We recommend that the Corporation on appropriate occasions help support local programming by local stations.

(6) We recommend that the Corporation provide the educational television system as expeditiously as possible with facilities for live interconnection by conventional means, and that it be enabled to benefit from advances in technology as domestic communications satellites are brought into being. The Commission further recommends that Congress act to permit the granting of preferential rates for educational television for the use of interconnection facilities, or to permit their free use, to the extent that this may not be possible under existing law.

(7) We recommend that the Corporation encourage and support research and development leading to the improvement of programming and program production.

(8) We recommend that the Corporation support technical experimentation designed to improve the present television technology.

(9) We recommend that the Corporation undertake to provide means by which technical, artistic, and specialized personnel may be recruited and trained.

(10) We recommend that Congress provide the federal funds required by the Corporation through a manufacturer's excise tax on television sets (beginning at 2 percent and rising to a ceiling of 5 percent). The revenues should be made available to the Corporation through a trust fund.

(11) We recommend new legislation to enable the Department of Health, Education, and Welfare to provide adequate facilities for stations now in existence, to assist in increasing the number of stations to achieve nation-wide coverage, to help support the basic operations of all stations, and to enlarge the support of instructional television programming.

(12) We recommend that federal, state, local, and private educational agencies sponsor extensive and innovative studies intended to develop better insights into the use of television in formal and informal education.

Carnegie did not submit any immediate or developed proposal for implementation of an operating satellite system.

F. The President's Message of February 28, 1967, and the Public Broadcasting Act of 1967

34. The President's 1967 message to Congress on Education and Health in America indicated the Administration's desire to have Congress adopt, at its current session, legislation which would establish a program for implementation of the Carnegie Commission's Report. In recommending

the establishment of a Corporation for Public Television," the President stated (113 Cong. Rec., daily ed. S. 2679):

> "One of the Corporation's first tasks should be to study the practicability and the economic advantages of using communication satellites to establish an educational television and radio network. To assist the Corporation, I am directing the Administrator of the National Aeronautics and Space Administration and the Secretary of Health, Education and Welfare to conduct experiments on the requirements for such a system, and for instructional television, in cooperation with other interested agencies of the Government and the private sector."

Legislation on the matter was promptly introduced in the Senate by Senator Warren G. Magnuson and has since been enacted, Public Broadcasting Act of 1967 (Public Law 90-129, 76 Stat. 65). The Public Broadcasting Act of 1967 provides in Section 396 (h) that:

> Nothing in the Communications Act of 1934, as amended, or in any other provision of law shall be construed to prevent United States communications common carriers from rendering free or reduced rate communications interconnection services for non-commercial educational television or radio services, subject to such rules and regulations as the Federal Communications Commission may prescribe.

The Public Broadcasting Corporation has also been established.

G. Filing of Reply Comments (April 1967)

ComSat proposes Pilot Demonstration Program

35. On or before April 3, 1967, the Commission received reply comments from 19 parties, four of which were filing in this proceeding for the first time. With one exception, ComSat, there were no notable changes in the positions of the parties which has filed comments or supplemental comments. ComSat presented a new proposal for a pilot demonstration program, which the Corporation considers consistent with the President's message of February 28, 1967, to provide a pilot experience in non-commercial as well as commercial television and in general domestic communication by satellite at the earliest possible time. Specifically, ComSat proposes: (1) to participate in experiments, conducted under government auspices, concerning the

practicality and economic advantage of using communications satellites to inter-connect educational television and radio stations; (2) to develop under the auspices of the Commission and in conjunction with other appropriate entities, including governmental entities and common carriers, a program to demonstrate communication satellite operations for a variety of services, including commercial and non-commercial broadcasting, voice and record transmissions; and (3) to expedite the program, under which ComSat would provide the necessary capital, subject to Commission approval, without prejudice to the question of ultimate ownership, construct a minimum number of earth stations, and procure appropriate satellite launches to provide one television channel free in each of two time zones for educational television networking, with additional capacity for experiments and demonstrations to prove and exhibit potential advantages of satellite services for non-commercial television and radio as well as for other services. Capacity in the model would also be available for commercial television transmission and transcontinental common carrier service, to provide a financial foundation for the model. The demonstration facilities would be so designed that they would be absorbed eventually in a long term complex for the furnishing of commercial service after the termination of their use for demonstration purposes.

36. ComSat proposed that the Commission adopt a statement of interim policy approving the principles of a pilot demonstration program set out in such filing; call a conference of appropriate interested persons and entities (interested carriers, educational and commercial broadcasters, HEW, NASA, DTM, NET, the Ford Foundation, etc.) to plan such a program; and subsequently, on the Commission's own motion or on application by a party, take action to establish a pilot demonstration model system. ComSat noted that all technical proposals made by the parties contemplated certain common minimum requirements needed in the long-run for a single multi-purpose system or for one or more dedicated systems. Its model system would be designed to permit eventual absorption in a long-term complex for commercial service. It described the initial objective of the program as making non-commercial television and general communications by satellite available throughout the Pacific and Rocky Mountains time zones, with direct access from New York. Commercial television and general communications services would be accommodated at commercial rates, and one television channel in each time zone would be made available without charge for educational broadcasting. Capacity would be provided for experiments, particular demonstrations, and long-distance services. ComSat urged that steps now be taken to assure that needed facilities will be available for experiments, demonstrations, and the described services.

