Chapter IV

NEW SERVICES -- OVERLOAD, DELAY, INACTION, FRUSTRATION

The rapid rate of growth in use of the radio spectrum has exceeded, by a substantive margin, the increase in the allocated spectrum, our capability to use the higher frequencies, our technology, and our administrative methods and facilities. In fact, technology has created desire for additional uses faster than it has produced means to solve the problem of electromagnetic congestion. The part of the spectrum that we have learned how to use is now fully allocated to important civil and Government needs and is congested in key parts.

The impact of this rapid growth has been the most noticeable and is demanding the most attention in the land mobile radio services in or near the larger cities. Many of these services have outgrown their allocations, even with modern techniques, and have requested more frequencies which would have to be taken from other radio services.

Satellite communications furnish another important example of the squeeze that is now being experienced. When the possibility of communicating via satellites became a reality, there were no unallocated or unused frequencies available and satisfactory to use with this new technique. It could be initiated only by sharing with existing and expanding terrestrial radio services. This sharing arrangement allowed us to start the initial global communication-satellite system but at the cost of limiting both services. Constraints of this kind, however, cannot long be accepted if we are to provide for the ultimate needs of an industry which promises to double the volume of world-wide communications every five years.

More and more the demand grows throughout the nation to use satellites for:

Broadcasting directly to the general public,

Educational television as well as regular broadcasting,

Distributing educational and entertainment television programs domestically to terrestrial TV relays,

Supplementing our domestic wireline and microwave systems, and,

Communicating with aircraft and ships on international routes.

These desires pose serious national and international policy and frequency management considerations. In applying our technology for the accommodation of satellite broadcasting, for example, we must be mindful of international frequency allocation problems, foreign reaction, disruption of local broadcasting service, greater difficulty in meeting needs of other radio services, and other potential effects.

The only way these challenges can be reasonably met is to plan ahead -- work with facts, determine trends in needs and solutions, set priorities in the national interest, obtain concurrence nationally and internationally and -- follow through. This is a major task -- we are working with a resource carrying an investment of over $30 billion; it will take significant effort to do a planning job adequate to the future security and enhancement of such an investment.

Chapter V

GOVERNMENT AWARENESS AND ACTION TO DATE

The spectrum problem is not a sudden happening -- it has been coming on ever since World War II. The tremendous technological acceleration from 1939 through 1946 not only opened up new spectrum space but concurrently demonstrated a wide range of new services and benefits to be derived from the use of the spectrum. Visionaries of that period saw that the day would come when the rate of increase in demand would outpace the supply.

Delineation of the Problem

First official recognition of the need to become better prepared for the challenge occurred in 1951 when the President's Communications Policy Board, in its Report, "Telecommunications - A Program for Progress," resolved the general problems of telecommunication into five specific issues. These are:

a. "How shall the United States formulate policies and plans for guidance in reconciling the conflicting interest and needs of Government and private users of the spectrum space -- that is, guidance in making the best use of its share of the total spectrum?

b. "How shall the United States meet the recurrent problem of managing its total telecommunications resources to meet the changing demands of national security?

c. "How shall the United States develop a national policy and position for dealing with other nations in seeking international telecommunications agreements?

d. "How shall the United States develop policies and plans to foster the soundness and vigor of its telecommunications industry in the face of new technical developments, changing needs, and economic developments?

e. "How shall the United States Government strengthen its organization to cope with the four issues stated above?"

These five issues delineate the problem as well today as when they were formulated in 1951. Unfortunately, however, the delineation of these problems did not bring forth adequate efforts to solve them. Lately we have introduced programs to get the problems measured and under better control, but these should be recognized as stop gaps and not yet of a dimension adequate for coping with the most basic issues.

Measures Taken by the DTM

Some of the more important measures taken by this office to meet urgent needs are:

a. We have established a procedure whereby the DTM personally, with the FCC Chairman when appropriate, questions and hears the Government agencies on important radiocommunication problems and issues.

b. We have consulted with heads of the Executive Branch agencies on ensuring the availability of frequencies before obligating funds for new projects requiring frequencies, prudent administration of their uses of the spectrum, and on other important radiocommunication problems and issues.

c. We have given the Interdepartment Radio Advisory Committee (IRAC) official status, a mission, and functions on which it reports directly to the DTM for consideration and possible approval of its recommendations, including the assignment of frequencies to Government agencies.

d. We have established a program for inspecting Government radio stations.

e. We have brought in the views of industry and non-Government experts by establishing a Frequency Management Advisory Council, composed of widely recognized knowledgeable persons, to give us the benefit of the private sector experience, fresh appraisals and practical advice on the Government's programs, policies, procedures, and practices in Government frequency management.

f. We have developed and issued the first codification of the regulations and procedures, including policy guidance, for the acquisition and use of radio frequencies by Government agencies -- issued as a Manual of Regulations and Procedures for Radio Frequency Management.

g. We have established a common data base for automatic processing and computer techniques for more effective and efficient administration of the Government use of the spectrum, and speeded up the introduction of ADP techniques into our frequency management activities so that a significant part of the initial system will be ready for use in the fall of 1966.

h. We have initiated a study (in which the FCC and other Government departments and agencies collaborated) to determine the potential growth and possible needs for frequencies in the space services between now and 1980 and the means of satisfying approved needs in the light of spectrum saturation.

i. Early in 1964, at the request of Dr. Jerome B. Wiesner, then Acting Special Assistant to the President for Telecommunications, the Joint Technical Advisory Committee (JTAC) (sponsored by the Institute of Electrical and Electronics Engineers and Electronic Industries Association) started an initial study of needed technical programs and the formulation of objectives for dealing with the subject of electromagnetic compatibility as a national problem. Useful recommendations are expected from the JTAC.

The Surface Has Only Been Scratched

While we take pride in this progress, we only too clearly recognize that the majority of these efforts have been directed toward getting the "house in order," solving problems of today and putting out fires. Except

for the one study concerning space service needs up through 1980, we have not had sufficient funds to employ the expertise to meet the major challenge of where do we go from here -- how do we plan for continued growth in the use and rewards from use of the radio spectrum? To respond properly to this challenge will take effort of new dimensions, but the result could lead to continued doubling of the return from use of the spectrum every ten years. Without such decisive action, we will be following a saturation curve -- the benefit per capita or per $ of GNP will actually decrease -- bigger and bigger political arguments will arise as to who should have access to whatever spectrum is available.

Chapter VI

ADDITIONAL MEASURES NECESSARY TO ENSURE CONTINUED GROWTH IN THE REWARDS FROM USE OF THE RADIO SPECTRUM

Immediate Step

There is an urgent need for correlating all existing data on availabilities of, demands for, and burdens upon, the radio spectum and for assembling other essential information not heretofore available. The DTM should take immediate steps, in conjunction with the FCC, to obtain essential facts about the purpose, extent, and intensity of present uses, unfilled and possible future needs, existing investments in communications and electronics, contribution of radio services to the GNP, spectrum pollution, new technology, means of communication other than radio, trends in needs, expansion and technology, and policy and economic factors.

Benefits to be derived from these studies will be tremendous. The studies are a necessary prerequisite to intelligent policy determinations of the following facets of the over-all problem:

a. The proportionate allocations to the various generic radio services in the best national interest.

b. The proportionate division of spectrum space between the Government and non-Government users in the best national interest.

c. The preferred frequency bands for the various categories or applications of use.

d. Whether terrestrial microwave systems should accept less stringent sharing criteria or yield frequencies to accommodate expected growth in communications via satellites, including the possible provision of adequate exclusive allocations to the communication-satellite service.

e. Whether frequencies should be found to permit the distribution of TV programs to terrestrial local TV stations for broadcasting; or broadcasting directly from satellites to the general public.

f. Whether frequency provision should be made for communication-satellites to supplement or supplant domestic wirelines and microwave systems.

g. Whether there is an immediate general need for more frequencies for the land mobile radio services and, if so, should spectrum space be made available, how much, and what other radio services would be affected thereby.

h. Whether it might be more in the national interest to take frequencies from Government agencies and make them available for use by local fire or police departments, or for private use for such purposes as increased operating efficiency in general commerce and industry, resale to the general public as communication services or advertising and entertainment.

i. Whether increased sharing of frequencies among the various radio services is practicable and in the national interest.

j. Whether new developments such as millimeter wave length systems and visible wave length laser systems will alter pressures on other segments of the spectrum.

k. Whether other modes of communication such as cables and wave guides should be used instead of radiocommunication, even though they sometimes may be more expensive.

l. Whether and how phone vision might be accommodated if it becomes as much a regular means of communication as the telephone; would radio frequencies be needed or would cables, wave guides, or modes yet to be invented suffice.

m. Whether significant growth in land line and radio-communication facilities should be looked upon and stimulated as a means to provide virtually immediate, direct address-to-address "mail" services.

n. Whether improvements in technical standards should be accelerated, even at higher cost, to make for fuller use of the spectrum.

Longer Range Planning

Concurrently, a program should be undertaken with the FCC for long-range planning for the allocation and use of the radio spectrum. The objective of the program would be to provide a feasible and continually available guide for the orderly development and exploitation of the radio spectrum in such a manner as to ensure, insofar as practicable, the satisfactory accommodation of present and foreseen frequency requirements found to be in the national interest. The Table of Frequency Allocations planned to be developed will include projections of changes in allocations thereby allowing a minimum of 10 years to plan ahead for orderly and gradual rearrangement of radio operations and amortization of investments. An initial plan will be developed within three years of the availability of the necessary funds. Thereafter, it is proposed to maintain continuing review of the Table in the light of changing needs, economic factors, technological developments and policies, and to effect desirable changes in such a manner as to provide a continuously available guide to the use of the spectrum, always maintaining sufficient flexibility to provide for unforeseen crash programs. Appendix 5 is an outline of this program.

Long-range planning for the use of the spectrum will be futile in the absence of knowledge of the relative importance of radio operations to the Nation. Accordingly, as an essential step, it is proposed as soon as the necessary funds are available to arrange for an outside professional study, under the guidance of the FCC and the DTM, to:

a. Analyze each radio service and type of operation within each radio service to determine the value or benefit thereof to the Nation.

b. Ascertain the contribution of each radio service and type of operation within each service to the GNP, both capital and annual operating.

c. Devise a methodology to express the relative value or importance to the Nation of each radio service and type of operation within each service, which the DTM and FCC may use to assign relative importance indicators to each service and type of operation. Appendix 6 is an outline of this study program.