37. On July 26, 1967, ComSat elaborated on its proposal in a response to a letter from the Commission. The ComSat pilot program, contemplated to be completed during the two years 1970-1971, would use two satellites, each with a five year life, in synchronous orbit between 70° and 120° W. Longitude, tentatively 97° and 103° W. Longitude. Their coverage would include parts of Canada and Mexico as well as the Mainland United States. Radiation outside the United States would not (according to ComSat) cause harmful interference with terrestrial radio facilities. The satellites each would have a capacity of twelve color television channels, or 21,600 voice channels when used with 85 foot antennas,or 9600 voice channels when used with 42 foot antennas. Television, voice, data, telegraph, etc., could be simultaneously transmitted. Normally, each satellite would be used for both full-time and occasional service, but if one failed, the other could handle all full-time service needs. The satellite would transmit at 3700-4200 MHz and receive in the 5925-6475 MHz band.

38. ComSat proposes a send/receive earth station near New York City and another near Los Angeles, each with two 85 foot antennas, each antenna being capable of using the full capacity of one satellite. It proposes two send/receive earth stations, each with a 42 foot antenna, one in the northwest and one in the southeast, which can transmit and receive multi-point message channels and color television. The proposal also calls for thirty receive only stations, with 25 to 32 foot antennas, in the Pacific and Rocky Mountains time zones. These zones are considered by ComSat as best suited for demonstrating the distribution capabilities of satellites, because of large distances, sparse population, and limited available terrestrial facilities.

39. This system configuration is based on ComSat's estimate of current demand, as derived from its talks with certain major users; it states, however, that no facility would be constructed without reasonable assurance of economic use. Total investment is estimated at $57,700,000, of which $37,220,000 would be recovered over the five year period 1970-74. (ComSat anticipates, however, that the pilot program will have before then justified a follow-on program for wide area coverage.) Total revenue requirements, then, including an annual operating cost of $4,070,000 and 12 percent return on investment after taxes, start at $24,485,000 in 1970 and decline to $17,312,000 in 1974 (with a declining investment). The requirements over the entire 5 years are $104,428,000.

40. ComSat recognizes that all costs could not be recovered in the five year period, on the assumption that this would require non-competitive pricing. However, it proposes a multi-service system, with each service charge being related to its costs so far as possible.

There would, however, be capacity associated with two non-commercial television channels offered without charge. To the extent that costs are not recovered in the two year pilot program ComSat proposes that they be recovered in later years.

41. ComSat is willing to finance, own, and operate the earth stations itself, or to share in a divided ownership with appropriate carriers. Satellite ownership and operation would be in conformity with international obligations under the definitive Intelsat arrangements now being negotiated.

H. Supplemental comments on ComSat's pilot proposal (September 1967)

42. Since ComSat's proposed pilot demonstration program was presented for the first time during the final round of comments submitted on or before April 3, 1967, no other parties to the proceeding were provided an opportunity to study and respond to the proposal or to offer counterproposals. On August 14, 1967, the Ford Foundation filed with the Commission a petition for leave to file further comments on the ComSat proposal submitted March 31, 1967, and elaborated in July 1967. The Commission, desiring to assure full consideration and discussion of the relevant issues in the ComSat proposal, issued an order on August 29, 1967, inviting further comments from all interested parties on the ComSat proposal. Deadline for filing of such comments was set for September 18, 1967.

43. Twelve parties filed comments in response to the Commission's order. AT&T, Hawaiian Telephone Co., and GT&E favored early implementation of ComSat's pilot program. AT&T urged further that the earth stations be owned by the common carriers utilizing them to provide service to the public. Hawaiian maintained that users of the satellite system should be limited to the terrestrial carriers in all ordinary circumstances. ANPA, CBS, and Western Union Telegraph also supported ComSat's proposal, but cautioned against permitting ComSat to obtain a de facto position of dominance so as to prejudge a considered decision on the various issues pending before the Commission in this proceeding.

44. While agreeing on the desirability of a test program, NBC, ARINC and ATA questioned the advisability of an immediate acceptance of ComSat's proposal. ARINC and ATA felt that authorization would give ComSat a substantial "foot in the door" toward ultimate ownership of the system and questioned: (1) whether ComSat is legally qualified to provide domestic service, and (2) whether ComSat's capital resources are not precommitted exclusively to the global system. NBC urged that

a conference of interested government and industry parties precede any authorization, in order to give the Commission a more complete and considered basis than is now available on which to authorize a test program.

45. ABC and the Ford Foundation opposed the ComSat proposal. Both saw authorization as giving ComSat the inside track toward ultimate ownership and supported instead a test program conducted by a more disinterested entity such as NASA. Ford contended further that acceptance of the ComSat proposal would be an untimely prejudgment of the issues now being considered by the President's Task Force on Communications Policy (see infra, Section J), viz, whether a domestic satellite system should be generalized or specialized, and whether there should be more than one system. Ford also maintained that the ComSat proposal makes insufficient provision for the possibilities of satellite communications in the field of public television, both as a provider of free interconnection and as a source of protected program funds.

46. Ford further claimed in its September 1967 filing that there are other technical tests, less expensive and less time-consuming than the ComSat program, that can usefully be undertaken before a full-scale program costing tens of millions of dollars is warranted. Appended to this filing are two studies conducted by Stanford Research Institute (SRI) and Hammet & Edison (Hammet) setting forth a number of tests which they consider useful. Among other things Hammet states that it appears feasible to distribute television programming by satellite in the bands now allocated to the Television Auxiliary Broadcast Service without disrupting present use of these frequencies, and that the use of these bands would reduce congestion in the common carrier bands and result in considerably more efficient use of the spectrum than that now planned in the 4 and 6 GHz bands.