Encouraging Research

Underlying the entire future of radio spectrum allocation and use will be changing needs and the new issues and new pressures arising out of discoveries in research and development. We should encourage research to the end that, wherever practicable, there be developed economical modes other than radio for providing services now employing the radio spectrum. We must be certain, for example, that research is continued to provide wide-band cables and wave guides, capable of transmitting thousands of voice circuits with a quality and cost of service adequate to encourage their use instead of microwave and satellite services, thereby saving the spectrum for those needs which cannot be met by wire or cable.

We must be alert to ensure that there is adequate "spectrum-developing" research and development; i.e., R&D directed toward increasing the efficiency of use of the spectrum to give greater productivity per megacycle of spectrum and less interference to other uses from harmonic or other spurious emissions. We should carry on a positive program to ensure that developments which increase spectrum productivity become known to other users, whether in the Government or private sectors.

We should see that increased effort in propagation and instrumentation research is started now to explore the utilization of the higher reaches of the spectrum so that we may find ways and means of using them to relieve the saturated frequency bands and the pressures upon them. This will generate additional contributions to the national economy and the way of life of our population. We have within Government, private industry, our private research and university facilities the capabilities for expanding this effort if additional support and guidance are furnished.

The achievement of adequate capability in this office for keeping abreast of technological research, foreseeing change and recognizing opportunities and problems which its exploitation may involve, and fostering additional research where needed, is a basic requirement.

Required Resources for Adequate Management

In the control of land, water, minerals, forests and energy sources State and local governments and industry have major responsibilities. In the case of the sixth national resource, however, the Federal Government has the sole responsibility for planning, administration, regulation and management and these are rapidly expanding tasks.

The Congress and the President are responsible for all policies, plans, and administrative management for each and every assigned usage of the radio spectrum in the United States. These responsibilities have been delegated to the Federal Communications Commission and the Director of Telecommunications Management, respectively.

As a business function, this total management effort is presently being conducted with less than 3/10,000 of the amount which the U. S.

use of the spectrum contributes annually to the GNP. From a business management point of view this scale of overhead costs seems incredibly low. 1/

In this field, from the all important point of view of the U.S. taxpayer, the Nation has been getting one of the greatest bargains in history, but the potential returns are too great to continue to deal with this resource on a "bargain" basis.

The type of effort proposed in this report should require funding at least three to five times greater -- or an additional annual expenditure of some $10 million.

1/ Comments of one non-profit research organization, Spindletop Research, Lexington, Kentucky: "Any science based industry which spends such a small percentage of its annual income on research, development and planning would instantly perish. Indeed, the average expenditure by technically based industry is 6%, with the electronics industry at 8%, and aircraft manufacturing at 25%, 90% of which is government supported. The trivial expenditure to understand and manage our radio frequency spectrum resource almost assures the mess in which our communications industry now finds itself. Present expenditures are not even sufficient to watch spectrum use, let alone manage it.

"The contrast between surface transportation research and development expense of 0.6% and aircraft manufacturing transportation expense of 25% is reflected in the health and progress of these industries."

Chapter VII

CONCLUSIONS AND AN APPEAL

Conclusions

a. The importance of the radio spectrum in our national economy should be more fully recognized. There is inescapable evidence that continued proliferation of uses of the spectrum, without improved and imaginative planning, guidance and management, will halt essential growth and prevent full achievement of national interests and goals because of insufficient frequencies. Continuing to ignore the clear warnings and refusing to give adequate attention to this national resource until saturated with pollution and misuse, can lead only to stagnation and massive problems, particularly in crucial parts of the spectrum used for mobile communication within the larger metropolitan areas.

b. The capabilities, efforts and achievements of past and present personnel engaged in this effort should be appreciated and applauded. Seldom have so few done so much with so little.

c. The future requires considerably more such capability applied on a continuous basis, on a broader scope, in a creative way, and with a much longer view of the future, so as to achieve:

(1) Constant evaluation of technological research and development in the telecommunication sciences and the stimulation, encouragement and guidance of needed research.

(2) New and adequate measurement techniques for use evaluation.

(3) Relative evaluation of the various radio services employing or desiring to use the spectrum.

(4) A practical and conservative economic methodology of optimum use and growth which will permit readjustment without loss of economic potentials.

(5) Long range over-all planning of the allocation and use of the radio spectrum.

d. A cooperative effort by the Executive Branch, Congress, FCC, industry, science and the general public should be directed to the achievement of our national goals in spectrum utilization, including the following:

(1) The increase in the rate at which the use of the radio spectrum contributes to the GNP, by at least a factor of two.

(2) The fostering of the use of the modes of telecommunication (such as cables and wave guides) other than radio, so that present and future requirements for those services which must use the radio spectrum can be accommodated and growth assured.

(3) The removal of barriers to and the encouragement of the full development and application of space techniques to meet the exploding communications needs of our people.

(4) The encouragement of research leading to improved efficiency in the use of frequencies, to new frontiers higher in the spectrum, to rearrangement of existing radio services for greater productivity in the use of the spectrum and new modes of radiocommunication.

e. The radio spectrum is a critical national resource vital to the security and welfare of the Nation. The United States is highly dependent upon its use to carry out national policies and to achieve the national goal to make available to all the people a rapid, efficient, nationwide and worldwide radiocommunication service with adequate facilities at reasonable charges, for the purposes of: national security and defense; safety of life and property; crime prevention and law enforcement; conservation of natural resources; foreign commerce and relations; education, information and entertainment; economy; scientific research and exploration; and personal pleasure, experimentation and training. The national goal should be attained by means of a long-range plan which would serve as a feasible and continuously available guide for the orderly development and exploitation of the use of the radio spectrum.

f. The funding for this effort must be commensurate with the magnitude of the resource and the potential rewards that will come from better planning for continued growth in yield.

An Appeal

The evidence of present and impending massive trouble in our use of the spectrum is clear. We can continue to refuse to give adequate attention to this national resource until pollution, misuse, and saturation reach crisis proportions.

When this happens our problems of immobility of capital investment will be so large that it will take us many years and much government and private money to straighten out the mess. We will, at this point, be forced to go to a National Frequency Bank Exchange, radically change all our present policies of frequency use, capitalize the spectrum, and sell or lease it to users on a competitive basis.

Prompt action now to start intelligent planning on an adequate scale can possibly devise methodologies of progressive change which will prevent or long defer the need for such drastic crash dislocations, such high costs and such massive crises. Planning can make possible orderly change in a more timely period, maximize growth and profits, benefit industry and government. We can no longer deal with our coming crescendo of crises without it. There must be a full partnership between government and industry in its accomplishment.

A substantially increased effort in research is needed starting now to explore both the utilization of the higher frequency reaches of the spectrum and new means to accommodate the transfer of more information in presently crowded bands so that we may find ways and means for relieving the stagnation. This will generate additional contributions to the national economy and the way of life of our population. We have within Government, in private industry, in our private research and university facilities the capabilities for expanding this effort if additional support and guidance is furnished.

Our past national philosophy has largely been -- let us expand our use of this boon of nature without very much concern for accommodating growing future needs. Obviously, this was the way of quick returns -- while the radio spectrum seemed to be expanding as fast as the use of it increased. Now that the expansion is limited by several technological barriers we must make some major efforts to prolong the continued increase of its use not only for the immediate future but also for a long time to come.

First -- garner the facts; develop the methodology

It is extremely important to recognize forthrightly that we have not had and do not yet have the tools of adequate data or measurement techniques to really determine accurately the facts of our predicament and when we can expect in some portions of the spectrum to run out of room for further expansion.

Neither is there available a program or a methodology for future possible readjustment of allocations in such a way as to give maximum protection to capital investment and increased potentials for earnings in the many fields of expanding services. Since the full benefit of major changes could not normally be obtained until 10 - 15 years after plans had been made, the potential losses and damage to growth or progress can be visualized.

Progress is being made in the storage and marshalling of facts; but an expedited program is needed to determine measurement techniques for spectrum use evaluation.

Then - long-range planning

Unfortunately, our long-range planning for the future is virtually nil. Since there is only one radio spectrum, effective coordination and joint planning by the Federal Communications Commission and the Director of Telecommunications Management is a fundamental need.

To know what should be done is not enough. Thought needs to be translated into action. Authorization backed by funding is sought to initiate this program and to make it effective.

Appendix 1

International Expansion of Telecommunications

The allocation and use of the spectrum have been growing at an enormous rate, both internationally and nationally, particularly since World War II. The following table will give an appreciation of the expansion in the spectrum and increases in radio uses.

Year	International Radio Conference	Number of Radio Services	Spectrum Allocated (kc/s)	
1906	Berlin		500 and 1,000	
1912	London		150 to 1,000	
1927	Washington		10 to 23,000	
1932	Madrid	5	10 to 30,000	
1938	Cairo	7	10 to 200,000	1/
1947	Atlantic City	16	10 to 10,500,000	2/
1959	Geneva	20	10 to 40,000,000	
1963	Geneva (Space)	27	10 to 40,000,000	3/

Note: 1/ European Region. On the American Continent, the Table provided for allocations up to 300 Mc/s for future research and experiment in the amateur, broadcasting (television), fixed and mobile services.

2/ The U. S. had a military allocation plan up to 30,000,000 kc/s during WW II, with experiments at 26,000,000 kc/s.