47. ABC Television Affiliates and CBS Television Network Affiliates, both filing for the first time in this proceeding, urged that broadcast stations should be allowed, individually or in groups, to own the ground receiving equipment necessary to provide television interconnection service to them by satellite.

I. ComSat Reply

48. On September 20, 1967, ComSat filed a response to the comments on its proposed pilot program, with a covering letter addressed to the Ford comments. ComSat observed that Ford's concern with funding public television leads it to underemphasize domestic communications in general, which the ComSat proposal would meet through a multi-purpose

system, and so give each experience in economic use of satellite and earth service facilities. Though ComSat notes it has provided for preferential rates to non-commercial broadcasting, it says it is not willing to make the networks a "captive treasury" for public television.

49. ComSat denies that the Task Force has pre-empted its proposal, or that such proposal locks it into a monopoly position. It feels that a prompt pilot scale demonstration is essential to test the responses of potential users of satellite communications - what facilities they require, how the traffic build-up takes place, and how commercial use can benefit non-commercial use. It recognizes that the results will not be available in the period of the Task Force work, but feels that the experience gained can be used to modify, verify or supplement the Task Force conclusions.

50. It further urges that nothing is precluded by its proposed program in that the facilities it proposes are as equally consistent with a special purpose as with a multi-purpose system, and the cost would be about the same. Although it recognizes that the use of frequencies above 10 GHz may become feasible in the future, it feels that it is bound to proceed in the 4 and 6 GHz bands at the present time, rather than deprive users of advantages in the meantime.

51. ComSat recognizes some of the tests proposed by Ford as being helpful, although it does not believe much can be done with any meaningful results within the Task Force time limits, or that such experiments are necessary to prove the feasibility of the pilot program. It does not view its pilot program and Ford's proposal for experimentation as mutually exclusive and stands ready to join in experiments with regard to the 4 and 6 GHz bands. It believes that it is practicable to use such bands and notes that AT&T, which has the most reason to fear interference, is supporting the pilot proposal along with Western Union.

J. Other Pertinent Background

52. The President's message of August 14, 1967, transmitting recommendations relative to world communications, states, inter alia, with respect to domestic communications satellite systems (H.R. Doc. No. 157, 90th Cong., 1st Sess., p. 6):

> The space segment of a communications satellite system is international by its very nature.
> -- A synchronous satellite occupies a permanent orbital position in the international domain of outer space.
> -- All satellites radiate electro-magnetic energy potentially capable of interference with other communications systems.

-- All satellites use the internationally regulated frequency spectrum.

In view of the international nature of satellite communications and our commitments under the INTELSAT agreement of 1964, we should take no action in the establishment of a domestic system which is incompatible with our support of a global system.

This does not mean that the United States - or any nation - will give up vital sovereignty over domestic communications. The flow of satellite communications - both domestic and international - is to and from ground stations owned by the individual nation or its representative. Each country will have to determine for itself whether it wants to use communications satellites for domestic purposes. It must be prepared to bear the expense of such satellite use, just as it will derive any revenues.

It is the space segment - not the ground station - that is of legitimate international concern. How should a nation utilize satellites for domestic communications purposes?

There are several possible choices:

-- A nation can lease circuits from an international INTELSAT satellite.
-- It could elect to operate a separate satellite for its own domestic use.
-- It could join with neighboring countries to operate a separate satellite.

53. The President further announced the appointment of a Task Force on Communication Policy to study and report on the following questions within one year (id. at pgs. 8-9):

-- Are we making the best use of the electro-magnetic frequency spectrum?
-- How soon will a domestic satellite system be economically feasible?
-- Should a domestic satellite system be general purpose or specialized, and should there be more than one system?
-- How will these and other developments affect ComSat and the international communication carriers?

54. The Inter-Governmental Agreement and Special Agreement of 1964 (T.I.A.S. No. 5646) establishing interim arrangements for the global commercial communications satellite system (INTELSAT) do not treat the matter of domestic satellite systems. Article IX of the Agreement provides for the negotiation of definitive arrangements for INTELSAT in 1969. The United States proposal for such definitive arrangements contains a provision for the establishment of separate satellites by a member of INTELSAT to meet its domestic needs. The proposal states, however, that "clearly the space segment of even a domestic satellite system is a matter of legitimate international concern, and no action should be taken in the establishment of a domestic system which is incompatible with the global INTELSAT system." The proposal further states that in order that legitimate international concerns would be fully protected, the Governing Body of INTELSAT would have to decide prior to the establishment of a domestic satellite system that:

a. The establishment of such facilities would be consistent with INTELSAT's proposed use of the frequency spectrum and orbital space, and

b. The proposed mechanism and techniques for control of these satellites were adequate, and the radiation emitted from the satellites would not cause harmful interference.

In February and March, 1969, an international conference was held in Washington, D.C., to begin negotiations on definitive arrangements, and is now scheduled to reconvene in November, 1969.

K. The GE Proposal

55. On February 19, 1969, General Electric Company (GE) sought leave to supplement its original filings with additional comments setting forth its present view of new and expanded communications services that might appropriately be provided via satellite. In the interest of a full record that might be of assistance in arriving at policy determinations, the Commission accepted the filing and accorded parties to the proceeding an opportunity for comment. GE states that in view of uncertainties as to the structuring of a domestic satellite system, it cannot in the exercise of a prudent business judgment undertake commitments of an investment or operational nature in the system it is proposing. Rather, it is making the conclusions drawn from its studies and research available in an effort to assist the Commission and stands ready to provide further technical and other data.

56. The GE proposal rests on its conclusion that "introduction of satellite communication technology into our domestic communications system can provide the means for a revitalization of the business usage of the record communications system in the United States," that it "offers a unique opportunity for the achievement of a repeatedly recognized basic legislative and administrative policy objective, i.e., the development of a balanced national communications system including not only the excellent voice switched network system provided by the Bell System but also a viable and effective truly competitive record communications alternative." While stating that consideration should be given to authorizing the proposed system to existing communications common carriers, GE suggests that a possibility equally worthy of a serious consideration would be authorization of an entirely new common carrier entity for the purposes it describes--"one not deterred by existing capital or other commitments in the present common carrier system."

57. GE's proposed system and services concentrate on areas of data and other record message point-to-point transmission that would not require the availability of complex switching arrangements. The basic array of proposed services is subdivided as follows:

(1) Multiple Access Digital Services (MADS)

a.) Record Services

b.) Remote Access Computer Services (RACS)

(2) Multiple Access Video Services (MAVS)

58. With respect to MADS-Record Services, GE states that record communications of the nature of Telex, TWX and Private Wire Systems could be provided much more economically via satellite, by eliminating most of the present hierarchy of switching on the terrestrial network, and thus would become available to a far greater number of users. It also contemplates a service designated as "Telemail" for business-to-business "transaction" mail (allegedly about 17% of all mail), which would ultimately be provided at rates comparable to postal service, but with instant delivery.

59. In the area of Remote Access Computer Services (RACS), GE states that a key service of the proposed system would be the provision of communications needed for computer-to-computer and computer-to-individual user purposes. This would involve not only communications for time-sharing computer facilities, but also provide communications capabilities for many other types of computer uses that do not involve time-sharing. GE also

asserts that the availability of nationwide "metropolitan area" access to time-sharing centers, regardless of physical location, should increase the practicability of nationwide data banks or library services provided from very large storage facilities in one location.

60. The proposed Multiple Access Video Services (MAVS) contemplates random assembled video networks for use by business, professional, government, educational and social organizations. A primary objective of the MAVS service would be to provide mobile ground stations for transmission, reception, or both. It is asserted that this would facilitate meetings, conferences, seminars and other face-to-face confrontations and save the time now spent on travel. The service provided could be simplex, half-duplex, or full-duplex video with duplex audio. GE foresees two additional video services: (1) a Public Video Exchange (PVX) to meet the requirements of any person or group that are insufficient to require a dedicated facility, in which case the subscriber would be required to go to the public studio; and (2) a Private Video Exchange for customers with large usage (e.g., the central office and a remote production facility of a large corporation, a central university and its extension facilities, state governments and their regional or county centers, etc.) in which case the ground facility would be located at the subscribers premises.

61. GE further states that the demands for data and video services would not utilize the full satellite capacity, and that extra transponders would be available for use by common carriers (such as telephone carriers) and private network users (e.g., broadcast networks, airline entities, etc.). It states that control of this portion of the satellite facilities would be with the user of these transponders, who would provide the related ground facilities.

62. The GE filing sets forth in some detail the estimated market potential and rates for the various proposed services, the basic technical and operational mode of the proposed system, technical characteristics of the satellite and other equipment, general system parameters, and the estimated cost structure. Rather than attempting to summarize GE's discussion and charts here, we refer interested persons to the GE filing itself. We do note, however, that GE contemplates use of frequencies in the 4 and 6 GHz bands; the use of one computerized "Routing Center," as director of system traffic for all ground facilities, which would perform the channel assignment, billing, TT&C, and system diagnostic maintenance functions; the standard use of 30-foot antennas in the proposed 175 earth stations; and the use of CATV cable and/or microwave links, as well as local telephone loops, to provide local interconnection with the satellite system facilities.

63. The estimated system costs for full implementation by 1980 are calculated to amount to approximately $321 million. This includes initial and continuing research and development costs of both satellite and earth facilities, and procurement of five satellites (assumed five year life) and boosters. The largest single item of investment would be earth facilities, including 175 earth stations, one routing center and other administrative facilities. Personnel requirement estimates range from 1300 people at the time of initial satellite launch to approximately 4,700 for full operational capability in 1980.

64. GE argues against authorization of a pilot or interim system, claiming that the uncertainty would prejudice its ability effectively and aggressively to advance new markets. It asserts that sound business judgments would require a reasonable degree of certainty concerning continuation of the system that would only be associated with a more permanent system. GE states that the justification for a pilot would depend primarily on an assumption that there are major technical uncertainties, which is contrary to the established technical feasibility of synchronous satellites for the pruposes it advances.

65. Comments on the GE proposal were filed by twelve parties on or before April 14, 1969. In general, non-carrier parties either commented favorably or took no position on the GE proposal, but requested prompt action by the Commission to encourage rapid development of some form of domestic satellite program. ABC states that the GE proposal does not exclude an additional, separate broadcaster system and urges expeditious authorization of such a system. While NBC believes a separate broadcaster system to be best, it would also support another system that could better serve the needs of program transmission users. It further urges that a demonstration program, utilizing existing types of equipment such as ATS or Intelsat I and II satellites and transportable earth terminals, should commence as soon as possible. The NAM considers the GE proposal to be an "excellent contribution." Aerospace Industries claims that the needs of aerospace companies are not now being met promptly and efficiently, and that an expansion of existing facilities is urgently needed. It asserts that any of the domestic satellite proposals in this Docket would be a welcome addition. Con Sumers, Inc. and TVC of California, Inc., commenting for the first time in this proceeding, state that domestic satellite facilities could be used for other video services (in addition to those proposed by GE) which would require encoding and decoding to ensure that the communication goes only to subscribers, e.g., subscription television and subscription services to the medical profession and small businessmen. It further claims that the prescription of uniform standards for transmission and reception equipment is essential if this potential is to be realized.