3/ The U. S. allocations extend to 40,000,000 kc/s with an allocation at 88,000,000 to 90,000,000 kc/s to radio astronomy, and operations as high as 35,000,000 kc/s. Experiments are being conducted 10 times higher.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF THE DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT

UNITED STATES ALLOCATION OF FREQUENCIES 30-10,000 Mc/s TO RADIO SERVICES-IN MEGACYCLES AND PERCENTAGES

Radio Service	30 - 960 = 930 Mc/s				960 - 10,000 = 9,040 Mc/s				30 - 10,000 = 9,970 Mc/s			
	Mc/s		%		Mc/s		%		Mc/s		%	
	Excl.	Shared	Excl.	Shared	Exclusive	Shared	Excl.	Shared	Exclusive	Shared	Excl.	Shared
Amateur	8.000	35.000	0.86	3.76	0.000	710.000	0.00	7.8	8.000	745.000	0.08	7.5
Broadcasting	514.270	0	55.3	0	370.000	0	4.1	0.	884.270	0	8.9	0
Fixed	19.600	214.690	2.11	23.1	820.000	3253.000	9.1	36.0	839.600	3467.690	8.4	34.8
Mobile-All	61.165	214.690	6.58	23.1	240.000	2283.000	2.66	25.3	301.165	2497.610	3.02	25.0
Aeronautical	(18.025	0	1.94	0	0	0	0	0	18.025	0	0.18	0)
Land	(41.665	0	4.48	0	0	0	0	0	41.665	0	0.42	0)
Maritime	(1.475	0	0.16	0	0	0	0	0	1.475	0	0.02	0)
Unspecified	(0	214.690	0	23.1	240.000	2533.000	2.66	28.0	240.000	2497.610	2.41	25.0)
Meteorological	2.000	3.950	0.22	0.42	20.000	470.000	0.22	5.2	22.000	473.950	0.22	4.75
Radiodetermination	69.875	17.650	7.51	1.90	2475.000	1910.000	27.38	21.13	2544.875	1927.650	25.52	19.33
Aeronautical RN	(17.575	0	1.89	0	825.000	560.000	9.13	6.2	842.575	560.000	8.4	5.6)
Maritime RN	(0	0	0	0	0	380.000	0	4.2	0	380.000	0	3.81)
Radiolocation	(52.000	17.650	5.6	1.90	1650.000	1910.000	18.25	21.13	1702.000	1927.650	17.1	19.33)
Radionavigation	(0	0	0	0	0	210.000	0	2.32	0	210.000	0	2.11)
Satellite RN	(0.300	0	0.03	0	0	0	0	0	0.300	0	0.003	0)
Radio Astronomy	1.600	2.000	0.17	0.22	47.000	10.000	0.52	0.11	48.600	12.000	0.49	0.12
Space-All	1.000	2.950	0.11	0.32	125.000	2032.000	1.38	22.48	126.000	2034.950	1.26	20.41
Communication-Sat	(0	0	0	0	100.000	1900.000	1.11	21.01	100.000	1900.000	1.00	19.10)
Meteorological-"	(0	1.000	0	0.11	0	120.000	0	1.33	0	121.000	0	1.21)
Research	(1.000	1.950	0.11	0.21	20.000	100.000	0.22	1.11	21.000	101.950	0.21	1.02)
Space	(0	1.000	0	0.11	5.000	12.000	0.06	0.13	5.000	13.000	0.05	0.13)
Totals	677.510	252.490	72.9	27.1	4097.000	4943.000	45.3	54.7	4774.510	5195.490	47.9	52.0

Note: Do not add shared columns.

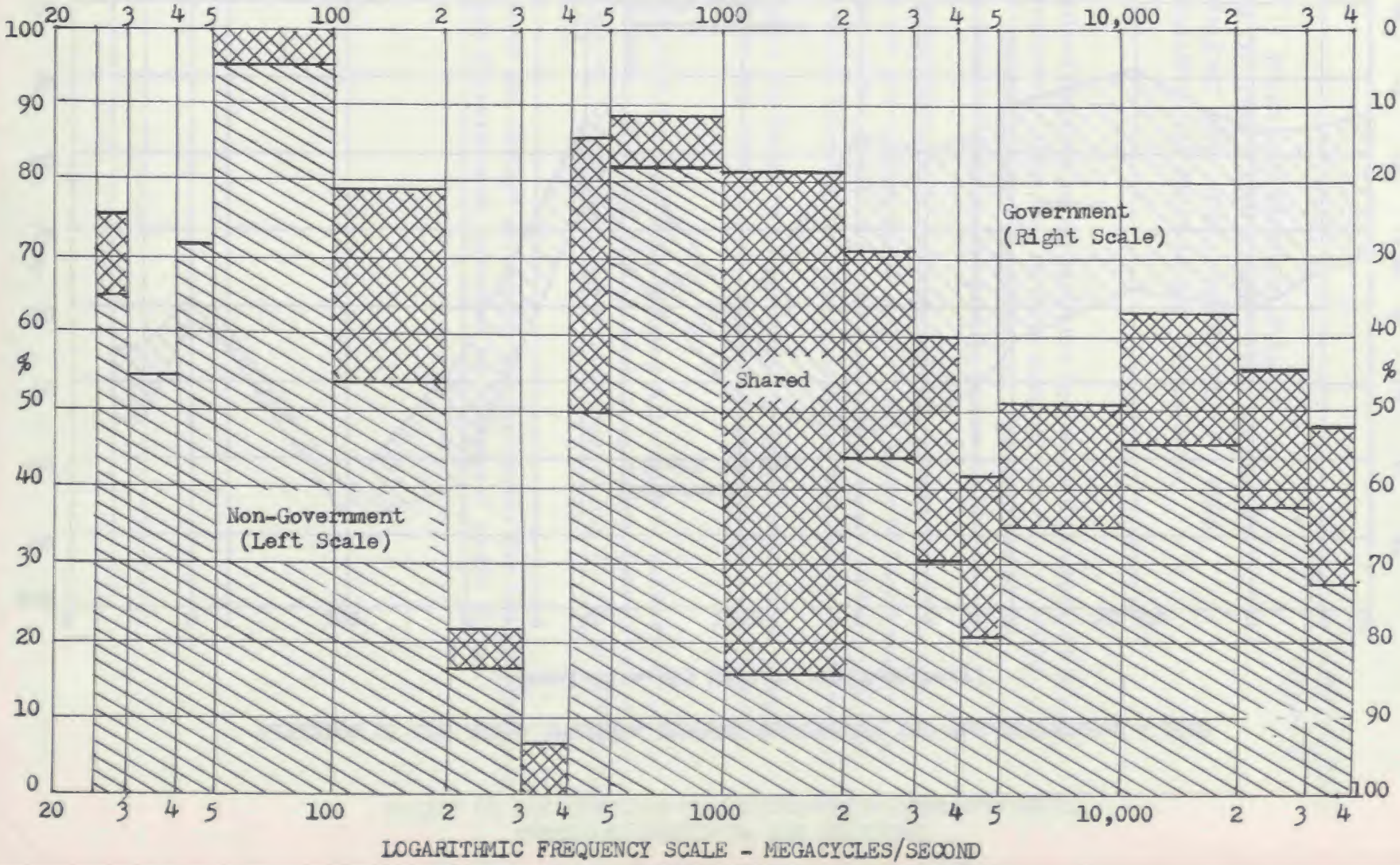
July 1966

APPENDIX 2

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF THE DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT

DIVISION OF RADIO SPECTRUM BETWEEN GOVERNMENT AND NON-GOVERNMENT

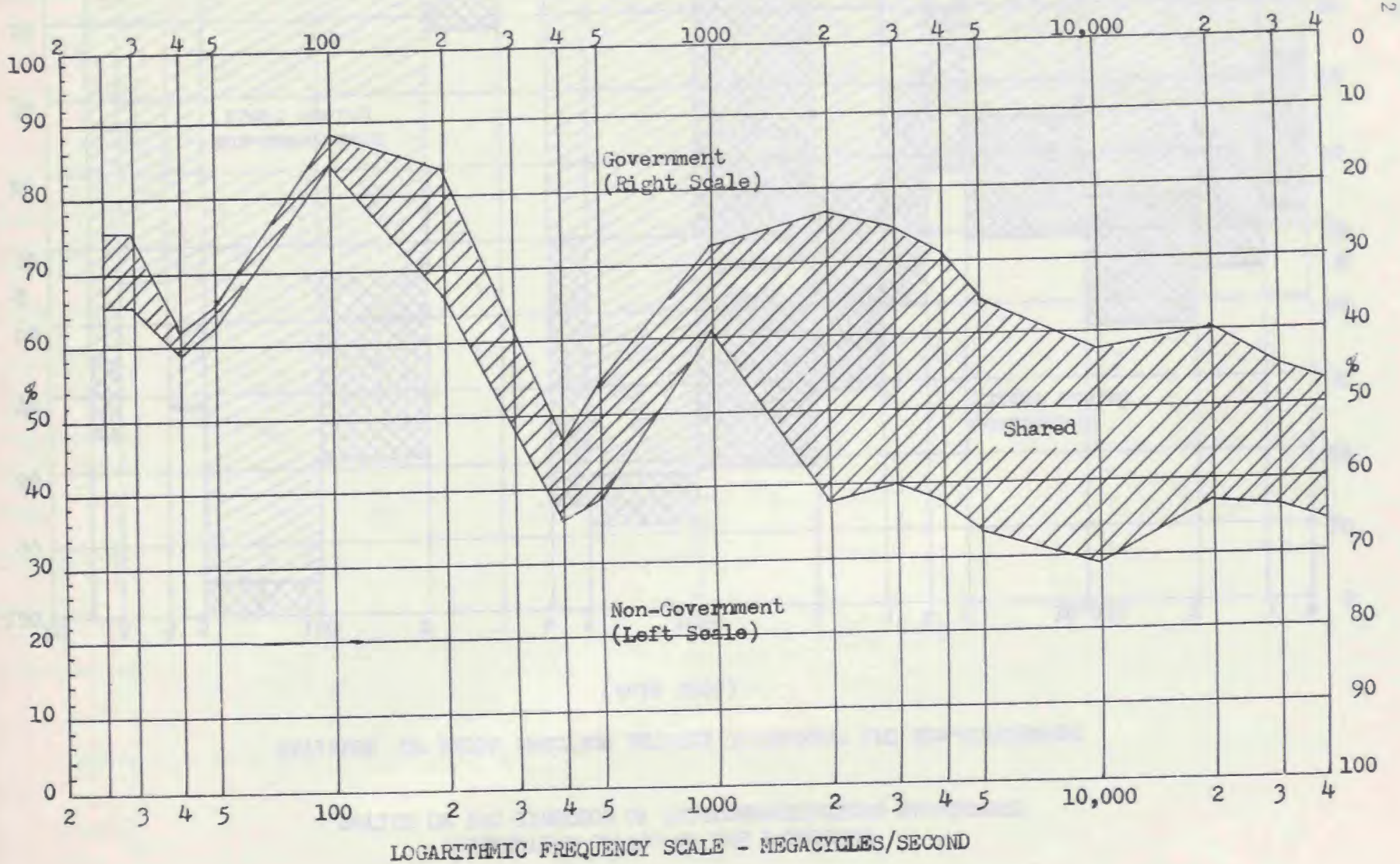
(July 1966)



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF THE DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT

DIVISION OF THE RADIO SPECTRUM BETWEEN GOVERNMENT AND NON-GOVERNMENT - 1966

(Cumulative--25 Mc/s to any Frequency)



EXPLANATION OF CHART
DIVISION OF THE RADIO SPECTRUM BETWEEN GOVERNMENT AND NON-GOVERNMENT - 1966
(Cunulative--25 Mc/s to any Frequency)

The total (cumulative) number of megacycles per second between 25 Mc/s and any higher frequency, allocated to Government, non-Government, or both (shared), is plotted against frequency as a percentage of the frequency band in question (higher frequency minus 25 Mc/s).