66. Common carrier parties were divided in their views on the GE proposal. ComSat adhered to the position that its pilot proposal is best and must include the network television market to be viable. However, ComSat states that if there should be customer demand for the types of services proposed by GE, these requirements could be accommodated in the pilot plan or at some later date. ITT Worldcom commends the GE proposal, but states that the services should be provided on a common carrier basis, by existing carriers, and that decisions as to ownership would be premature prior to formal applications containing adequate data. MCI approves of the GE proposal for new entry and expresses its continuing interest. WUI shares GE's concern that a domestic satellite system be utilized to its fullest potential, and urges that this would be best accomplished by a single multi-purpose system, owned by existing carriers--including ComSat and international carriers who would use a domestic system between gateway centers and satellite earth stations or cable terminals.

67. WU, GT&E and AT&T were critical of the GE proposal. All three assert that the proposed services are being, or could be, provided by terrestrial carriers and that the alleged cost advantages of satellite are unsupported. In the latter connection, they claim that GE's estimated costs are understated and fail to take account of local distribution and terminal costs. It is further urged that GE overemphasizes elimination of terrestrial switching steps, since terrestrial systems utilize direct routes where there is adequate volume and use switching to save costs between low-volume points and for alternate routing. AT&T claims that the GE traffic projections and estimated revenues are unrealistic and overly optomistic, in part because a preponderance of traffic would be short-haul and much would never leave the area served by a single earth station. AT&T further states that GE does not provide for restoration of facilities over alternative paths; if an earth station failed, the only alternative would be terrestrial facilities to another earth station and in the event of outage at the routing center, the whole system would be out. AT&T concludes that the GE proposal in its present form is too inadequate and incomplete to provide a basis for affirmative action. GT&E states that the concepts advanced are interesting and worthy of discussion, but that this proceeding is not an appropriate context.

68. More generally as a matter of policy, WU urges that the proposal for a new record carrier is not sound. It further states that a pilot is desirable to test economic factors, because the uncertainties are not technical, but economic. AT&T argues that the GE proposal rests on an erroneous assumption of a national policy in favor of competition in the common carrier field. It asserts that separate systems for voice and record would be "technically unsound, economically wrong and contrary to the interest of communications users in general."

69. Finally, on May 15, 1969, the Postmaster General filed comments on the "telemail" aspect of the GE proposal and its relationship to potential electronic transmission of domestic communications presently carried in the United States mail. It is stated that conceivably, upon ultimate refinement of the concept, all letter mail, or approximately 56.8% of all mail pieces, could be supplanted by a telemail system and that such a diversion would represent approximately 55% of revenues realized from domestic mail. The Postmaster General requested the Commission to consider the potential impact its decision might have upon the Postal System, and to fashion its decision so that the Post Office Department would not be precluded from acquiring its own electronic communication system at some future date or be restricted to dealing with a sole licensee.

Summary of Comments to C. T. Whitehead in regard to
Domestic Satellite Communications

The responses to the White House letter on the domestic communications satellite of August 19, 1969 are summarized below for (1) common carriers, (2) suppliers, (3) potential users and (4) other interested parties. The content of each response has been condensed under four captions: (a) the type(s) of system which should be permitted by public policy makers; (b) the extent and relative freedom of entry recommended; (c) the degree of regulatory control which should be exercised, and (d) general comments.

1. Common Carrier Responses

A. T. & T. Co

(a) Type of System - Any organization or group - either carriers or non-carriers should be permitted.

(b) Freedom of Entry - Authorization should be granted to any applicant subject to availability of frequency spectrum and orbital space, and the appropriateness of the planned use of the satellite service.

(c) Degree of Regulation - Conventional treatment since satellite and terrestrial facilities are merely alternative means to the same end.

(d) General - Recent company studies indicate satellite costs may be less favorable compared to landline costs than prior studies indicated. There is no need for further government funded research; the private sector can provide the needed effort.

General Telephone & Electronics

(a) Type of System - Under existing legislation non-common carriers cannot be authorized to operate domestic satellite facilities.

(b) Freedom of Entry - Commercial operations should be restricted to Comsat.

(c) Degree of Regulation - Traditional regulatory methods should apply.

(d) General - The shortage of spectrum will require rationing of frequencies. Employment of spectrum by private users would weaken the common carriers and result in an increase of rates to smaller users.

Comsat

(a) Type of System - Comsat is the only entity which has the capability and detachment to plan for and operate a domestic satellite.

(b) Freedom of Entry - Two-way ground stations should be controlled by Comsat, but may be owned by landline carriers as well. Discretion should be left with users of receive/ only ground stations as to whether he ownes this facility or relies on the satellite operator (Comsat) to provide this facility. Fractional ownership or control of the integrated system has no merit.

(c) Degree of Regulation - The "authorized user" doctrine now employed in international satellite service has no place in the domestic system. Artificial restrictions upon development of the service should be avoided.

(d) General - The transfer of U.S. domestic traffic (i.e., Puerto Rico, Hawaii) to a U.S. domestic system would lead toward a reduced level of U.S. ownership in Intelsat. The first factor in establishing the economic viability of a domestic satellite is the commercial TV distribution load. Communications requirements of Alaska should be part of the domestic inquiry.

Western Union

(a) Type of System - A shared, common carrier system.