The percentages allocated to non-Government are plotted from the bottom of the chart, with the percentage scale on the left; those to Government are plotted from the top of the chart, with the percentage scale on the right; and those shared are shown between the Government and non-Government percentages.

The total percentages available to Government or non-Government equals the percentage shown for Government or non-Government plus the shared percentages.

Example: Under the 1966 Table of Frequency Allocations, between 25 Mc/s and 1,000 Mc/s (1,000 - 25 = 975 Mc/s), non-Government (use lower curve) has 60.6% of 975 Mc/s, Government (use upper curve) has 27.6% of 975 Mc/s, and 11.8% is shared.

Note: The chart does not reflect numerous arrangements for sharing between Government and non-Government, effected by "footnote" to the Table.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF THE DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT

TRENDS DATA
(Rounded)

Year	U. S. Population (Millions)	G N P (Billions of $) Actual	G N P (Billions of $) 1958 $	Electronic Goods Sales (Millions)	Broadcasting Revenue (Millions) #	Transmitters Safety and Special Services (Millions) #	Telephones (Millions) U. S.	Telephones (Millions) World
1	2	3	4	5	6	7	8	9
1926				187			17.7	
1927	119.767			200			18.5	
1928							19.3	
1929	121.767	103.1	203.6	465			20.2	
1930	123.077	90.4	183.3				20.2	34.4
1931	124.040	75.8	169.2	220			19.7	
1932	124.840	58.0	144.1				17.4	
1933	125.579	55.6	141.5	135			16.7	
1934	126.374	65.1	154.3			0.1	17.4	33.5
1935	127.250	72.2	169.6	240				
1936	128.053	82.5	193.0				18.4	
1937	128.825	90.4	203.3	350	116.0		19.4	
1938	129.825	84.7	193.0		115.0		20.0	
1939	130.880	90.5	209.4	340	129.0		20.8	
1940	132.122	99.7	227.2		145.0		21.9	42.4
1941	133.402	124.5	263.7		170.0		23.5	
1942	134.860	157.9	297.8		188.0		24.9	
1943	136.739	191.6	337.2		217.0		26.4	
1944	138.397	210.1	361.3		275.0		26.9	
1945	139.928	212.0	355.4		300.0		27.9	48.
1946	141.389	208.5	312.6		322.0		31.6	
1947	144.126	231.3	309.9	1,750	360.0		34.9	
1948	146.631	257.6	323.7		410.0		38.2	
1949	149.188	256.5	324.1		445.0		40.7	

- Taken from curve

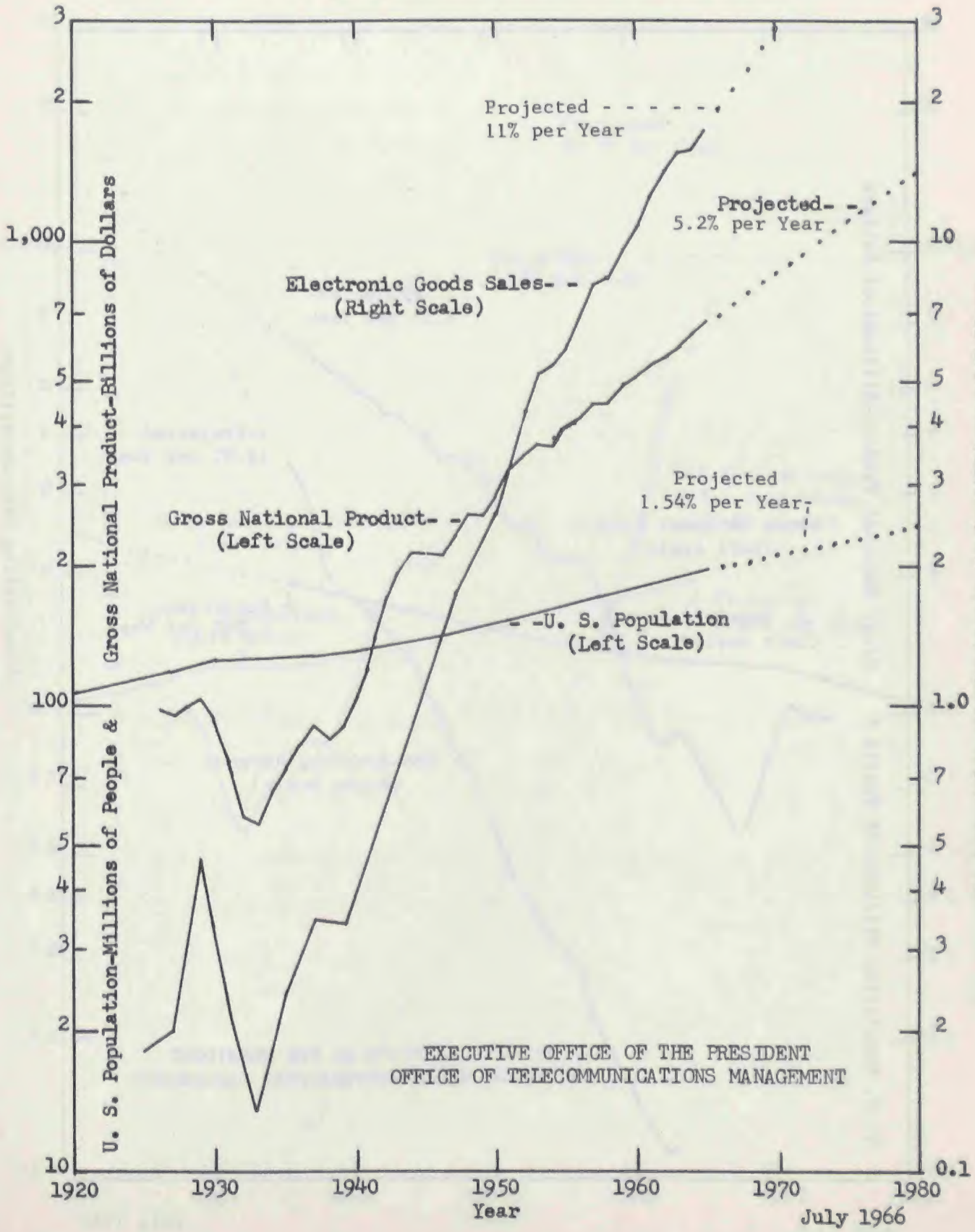
APPENDIX 4
(Page 1)

Year	U. S. Population (Millions)	G N P (Billions of $) Actual	G N P (Billions of $) 1958 $	Electronic Goods Sales (Millions)	Broadcasting Revenue (Millions) #	Transmitters Safety and Special Services (Millions) #	Telephones (Millions) U. S.	Telephones (Millions) World
1	2	3	4	5	6	7	8	9
1950	152.271	284.8	355.3	2,705.	530.	0.39	43.0	70.7
1951	154.878	328.4	383.4	3,313.	670.	0.42	45.6	
1952	157.553	345.5	395.1	5,210.	770.	0.54	48.1	
1953	160.184	364.6	412.8	5,600.	860.	0.61	50.4	
1954	163.026	364.8	407.0	5,620.	1,000.	0.7	52.8	
1955	165.931	398.0	438.0	6,107.	1,100.	0.8	56.2	95.3
1956	168.903	419.2	446.1	6,715.	1,300.	1.16	60.2	
1957	171.984	441.1	452.5	7,845.	1,400.	1.32	63.6	
1958	174.882	447.3	447.3	8,265.	1,550.	1.46	66.6	
1959	177.830	483.6	475.9	9,581.	1,680.	1.74	70.8	
1960	180.684	503.8	487.8	10,677.	1,730.	2.1	74.3	133.6
1961	183.756	520.1	497.3	12,375.	1,830.	2.7	77.4	141.7
1962	186.656	560.3	530.0	14,050.	2,030.	3.5	81.0	150.
1963	189.417	590.5	550.0	15,350.		4.0	84.4	159.2
1964	192.119	628.7	577.6	15,906.	3,135.	4.9	88.8	
1965	194.583	681.2	609.0 *	17,283.	3,412.	5.3	94.0	196. *
1966		710. *		19,000. *				
1967				21,000. *				
1968								
1969								
1970	206-211 *	850. *		29,000. *	6,000. *	15.5 *	120. *	270. *
1975	219-230 *	1,100. *		49,000. *	11,000. *	39. *	150. *	370. *
1980	233-252 *	1,400. *		83,000. *	20,000. *	100. *	180. *	490. *
1985	248-276 *							

September 26, 1966

- Taken from curve, * - projected

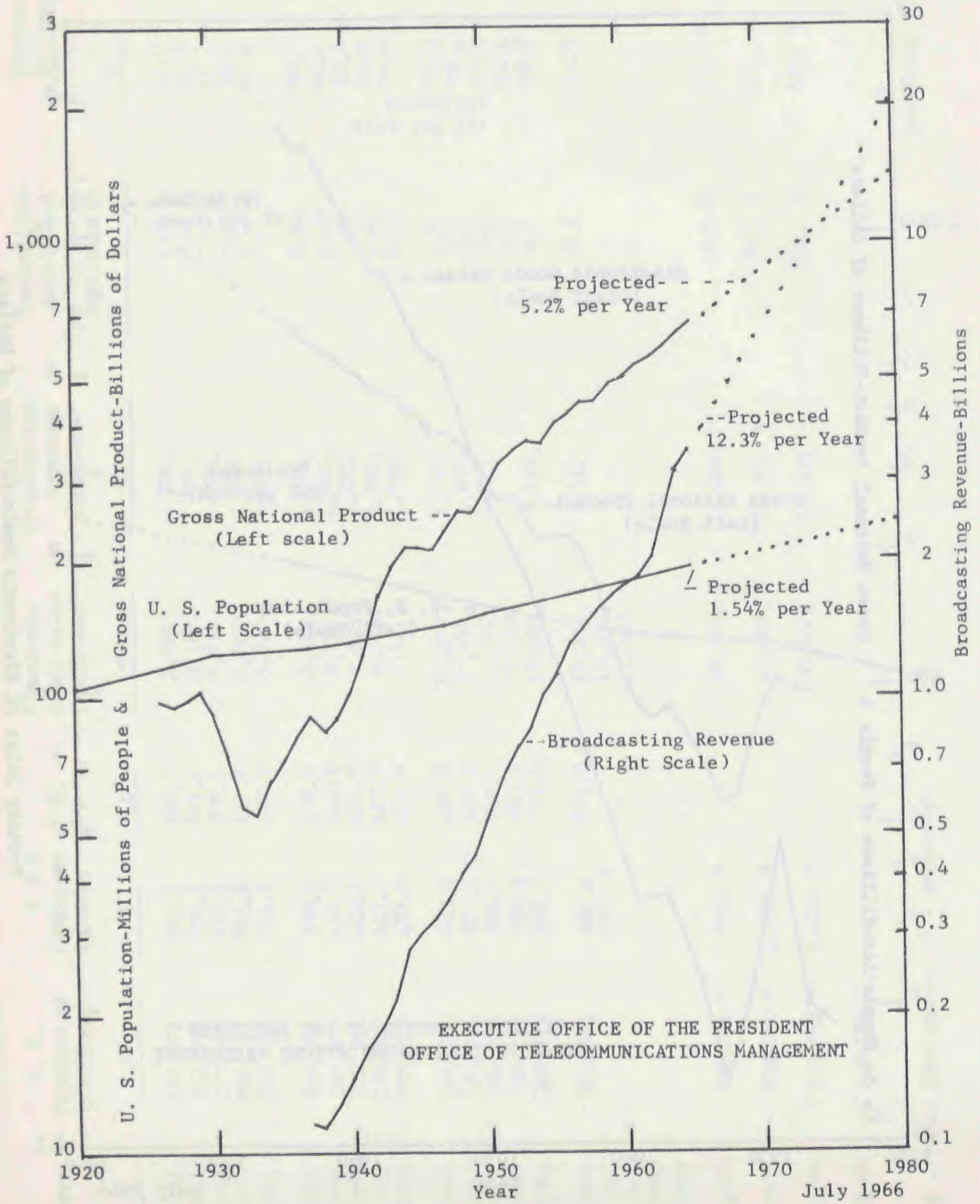
FACTORY SALES OF ELECTRONIC GOODS
compared with
U. S. POPULATION AND GROSS NATIONAL PRODUCT



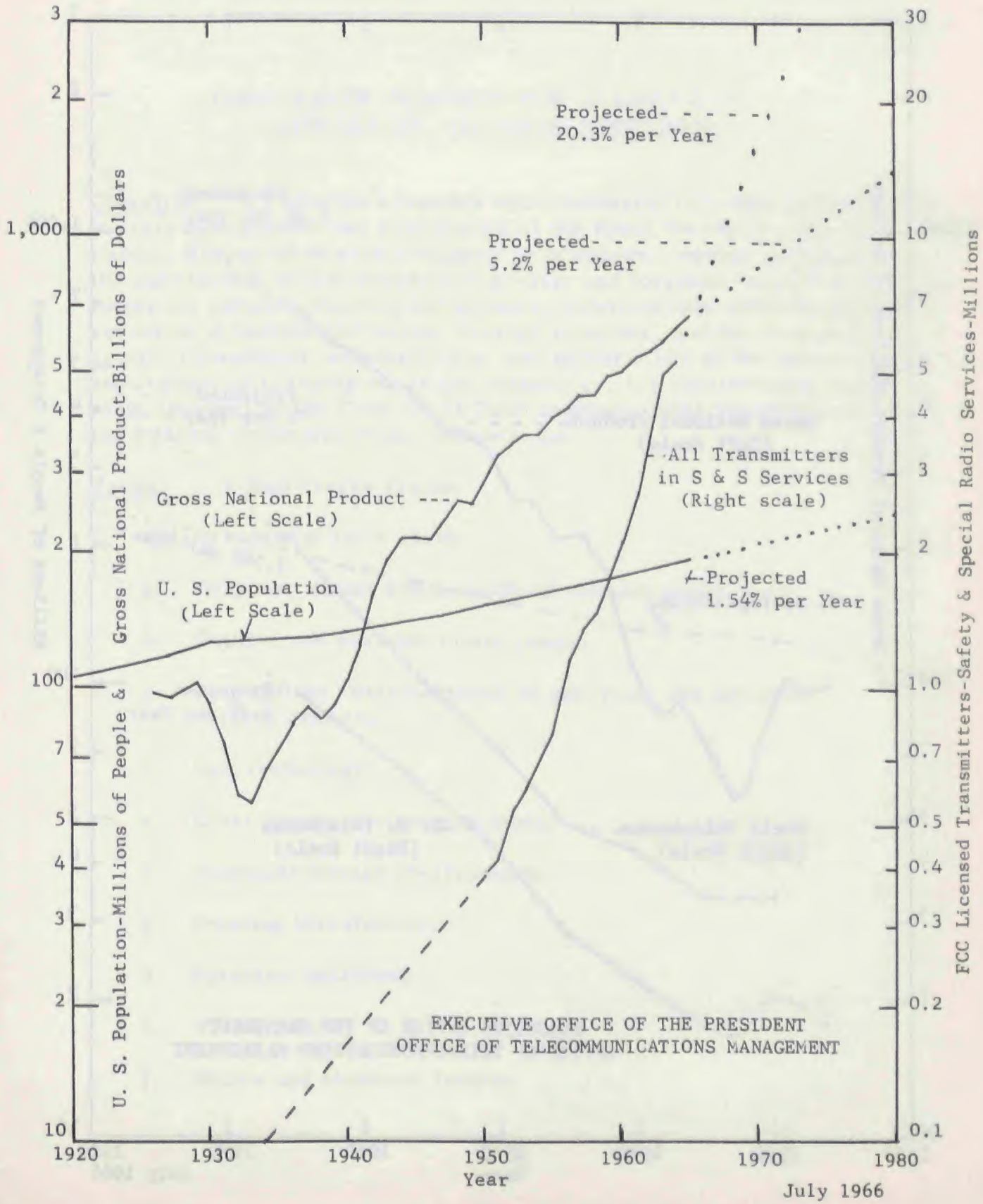
EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF TELECOMMUNICATIONS MANAGEMENT

July 1966

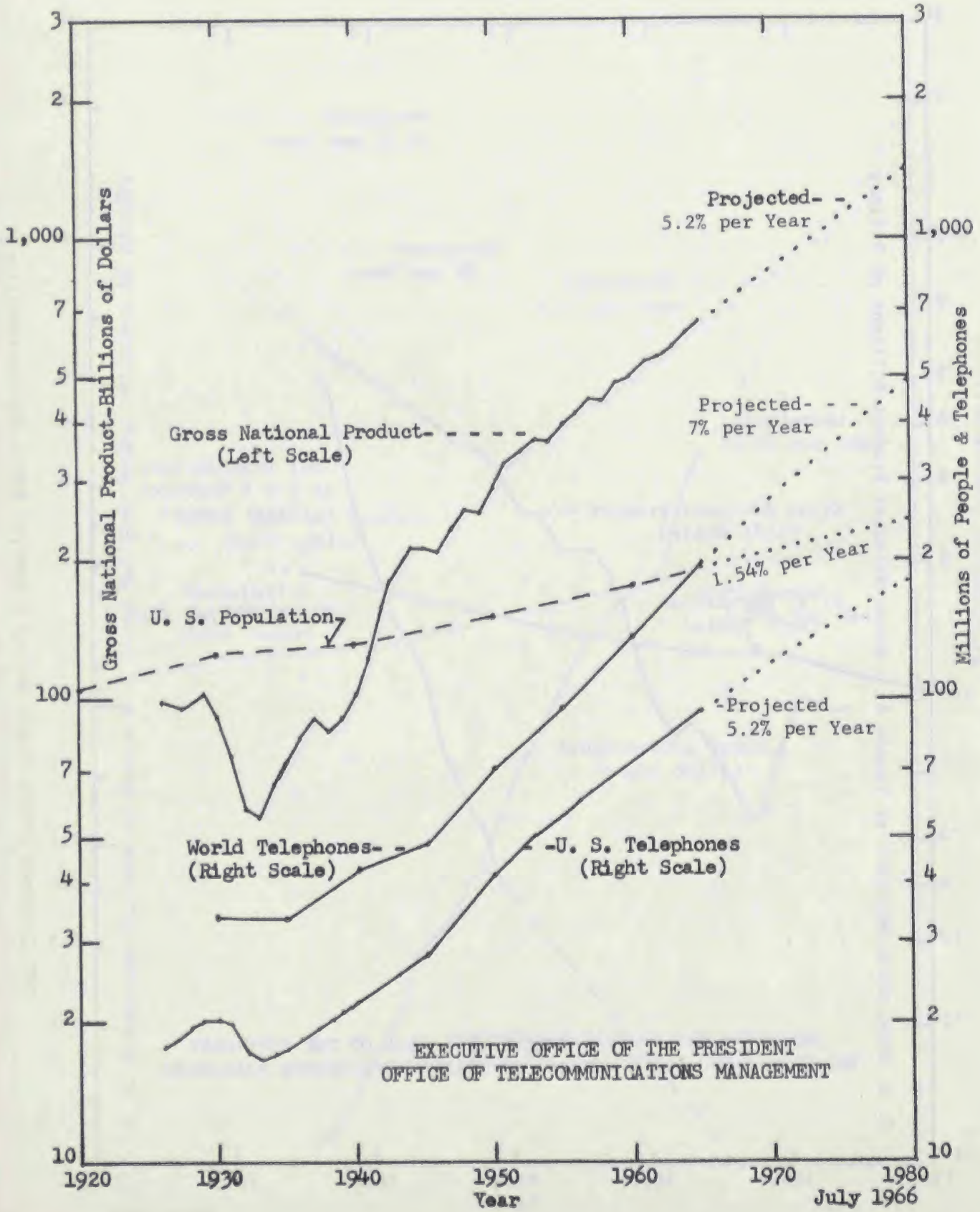
BROADCASTING REVENUES
compared with
U. S. POPULATION AND GROSS NATIONAL PRODUCT



FCC LICENSED RADIO TRANSMITTERS
SAFETY AND SPECIAL RADIO SERVICES
compared with
U. S. POPULATION AND GROSS NATIONAL PRODUCT



U. S. AND WORLD TELEPHONES
compared with
U. S. POPULATION AND GROSS NATIONAL PRODUCT



LONG-RANGE PLANNING FOR ALLOCATION AND USE OF THE RADIO SPECTRUM

Objective. To provide a feasible and continually available guide for the orderly development and exploitation of the Radio Spectrum (The Sixth Natural Resource) in such a manner as to ensure, insofar as practicable, the satisfactory accommodation of present and foreseen frequency requirements for national security and defense, safety-of-life and property, conservation of natural resources, foreign relations, and the economic, social, educational, entertainment, and political life of the Nation, in an atmosphere of changing needs and technology, for consideration and possible approval by the Director of Telecommunications Management and the Federal Communications Commission.