(b) Freedom of Entry - The satellite should be owned by Comsat or an equivalent organization. Ground stations should be owned by the users, i.e., major terminals by the common carriers and receive/only stations by the broadcasters.

(c) Degree of Regulation - Limit entry to established carriers. Modify the rate base regulatory approach to stimulate efficiency.

(d) General - Transmission costs have not deterred market or new service development; the principal deterrent has been the cost of the terminal devices.

I T T World Communications

(a) Type of System - The system should be owned and operated by the common carriers, both existing and such new carriers as may be authorized to use the system.

(b) Freedom of Entry - (a) above

(c) Degree of Regulation - The same regulatory policies as have been developed for terrestrial system should be employed in the satellite system.

(d) General - Satellite technology is sufficiently advanced that we need not enter into a pilot program. The common carriers should be authorized to establish the earth stations with the understanding that such system could be bought into by new carriers or specialized users in the future.

2. Supplier Responses

Hughes Aircraft

This company did not respond directly to the inquiry but, instead, forwarded two excellent technical papers dealing with design considerations. In the transmittal letter, the view is expressed that innovation in satellite services has been limited by policy and by the desire to protect certain powerful segments of the telecommunications industry.

TRW

The company disqualified itself from answering the questions on economic and institutional arrangements. It then suggests that constraints on the development of domestic communications satellite systems are in the administrative, economic, regulatory, political and legal areas.

General Electric

General Electric referred to its previous filings with the FCC as responsive to the questions raised by the letter. The filings advocate a specialized satellite capable of providing data-message traffic on a bulk, low cost basis nationwide.

3. User Responses

Corperation for Public Broadcasting

(a) Type of System - Control of the new system must be separated from and unrelated to the present structure of the common carrier industry. Recommends public ownership of a part of the domestic satellite system. The government should fund studies to determine the merits of single purpose and multi-purpose systems but CPB favors multiple systems. Encourages NASA through ATS experiments to undertake development programs to test user applications particularly in behalf of educational and public television.

(b) Freedom of Entry - Advocates exclusion of existing terrestrial carriers from domestic satellite field. Unable to provide financial resources to contribute in behalf of public broadcasting system.

(c) Degree of Regulation - Separate landline and satellite investments. Conventional rate base and frequency regulations.

(d) General - Free and unlimited access to domestic satellite channels for the public broadcaster must be made a permanent part of the law. Continuing government research is necessary in spectrum use, beam design and tradeoffs and relationship to international systems.

Joint Council on Educational Telecom

The Council believes that non-commercial satellite applications merit separate study. By aggregating many non-commercial uses - ITV, data for medical libraries, meteorological service, etc., an independent satellite system for these purposes may be justified. Only the government can undertake such a study. Endorses recommendation of John Macy of CPB for a White House conference on telecommunications technology to assess the needs of the public sector.

American Broadcasting Co.

(a) Type of System - Recommends separate systems for audio and TV broadcasting to be owned and operated by commercial and non-commercial broadcast industry. Other user needs to be met by a multipurpose satellite operated by a (unspecified) domestic carrier.

(b) Freedom of Entry - Healthy competition would ensue from establishment of multipurpose satellites operated by the common carriers and special purpose satellites operated by the broadcasters and possibly ARINC (Aeronautical Radio Inc., serving the airline industry). No discussion of entry conditions beyond existing network and ETV interests.

(c) Degree of Regulation - The commercial broadcaster's satellite would furnish free transmission to the educational TV industry.

Broadcasting is a highly regulated industry and therefore no further regulation is necessary. The usual rate base, non-discrimination forms of regulation should apply to satellite service furnished by the common carrier industry.

(d) General - Broad guidelines, rather than detailed regulation is all that will be required in view of the competitive structure espoused.

National Broadcasting Co.

(a) Type of Service - Proposes multi-purpose satellite with capacity divided between three classes of users: (1) TV-radio interests; (2) data-record interests, and (3) telephone message utility. Comsat would serve as technical consultant and manager of the satellite organization and furnish financing as required. Ground stations owned by user/industry, not necessarily by Comsat and not by another carrier.

(b) Freedom of Entry - A new user group could be formed if a new category of prospective users should develop. No discussion of this point.

(c) Degree of Regulation - User groups could be free to develop experimental rates based on costs.

(d) General - Satellite service should not be delayed by consideration of protection for public utilities. Solution of the problems of ownership, regulation and control should be deferred until after experience with an operating system.

University Computing Co.

(a) Type of Service - In the interest of competition, recommends specialized systems.

(b) Freedom of Entry - Response not clear.

(c) Degree of Regulation - Regulation should be limited to the minimum necessary.

(d) General - The paper is largely devoted to a discussion of the infirmities of the present voice network in providing data services. A separate, nationwide data network is required and the satellite can do the job.

International Business Machines Corp.

(a) Type of Service - Satellites are extension to existing forms of terrestrial communication. No specific comment on organizational form.

(b) Freedom of Entry - While the company wishes to encourage innovation, its comment on entry is limited to praise of carrier responsiveness to the needs of data suppliers and users.

(c) Degree of Regulation - No suggestions.

(d) General - IBM emphasizes the need for continued dialogue between the carrier and the data processing industry in order to obtain recognition of the needs of the latter.

4. Response of Other Interested Party

Communication Workers of America

The trade union proposes a pilot study utilizing NASA's ATS satellites on an expanded trial basis to determine the best uses of communication satellites. A definite cutoff period proposed. An operating committee to be created to develop the structure of the entity which would eventually take on the permanent operating role. The committee would include 7 U.S. governmental representatives, the carriers, Comsat, broadcasters and educators. The interests of the common carriers must be protected. Free channels must be provided to CPB.