Tasks. Basic tasks are to:

1. Obtain essential facts about:

   a. Purpose, extent and intensity of present uses;

   b. Unfilled and possible future needs;

   c. Propagation characteristics of spectrum and spectrum sharing criteria;

   d. New technology;

   e. Other means of communication;

   f. Pertinent foreign involvements;

   g. Existing investments;

   h. Spectrum pollution;

   i. Trends; and

   j. Policy and economic factors.

2. Analyze and Evaluate the facts in Task 1 with respect to:

   a. Allocation, policy and economic problems;

   b. Allocation requirements (potential needs to be accommodated);

   c. Feasible alternative locations in the spectrum;

   d. Feasible changes in allocations and operations;

   e. Optimizing allocations; and

   f. Deficiencies to be satisfied by other means.

3. Draft a Practicable Long-Range National Table of Frequency Allocations:

   a. Using the most up-to-date technology of spectrum usage, apportion the use of the spectrum so as to optimize the relative values of the services determined to be in the national interest;

   b. Determine a feasible way gradually to reorganize the uses of the spectrum in accord with the foregoing, over a period of 10 to 20 years, thereby allowing a reasonable time for amortization of existing investments in operations which may be disrupted.

4. Effect DTM/FCC Coordination and Approval:

   a. FCC consideration;

   b. Necessary reconsideration of draft Plan; and

   c. Issuance of Long-Range Table of Frequency Allocations consistent with the ITU Table.

5. Determine whether and when a World Administrative Radio Conference will be necessary. If considered necessary:

   a. Draft proposals to the ITU;

   b. FCC consideration;

   c. Necessary reconsideration;

   d. Send recommended proposals to the Department of State;

   e. Assist the Department to coordinate the U.S. proposals with other countries;

   f. Prepare recommended positions to the U.S. Delegation to the WARC; and

   g. Implement the results of the WARC.

Who: Joint effort by the DTM/FCC, with the advice and assistance of:

The Frequency Management Advisory Council;

The Interdepartment Radio Advisory Committee;

The Joint Technical Advisory Committee;

Contractor(s); and

Industry.

When: Start in FY 1968 upon availability of funds and finish the initial plan (as far as the United States can go without a WARC) within three years.

Thereafter, maintain continuing review of the Table in the light of changing needs, economic and technologic developments, and effect desirable changes in such a manner as to provide a continuously available guide to the use of the spectrum, thereby making possible a minimum of 10 years to plan changes in operations and amortize existing investments.

STUDY IN CONNECTION WITH LONG-RANGE PLANNING FOR ALLOCATION AND USE OF THE RADIO SPECTRUM

Objective. As an essential step in a program to conduct long-range planning for the allocation and use of the radio spectrum in the national interest, to obtain the essential facts concerning certain aspects of the U. S. telecommunications media for 10 to 20 year projection of changes in the allocation and use of the spectrum, for which plans can be made a minimum of 10 years ahead for orderly rearrangement of radio operations and amortization of existing investments.

Specific Requirements. The Contractor shall use his best efforts to augment the data supplied by the Director of Telecommunications Management and the Federal Communications Commission, by obtaining the additional essential facts concerning the following aspects of U. S. telecommunications, necessary to a determination of whether the use of radio or other means of communication would be more in the national interest and as a basis for the development of a practicable long-range allocation plan:

1. Unfilled and possible future needs of all radio services other than the space services;

2. Means of telecommunication other than radio;

3. Existing investments in telecommunications systems;

4. Trends in needs, expansion, and technology; and

5. Economic factors which should be considered.

May 24, 1966

STUDY IN CONNECTION WITH LONG-RANGE PLANNING FOR ALLOCATION AND USE OF THE RADIO SPECTRUM

Objective. As an essential step in a program to conduct long-range planning for the allocation and use of the radio spectrum in the national interest, to obtain the essential facts concerning certain aspects of the U.S. telecommunications media for 10 to 20 year projection of changes in the allocation and use of the spectrum, for which plans can be made a minimum of 10 years ahead for orderly rearrangement of radio operations and amortization of existing investments.

Specific Requirements. The Contractor shall use his best efforts to augment existing knowledge with respect to:

1. Propagation characteristics of the various parts of the radio spectrum;

2. Optimum and possible location in the spectrum of the various radio services; and

3. Criteria for sharing frequencies among the various radio services, particularly between the space and terrestrial services and within the space services.

STUDY IN CONNECTION WITH LONG-RANGE PLANNING FOR ALLOCATION AND USE OF THE RADIO SPECTRUM

Objective. As an essential tool for day-to-day frequency management and long-range planning for the allocation and use of the radio frequency spectrum in the national interest, to develop methods, standards and criteria for making measurements of acceptable accuracy of power density and/or field intensity of all emissions in all parts of the spectrum below 40 Gc/s.

Specific Requirement. The Contractor shall use his best efforts to:

1. Ascertain existing approved techniques, methods and standards for making measurements of various emissions and power levels throughout the radio spectrum, whether measurements of power density (W/m^2) or field intensity (v/m);

2. Identify deficiencies in methods, accuracy or parts of the spectrum covered;

3. Devise methods, techniques, standards, and criteria, where practicable without the development of new equipments, for making reliable measurements of all emissions, including noise, and all signal intensities from 10^{-8} to 10 v/m in a 4 kc/s bandwidth in, any frequency band below 40 Gc/s, and,

4. Recommend research and development necessary to overcome any remaining deficiencies.

STUDY IN CONNECTION WITH LONG-RANGE PLANNING FOR ALLOCATION AND USE OF THE RADIO SPECTRUM

Objective. As an essential tool for day-to-day frequency management and long-range planning for the allocation and use of the radio frequency spectrum in the national interest, to determine the purpose, extent and intensity of present uses of the spectrum and to devise a methodology for relating those uses to records of authorized uses.

Specific Requirements. The Contractor shall use his best effort to:

1. On the basis of samples, analyze each generic radio service and type of radio operation within each service to ascertain the data and factors necessary to relate usage to authorizations;

2. In the light of the results of (1), analyze the Government and Federal Communications Commission records of frequency authorizations to ascertain what additional data, if any, are needed to relate actual usage to authorizations; and

3. On the assumption that the data found to be needed under (2) will be obtained and included in the basic data file, develop a methodology to express frequency usage in terms of power density, area, frequency and time, based on the Government and FCC records of frequency authorizations.

September 10, 1966

STUDY TO ESTABLISH A METHODOLOGY TO ASSIGN RELATIVE VALUES IN THE NATIONAL INTEREST TO UNITED STATES USE OF THE RADIO SPECTRUM

Objective. As an essential step in a program to conduct long-range planning for the allocation and use of the radio spectrum in the national interest, to establish a methodology for assigning a set of relative values in the national interest for the various uses which the United States can make of the radio spectrum.

Specific Requirements. The Contractor shall use his best efforts to:

1. Analyze each radio service and type of operation within each service to determine the value or benefit thereof to the Nation;

2. Ascertain the contribution of each radio service and type of operation within each service to the Gross National Product, both capital and annual operating; and,

3. Establish a methodology to express the relative value or importance to the Nation of each radio service and type of operation within each service, which the Director of Telecommunications Management and the Federal Communications Commission may use to assign relative importance indicators to each service and type of operation.

May 24, 1966

SOURCES OF DATA

Appendix 1 -- International Radio Regulations.

Appendix 2 -- The National Table of Frequency Allocations which is comprised of the U. S. Government Table of Frequency Allocations and the FCC Table of Frequency Allocations.

Appendix 3 -- Same as Appendix 2.

Appendix 4 --

U. S. Population -- Economic Report of the President, 1966, by the Council of Economic Advisers, Table C-19.

Gross National Product -- Ibid, Tables C-1 and C-2.

Factory Sales of Electronic Goods -- The Electronic Industries Association (EIA).

Broadcasting Revenues -- Analysis prepared for The Interdepartmental Committee for Atmospheric Sciences, October 1964, (Statistics developed by the BDSA, Department of Commerce) and the National Association of Broadcasters.

FCC Licensed Transmitters-Safety and Special Services -- Federal Communications Commission.

Telephones -- Statistics of Common Carriers, FCC; The World of Submarine Cables and Satellite Communication - T. B. Westfall, Executive Vice-President, I. T. & T., paper presented at the Keynote Panel Session of the Institute of Electrical and Electronics Engineers Communication Conference, Philadelphia, Pa., June 15, 1966.

UNITED STATES GOVERNMENT

Memorandum

TO : Dr. C. T. Whitehead DATE: 9 May 1969

FROM : IOP/PA - William N. Lyons

SUBJECT: Report of the President's Task Force on Communications Policy

This morning Abbott Washburn and I reviewed his recommendations to you concerning the release of the Report on Communications Policy.

We agreed particularly that if and when the decision is made to release, it should be in a low-key, routine fashion, and that it would be helpful if, in response to a question, Mr. Ziegler would lump this together with other reports that are under consideration.

If Mr. Washburn's recommendations are adopted, and I trust they are, and if Mr. Ziegler is asked, "What other reports?" as he might well be, here is a list that possibly could be helpful:

White House Task Force on Educational Television in Less Developed Countries (Leonard H. Marks chairman), "Final Report to the President," of June 26, 1967;

President's Communications Policy Board, "Telecommunications - A Program for Progress"

Relevant portions of the Landis Report, "Report on Regulatory Agencies to the President-Elect"

Planning Research Corporation, "Study of Federal Telecommunications Management"

OTM, "Report on Frequency Management within the Executive Branch of the Government

OTM, "National Telecommunications Management Responsibilities of the Presidency"

Joint Technical Advisory Committee, "Spectrum Engineering - The Key to Progress"

Herman W. Land Associates, "Television and the Wired City"

Congressional Report, "Modern Communications and Foreign Policy"

FCC, "Survey of the Telecommunications Industries"

DEPARTMENT OF STATE

Washington, D.C. 20520

May 9, 1969

MEMORANDUM FOR : Dr. C. Thomas Whitehead,
Special Assistant
to the President,
The White House.

SUBJECT : Release of the Rostow Report.

I have reviewed the attached memorandum with Dr. Lyons. He is in accord with it, and made some very helpful suggestions.

Dr. Lyons checked earlier with GPO. Their normal time for such a job: eight weeks. However, a request from the White House would greatly speed this up -- to perhaps ten days to two weeks.

Jim O'Connell's dissent is classified: "Confidential Until Released by the President." If the decision is to release the Report, Jim should be asked to declassify his dissent so that it may be included. (His extensive quote from Galbraith's book should probably be omitted to avoid copyright problems.)