The permanent corporation would permit as much as 60% public ownership, while user interests would have a high degree of participation. The traffic generated during the trial period would assist in determining whether general purpose or special purpose satellites would be advanced in the commercial system. The federal government may be a partial owner. The Board of Directors of the new corporation should represent the same interests proposed for membership in the review committee. The system would be a monopoly.

SUPPLEMENTARY COMMENTS FILED IN RESPONSE TO LETTER OF AUGUST 19, 1969 ON DOMESTIC SATELLITE COMMUNICATIONS

Western Union International

a. Type of System - A single multipurpose system.

b. Freedom of Entry - Both space and earth segments to be owned and operated by COMSAT and existing common carriers.

c. Degree of Regulation - Existing regulatory scheme.

d. General - Use of the existing industry structure and existing regulatory scheme will bring forth technical excellence, diversity and economy.

Ford Foundation

a. Type of System - Serious consideration should be given to the creation of a new entity to operate the domestic satellite system.

b. Freedom of Entry - No direct response, but indicates it is premature to fix domestic satellites into a particular institutional and operational pattern.

c. Degree of Regulation - No comment.

d. General - Free interconnection and the "peoples dividend" are essential in building a strong public broadcasting system. There is need in the federal government for increased capacity to determine overall national communications policy.

Columbia Broadcasting System

a. Type of System - Initially, special purpose design uniquely adapted to program transmission requirements of the TV network. Later it may prove more efficient to employ a multipurpose system after capabilities have been demonstrated.

b. Freedom of Entry - Not responsive.

c. Degree of Regulation - No comment.

d. General - Increase in AT&T transmission rates may force the networks to consider a substitute for AT&T service.

Christian Broadcasting Network

This is a volunteered response which did not answer any of the queries of the letter. It indicates interest in transmitting Christian TV and radio programs via satellite to low cost receivers, similar to the method planned by NASA through the ATS satellite to India.

White House acts on a domestic bird

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Dr. Whitehead's office said that Richard McLaren, chief of the Justice Department's antitrust division, was expected to attend the Friday meeting. Bernard Strasburg, chief of the commission's Common Carrier Bureau, was also scheduled to attend the meeting with Chairman Hyde.

Still to be named were representatives of the Departments of Commerce and Transportation. The Post Office Department will have an observer present, Robert Scherr, of the transportation division of the general counsel's office.

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Dr. Whitehead, in informing the commission of plans for the committee, said it would complete its work and submit its findings by Oct. 1.

Wednesday 8/20/69

5:00 Mr. Bosco, Special Assistant to Secretary Volpe, called to say he understands you have been chairing meetings on telecommunications. 962-8192

As the largest nonmilitary user of telecommunications, Secretary Volpe has a great interest in the decisions affecting telecommunications. He is in Alaska and they wanted to be sure that no decision would be reached within the next few days prior to his return. He would like to have an opportunity to make some inputs.

Told Mr. Bosco that the first meeting was organizational and that there would be no decision made at this time.

He asked that you call him upon your return from vacation.

(I mentioned to him that Richard Beam of their office had attended the first meeting for Secor Brown. He said he realized that but wondered if someone of a higher level should discuss this with you.)

THE WHITE HOUSE

WASHINGTON

August 29, 1969

To: Tom Whitehead, EOB

From: John C. Whitaker JCW

I understand you are refereeing for the President a study which ultimately decides which Department controls and administers telecommunications on a government-wide basis.

Joe Bosco, Secretary Volpe's key aide at the Department of Transportation, wants to make sure that before a decision is made that you contact Paul Cherington, Assistant Secretary of Policy and International Affairs of the Department of Transportation, and Secor D. Browne, Assistant Secretary of Research and Technology in DOT to get their "high level policy imputs".

Bosco could not remember the name of the Department of Transportation representative with whom you must deal but he was really saying he wanted you to make a high level contact with Cherington and Browne above the level of the Department of Transportation man you are dealing with.

The Department of Transportation of course would like to take the leadership in telecommunications and I assume they are competing with the Department of Defense and Commerce to see who gets the plum.

News Digest

COMPILED BY THE COMSAT OFFICE OF INFORMATION
950 L'Enfant Plaza, S.W., Washington, D.C. 20024

Date August 20, 1969

No. 37
Vol. 7

COMMUNICATIONS SATELLITE CORPORATION

BROADCASTING, Aug. 18, 1969

Equipment&Engineering

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Lee looks for assurance

FCC Commissioner Robert E. Lee is calling on commission to give broadcasters assurance that it will bar direct satellite-to-home broadcast system, which would reduce need for terrestrial broadcasting system and eliminate many UHF stations.

Commissioner is issuing call in statement this week in which he concurs in commission action issuing fifth notice of inquiry in preparation for World Administrative Radio Conference of International Telecommunication Union. Conferences, on radio and astronomy and space services, will be held in June 1971.

Commission in notice indicates it is standing by previous proposal to recommend that frequency band 614-890 mc—UHF channels 38 through 83—be set aside for direct satellite broadcasting, subject to policy decision by individual nations as well as to coordination among affected nations (BROADCASTING, Feb. 2). Commission recommendations are being forwarded to State Department as preliminary step in formulation of U. S. position.

Commissioner Lee does not oppose reservation of frequencies for direct-satellite broadcasting. But he says it would be unfair of commission to establish system that would cause UHF stations to lose millions they have invested at commission's urging.

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ELECTRO-TECHNOLOGY—SEPT 1969

former USIA head urges policy for satellites

A NATIONAL POLICY DECISION is needed concerning how domestic communications satellites will be launched and who will be permitted to launch them, according to Leonard H. Marks, former head of the U.S. Information Agency and former chairman of the U.S. delegation to the International Telecommunications Satellite Consortium.

Speaking at a recent Electronic Industries Assn. seminar, Marks pointed out that unless the FCC, Congress, and other government agencies act soon, a number of opportunities for faster and cheaper data links will lie fallow.

However, a White House 60-day "hold" has been slapped on the FCC recently, to give the administration time to consider various sets of "recommendations"—generated partly by communications lobbyists. Thus, the needed decision on a domestic communications satellite system is off again until Nov. 1—at the earliest.

Meanwhile, other countries are moving forward rapidly. Canada has just announced that in 1972 it will start operating the world's first technologically modern communications satellite system.

The Canadian system will be in operation long before the U.S. has anything working. Ironically, their system is being set up with technology, rockets, and launch facilities borrowed from the U.S.

August 20, 1969

To: Ann Garman
Press Office

From: Eva Daughtrey
Tom Whitehead's office

Attached is a copy of the memo we sent to Mr. Ziegler yesterday. Thought you might be getting calls from reporters.

Package sent

8/19/69

cy of ltr sent to industry; issues & list of those receiving ltr.

THE WHITE HOUSE

WASHINGTON

August 19, 1969

The Government is considering alternative policies for the timely introduction of satellites to domestic commercial communications. Our objectives are to assure timely and full benefit to the public of satellite technology potentials and to assure maximum learning about the problems and possibilities of satellite services in domestic applications.

We are aware that your organization has had a continuing interest in this subject. While we have reviewed the public record of the last several years, your current ideas and information would be a useful addition to our review. I would, therefore, like to invite you to submit any information or comments you feel would be helpful to our working group. We expect to complete our work about October 1.

Since the Federal Communications Commission is responsible for authorizing specific operational systems, we will not be concerned with specific corporate proposals or the details of system designs. Rather, our focus will be on the economic and institutional structure of the industry, the relationships between competition and regulation, and how new uses and services can be encouraged for public benefit.

Enclosed are some of the issues we will be considering. You may wish to use these, in part, in organizing your comments. I look forward to hearing from you.

Sincerely yours,

Clay T. Whitehead
Staff Assistant

Enclosure

August 16, 1969

Benefit to the public from the economic and service potential of satellite technology

1. What specific services that are not now available would be made possible and economically feasible through satellite technology?

2. What specific services now being offered could be provided more effectively or more efficiently through satellite technology, and what economic savings would accrue?

3. What institutional, technical, and economic arrangements, taken as a whole, appear most likely to assure full benefit to the public of domestic satellite potential?

4. What specific services and systems appear to offer the most immediate economic potential and how can they best be provided?

Learning about the problems and possibilities of satellite services

1. What information about technological capabilities and performance of satellite systems is needed to resolve uncertainties about the technical and economic feasibility of potential systems?

2. What information about operational uncertainties is needed?

3. What information about economic and market characteristics is needed?

4. Specifically, what information or technological developments are needed over the next few years with respect to tradeoffs among spectrum utilization, orbit location, and cost to permit maximum utilization of communications satellite capabilities?

5. What of the above information can be obtained best by further research, experimental trials, or a pilot operational system?

Incentives for innovation by communications firms to develop new telecommunications services and markets

1. What Government policies would be most effective in promoting development of new telecommunications services and markets by the private sector?

2. What research and development can be carried out by private enterprise to speed the development of economically viable domestic communications satellite applications?

3. Is there research that can be carried out only by the Government that would resolve uncertainties or impediments to technological or market innovation by the private sector?

4. Given appropriate economic incentives and institional arrangements, what new services, markets, or technologies could the private sector likely develop in the foreseeable future?

5. What institutional arrangements with respect to ownership and operation of communications satellites will offer the best balance between the rate of innovation and nondisruptive growth of the communications industry?

Degree of regulatory control and impediments to technical and market innovation

1. What type and degree of economic regulation (such as rate-base regulation, limits on entry of new firms, authorized user limitations, or limits on services offered) is now clearly necessary during the initial phases of domestic commercial satellite communications? What technical regulation, such as spectrum utilization, interference standards, or service standards?

2. Under reasonable projections of the economic and technological potential of satellite services, what regulatory policies appear most desirable for the long run?

3. Is it desirable to have regulatory policies with respect to telecommunications via satellite that are distinct and different from policies for terrestrial systems?

4. To what extent can competition, together with general regulatory guidelines, foster a more responsive industry than is possible with very detailed regulation?

Mr. Ben S. Gilmer
President
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Mr. Leonard Goldenson
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Letters received from the
attached.

Re our Aug. 19, 1969
letter

Leonard H. Goldenson
President
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Julian Goodman
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ITT World Communications, Inc.
J. R. McNitt (James)
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William Plummer
~~J. D. O'Connell~~
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Executive Office of the President
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Howard R. Hawkins
President
X RCA Global Communications, Inc.
60 Broad Street
New York. N.Y. 10004

X Indicates organizations to whom the 19 Sep letter frm Mr. Whitehead were forwarded for submission.

Note: Submissions were not received from International Brotherhood of Electrical Workers or National Association of Broadcasters.

E. A. Gallagher
X President
Western Union International, Inc.
26 Broadway
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The Ford Foundation
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Original of issues sent to endustry 8/19/69

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Aug 19, 1969
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Corrected
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TRW Inc.

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