Disposition of the contract studies is a separate problem. They occupy an entire file drawer. Dr. Lyons recommends:

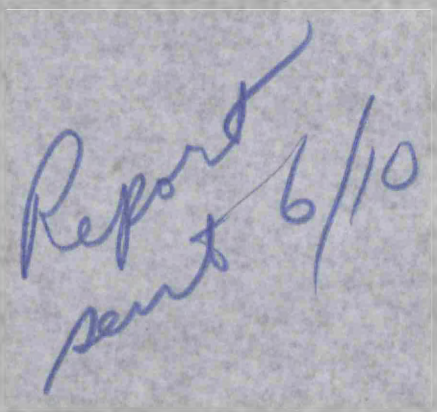
That permission be given to the various contractees (Tempo, et al) to make them available upon request.

A.W.

Abbott Washburn
Deputy Chairman, U.S. Delegation
INTELSAT Conference

Wednesday 5/7/69

3:55 Mrs. Slager in Sen. Curtis' office (Nebraska) called to find out whether they could have a copy of the Rostow Report. They would like to be notified when it is released. 225-4227



Telecommunications

Mtg. 5/7 -- 11:30 a.m.

2:45 General O'Connell and Charles Lathey will come over tomorrow morning at 11:30 to brief you on our emergency civilian communications -- including systems in being, responsibilities, and in particular, the role of the FCC vis-a-vis OEP.

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

Telecommunications

May 7, 1969

MEMORANDUM FOR

Mr. Rosel Hyde
Chairman
Federal Communications Commission

As we have discussed, the communications industry presents many unique problems for our Nation. Our national policy for communications has evolved over many years and to the best of my knowledge has not been succinctly stated in any one place.

Would you please prepare an informal, short statement of what our national communications policy is, as expressed in statutes, executive orders, Presidential statements, and FCC rulings and precedents. This should particularly include the authority for the various key elements of our policy; to the extent possible, the rationale; and also any important gaps.

Signed

Clay T. Whitehead
Staff Assistant

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

CTWhitehead:ed

5/7/69

Tom will call Lew Berry

225-
3641

5/8
they talked

Telecommunications

Wednesday 5/7/69

3:55 Mrs. Slager in Sen. Curtis' office (Nebraska) called to find out whether they could have a copy of the Rostow Report. They would like to be notified when it is released. 225-4227

Copy for Mr. Whitehead

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

OFFICE OF THE DIRECTOR

May 7, 1969

MEMORANDUM FOR THE DIRECTOR:

In accordance with our current procedure, I am pleased to transmit this report of the significant activities of this office for the period ending May 6.

J. D. O'Connell

Enclosure

May 6, 1969

WEEKLY ACTIVITY REPORT NO. 64

SATELLITE COMMUNICATIONS

1. INTELSAT Conference Activities

Members of the OTM staff have continued activities relating to the INTELSAT Conference. These include a meeting of the Working Group with Governor Scranton on April 29 and the review of proposed position papers prepared by the FCC, the Department of State and the Communications Satellite Corporation. A proposed position paper on the U. S. policy and objectives concerning Definitive Arrangements for the continued development of the Single Global Commercial Satellite System was provided to Governor Scranton and other members of the U. S. Delegation Working Group on May 2. Governor Scranton reviewed the most important position papers with the Policy Group (the DTM, the Chairman of FCC, the Department of State and the Chairman of the COMSAT Corporation) on May 6.

NATIONAL TELECOMMUNICATIONS

*1. Briefing on Electro-Magnetic Pulse (EMP)

A classified briefing by the Bell Telephone Laboratories on the subject of the Electro-Magnetic Pulse (EMP) was presented on 5 May, and was attended by the Director and Deputy Director, OEP, and Deputy Director J-6 of the Joint Chiefs of Staff, and concerned members of the OEP, ODTM and J-6 Staffs.

*2. Non-Emergency Use of the Interagency Communications System (ICS)

At the request of the Director, OEP, a preliminary appraisal of possible options for non-emergency use and exercise of the Interagency Communications System was prepared and submitted to his office.

*3. Follow-up Review of Communications Capability during Periods of Electrical Power Failure

At the request of General Lincoln, a review has been undertaken of remedial actions taken, planned, and yet to be identified as a result of recommendations following a study of communications operations during the massive Northeast power failure in November 1965.

Information has been requested from the domestic and international communications carriers, from the National Communications System, and from selected Government agencies having primary responsibilities for communications and emergency electrical power. The responses, which are expected in the next few days, will be used to structure a report of the current national communications capability and actions of communications in the event of future power outages.

*4. Presidential Conferencing

In response to an OEP inquiry, a proposal for providing a Presidential teleconferencing capability to all Governors, the Virgin Islands and Puerto Rico has been submitted.

FREQUENCY MANAGEMENT

1. National Committee of CCIR

On May 1 OTM representatives participated in the National Committee Meeting of the International Radio Consultative Committee (CCIR), source of U. S. inputs to the international body which serves as the principal technical advisory organization to the International Telecommunication Union. Extensive documentation was approved for transmittal to the ITU and distribution to its 135 member nations, building the initial technical foundation necessary to the conduct of the forthcoming World Administrative Radio Conference on Space Telecommunications.

2. Electromagnetic Radiation Management Advisory Council

On May 1 the second meeting of the DTM's Electromagnetic Radiation Management Advisory Council (ERMAC) was held. This body (composed of experts in the disciplines of medicine, the life sciences and electronics) provides assistance to the DTM in determining what is the true magnitude of the effects of using the electromagnetic spectrum upon people and materials. At the meeting under report, primary consideration was given to how the current radiation limit (10 milliwatts per square centimeter) was determined as being that level above which harmful effects to human beings might take place. Information was also received of the efforts of other nations in this area, particularly the Soviet Union. Considerably more work is needed in this area before truly valid criteria will be available.

3. Liaison with Industry

On May 1 an OTM representative met with General Electric Corporation representatives who were seeking information on trends in uses, requirements, and allocations in the frequency bands used by Government land mobile systems. Within the bounds of propriety, they were informed of trends in space, meteorology, oceanography, and radio astronomy which are beginning to have an impact on land mobile frequency bands. The GE representatives appeared to be in a position to influence the design of equipments and the opportunity was taken also to inform them of OTM provisions on standards and frequency channeling. In addition, in response to their question as to whether it is desirable for equipment sold to foreign countries to be designed with the same high standards as those required in the United States, they were informed that the quality of such equipment has a direct bearing on U. S. proposals to international radio conferences, e. g., we cannot expect countries to support higher standards if they are using outmoded U. S. equipment with lower standards.

* 4. Telecom Bulletin

On May 1 the DTM issued a Telecom Bulletin designed to initiate an improvement in field level selection and coordination of the use of radio frequencies. The initial procedure is limited to use of the band 1435-1535 MHz in the area of cognizance of the Navy frequency coordinator at Pt. Mugu, California. On May 2 an approach was made to the Army and the Air Force to determine the feasibility of establishing a similar procedure in the areas of cognizance of the frequency coordinators at White Sands Missile Range, New Mexico, and Patrick Air Force Base, Florida.

* 5. Preparation for Space WARC

As a part of the continuing effort to prepare a sound U. S. position for the forthcoming World Administrative Radio Conference on Space Telecommunications, the OTM on May 6 convened a meeting of Department of Commerce and military representatives in order to resolve a potential conflict between military radar systems and proposed meteorological satellite operations of the Department of Commerce. A satisfactory disposition of the problem resulted.

6. Research Brief

On May 7 OTM representatives briefed personnel of the MITRE Corporation (a primary research study contractor for the DOD) on the current situation as regards competing radio services through-

out the radio spectrum. This information was sought in order that meaningful recommendations may be made by MITRE in response to their Government contracts.

7. Telecommunications for the Handicapped

OTM arranged for and a representative participated in two meetings concerned with use of telecommunications to aid the handicapped. One meeting, held April 30, was with representatives of the Electronic Industries Association and the President's Committee on Mental Retardation. The other, held May 2, was with representatives of the Council of Organizations Serving the Deaf and the National Association of Broadcasters. The subject of the first meeting was to find means for harnessing electronics technology to assist with the diagnosis, care, and training of the mentally handicapped. The other meeting was to seek assistance of the Broadcasting industry in implementing techniques that would bring the pleasures of television to nearly 20 million hearing handicapped persons in the U. S.

* Items considered of special interest to the Director, OEP

Telecommunications

May 6, 1969

MEMORANDUM FOR THE RECORD

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

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

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

Clay T. Whitehead
Staff Assistant

CTWhitehead:ed

May 6, 1969

Dear Mr. Russell:

Thank you for the additional materials you sent on emergency alerting procedures. I am glad to know of some of our activities in this area.

I would, of course, find it interesting to talk with you at more length on some of these matters, but I am afraid the entire month of May looks unbelievably busy. May I suggest that you contact General James O'Connell, the Director of Telecommunications Management, and Special Assistant to the President for Telecommunications in the Office of Emergency Preparedness. His office is directly responsible for these matters and you will find him much more informed than I. I have forwarded to him the materials that you have sent me.

Sincerely,

Clay T. Whitehead
Staff Assistant

Mr. Stephen A. Russell
Vice President
International Electric Corporation
625 2nd Avenue South
Minneapolis, Minnesota 55402

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

CTWhitehead:ed

INTERNATIONAL ELECTRIC CORPORATION
625 2nd Avenue South
Minneapolis, Minnesota 55402
Tel. (612) 332-5387

May 1, 1969

Dr. Clay T. Whitehead
Special Consultant to the President
The White House
Washington, D.C.

Dear Dr. Whitehead:

I spoke to your secretary on April 23 concerning a meeting with you sometime this week to discuss the progress of an emergency alerting system for the general public. After that conversation I realized our meeting would be more meaningful if you had sufficient information prior to our meeting to further orient you to this subject.

The enclosed information will apprise you of the system we are proposing to the FCC as compared to NIAC's system, as well as OCD's interim solution for emergency alerting of the general public known as the Crisis Home Alert Technique (CHAT). The CHAT concept is a system being proposed to serve as an interim warning technique while the OCD's Decision Information Distribution System (DIDS) is being developed.

I believe our system adopted by the FCC for use in the Emergency Broadcast system would be a far superior interim solution that could be instituted without cost to the government. The enclosed speech by Clark George, the President of CBS Radio, enumerates the need and broadcaster's enthusiasm for "some" solution in the near future.

If possible, I would appreciate an opportunity to meet with you any time during the week of May 12 to discuss our emergency warning solution. Would you please let me know if you might be available.

Very truly yours,

Stephen A. Russell
Vice President

SAR:djl

May 6, 1969

MEMORANDUM FOR GENERAL O'CONNELL

Attached are some materials which I have received from Mr. Stephen A. Russell, Vice President of International Electric Corporation. Since these pertain to emergency broadcast procedures, I thought I should refer them to you.

I have also attached a copy of a letter to Mr. Russell, which indicates that he may be in touch with you.

Clay T. Whitehead
Staff Assistant

Attachments

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

CTWhitehead:ed

May 6, 1969

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Clay T. Whitehead
Staff Assistant

Attachments

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

CTWhitehead:ed

THE WHITE HOUSE

WASHINGTON

copy letter only
for Flanigan &
mark FYI.

cy sent to
Mr Flanigan
5/7/69

Telecommunications

AMERICAN BROADCASTING COMPANIES, INC.

1330 AVENUE OF THE AMERICAS · NEW YORK, N. Y. 10019 · LT 1-7777

EVERETT H. ERLICK
GROUP VICE PRESIDENT AND GENERAL COUNSEL

May 5, 1969

Mr. Clay T. Whitehead
Room 103
Executive Office Building
17th Street & Pennsylvania Avenue, N.W.
Washington, D.C. 20005

Dear Clay:

First, I would like to express my appreciation for the time spent with me last week and for your courtesy and consideration. I was sorry not to have been able to spend a little time with Peter Flanigin and look forward to that in the near future.

You will recall my having mentioned to you legislation which has been proposed in the Congress to establish orderly procedures for the consideration of applications for renewal of broadcast licenses. I am enclosing for your information a copy of one such bill, H.R. 10461. Similar bills have now been introduced by over 20 Congressmen.

Senator John Pastore also favors such legislation and last week introduced S. 2004, to the same effect.

During our conversation on this general subject, you asked whether or not a third party would be prevented by the terms of such a bill from bringing public interest matters to the Commission's attention at renewal time or at other times. I have taken the liberty of asking our Washington FCC Counsel to prepare a brief memorandum (enclosed) on this question which I hope will be responsive to your question.

As I indicated, I will be very happy to discuss with you, Peter Flanigin, or others, at any time, questions on which our views might be of interest.

Again, thanks for your consideration and kindest regards.

Sincerely,

Everett

Everett H. Erlick

Enclosures:

91ST CONGRESS
1ST SESSION

H. R. 10461

IN THE HOUSE OF REPRESENTATIVES

APRIL 23, 1969

Mr. LUJAN introduced the following bill; which was referred to the Committee on Interstate and Foreign Commerce

A BILL

To amend the Communications Act of 1934 to establish orderly procedures for the consideration of applications for renewal of broadcast licenses.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 309 (a) shall be amended by adding the following after the final sentence thereof: "Notwithstanding any other provision of the Act, the Commission, in acting upon any application for renewal of license filed under section 308, may not consider the application of any other person for the facilities for which renewal is sought. If the Commission finds that the public interest, convenience, and necessity would be served thereby, it shall grant the renewal application. If the

not done to restrict Soviet fishing activity.

Recently, I received a complaint from one of my constituents, Capt. Julian A. Penello, of Portsmouth, Va. Captain Penello tells me that the large Soviet fishing vessels are now present off the Virginia Capes with nets having a capacity of 50,000 to 100,000 pounds of fish. He told me that he had seen these vessels take as much as 100,000 pounds of fish within an hour's time. Frequently, they move among our own fishing vessels and within 1 or 2 hours, all of the fish were gone. There is strong evidence that the Soviets are violating their agreements with us which protect certain species of fish. Captain Penello told me that the large Russian factory ships frequently intimidate the smaller American vessels and force them out of the way.

How much longer are we going to behave in this craven fashion? We permit our aircraft to be shot down and our ships to be seized in regions where they have a right to be. Now Red ships are depriving our own fishermen of their livelihood almost in sight of our own shores.

CONGESTION AT AIRPORTS

(Mr. CAHILL asked and was given permission to address the House for 1 minute and to revise and extend his remarks.)

Mr. CAHILL. Mr. Speaker, one of the great frustrations and I think imminent dangers to the citizens of the eastern part of the United States and perhaps throughout the entire United States is the congestion at airports.

I have made a study of this, and I have become convinced that one of the problems is the inadequate legislative authority for the CAB to regulate the scheduling of airlines. As a result, we now have foolish competitive scheduling which is reducing the payload in the airplanes to about 50 percent and is bringing about dangerous congestion and frustrating delays at all major airports.

I have therefore today introduced legislation to empower Federal regulatory agencies to take effective action to remedy this problem. I would welcome the support of the membership in bringing this essential aid to the citizens who rely on air travel.

FILING FOR RADIO STATIONS

(Mr. LUJAN asked and was given permission to address the House for 1 minute and to revise and extend his remarks.)

Mr. LUJAN. Mr. Speaker, a situation in the broadcast industry has been called to my attention by radio stations in my congressional district, which seems to be extremely unfair.

I am told that under present laws of the Federal Communications Commission, it is possible for an individual or group to file for a station's license at the time of license renewal, even though the present licensee is found by the FCC to have served his area in the public interest. This means hearings can be held pitting performance against promises. If this becomes common practice, practically every radio and TV station in the country will be subjected to costly hearings once every 3 years when it comes time to renew their license.

This right of the Federal Communications Commission has never been exercised to the extent of an existing station's license being given to another who promised more, but under present law it can happen. It is my understanding some members of the present Commission favor this method of determining licensees.

I am not an expert on communications, Mr. Speaker, but I would like to introduce this bill which calls attention to the program. It is my hope that through the bill's introduction, there will be study and debate, and through this process a decision will be made that is fair to all.

CENSUS QUESTIONNAIRE CHANGES

(Mr. MIZE asked and was given permission to address the House for 1 minute and to revise and extend his remarks.)

Mr. MIZE. Mr. Speaker, in view of the controversy which has arisen about plans for the 1970 census of population and housing, I am grateful to receive from the Secretary of Commerce, the honorable Maurice H. Stans, a letter and an accompanying factual statement of what is actually contemplated. The Secretary's communication clearly sets forth the Nation's needs for accurate statistics as well as showing a desire to conform to some of the most frequently voiced wishes of the Congress. I am also glad to note his decision to alter procedures in the interest of our present trend toward economy in government.

This is evidence that progress is being made in developing a questionnaire to give the Government agencies the essential information they need without placing an undue burden upon the respondents. In my opinion we must continue to evaluate these fact-gathering procedures looking toward further simplification and less compulsion, but I certainly commend Secretary Stans and his staff for their consideration of the complaints which have been raised and their responsiveness in doing something about them.

FINANCIAL DISCLOSURE

(Mr. PRICE of Illinois asked and was given permission to address the House for 1 minute.)

Mr. PRICE of Illinois. Mr. Speaker, now that the Ides of April deadline—if we can stretch a bit and call April 15 the Ides of April—has been met, or so I trust, I should like to call attention to another deadline.

Under the rules of the House, as amended last year, April 30 is the deadline for the filing of financial disclosure reports with the Committee on Standards of Official Conduct, of which I have the honor to be chairman.

Forms for making these reports were mailed early this year, with instructions, to all Members, officers, members of the professional staffs of committees, and principal assistants, so far as the latter had been designated at that time, to Members and officers. Additional forms, if needed, may be obtained from the committee offices.

Only 1 week remains for the filing of these reports, so time is fleeting for Members and others who have not complied. They should get their reports to the committee offices at 2360 Rayburn Building as promptly as possible. The committee staff will be glad to help in any way possible.

Since part A of these reports must be maintained, under the rules of the House, for responsible public inquiry, it follows that the identity of delinquent filers, if any, may become public property. In other words, if the committee staff cannot supply, on request, the reports of specified Members or employees, it will have no alternative to telling the inquirer that the requested reports have not been filed.

The committee urges, therefore, that all who are required to file make sure that their reports reach the committee offices before the close of business on Wednesday, April 30.

COMPENSATION OF ATTORNEY REPRESENTING HOUSE IN ADAM CLAYTON POWELL CASE

(Mr. CONYERS asked and was given permission to address the House for 1 minute and to revise and extend his remarks.)

Mr. CONYERS. Mr. Speaker, I take this moment to point out to the House that in yesterday's Washington Post we were advised that an attorney representing this House of Representatives in the Adam Powell case, now before the Supreme Court, was to be compensated some $200,000 for representing the House.

It occurs to me that the Solicitor General might have been the more appropriate person to represent this House, and it would have been cost free.

Considering some of the working conditions and inadequate compensation which presently attain with respect to many of the House employees in the cafeteria and other areas of employment here, this money could have been much more wisely spent for some more useful purpose, rather than hiring New York counsel to represent the House of Representatives.

I think this is a very serious matter, and I take exception to this wasteful expenditure of funds.

PERSONAL MANAGEMENT

(Mr. MOSS asked and was given permission to address the House for 1 minute.)

Mr. MOSS. Mr. Speaker, due to other obligations, it was not possible for me to be present on the House floor last week when this body passed H.R. 4148, the Water Quality Improvement Act of 1969.

Had I been present when the vote was taken on this measure, I would have voted "yea".

Section 310(b) of the Communications Act, as amended by Congress in 1952 (47 U.S.C. Sec. 310(b)), precludes the Commission, when it passes on an application for the transfer or assignment of a broadcast license, from giving comparative consideration to an application by a third party for said facility. Polan Industries, 10 RR 519, 521, (1954). This provision does not prevent a third person from interposing public interest objections to a grant of a requested assignment or transfer. And if such objection (going to the qualifications of the present licensee) is subsequently sustained, it could result in a forfeiture or revocation of an existing license, leaving the facility open to new applicants. See KPSR, Inc., 33 FCC 391, 23 RR 1179 (1962); FCC v. WOKO, 329 U.S. 223 (1946).

A number of bills are presently pending in Congress which would similarly preclude the Commission, in acting upon an application for renewal of license, to "consider the application of any other person for the facilities for which renewal is sought." And just as in the case of transfer and assignment applications, such a provision would not prevent a third person from bringing public interest matters to the Commission's attention -- at renewal time or at other times. See United Church of Christ v. FCC, 123 U.S. App. D.C. 328 (1966);

47 U.S.C. Sec. 309(d). If those objections are sustained and the license not renewed, other interested persons could at that juncture file for the facilities in question, under the legislative amendment currently being proposed.

by Don Durgin, president of NBC-TV, a major presentation will be given the morning of May 13 on the network's current activities and plans for the 1969-70 season.

The May 12 formal business will be a panel session featuring NBC news correspondents from news centers in the U.S. and abroad. Among the social events on the agenda are receptions and dinners at two production studio centers—at 20th Century-Fox May 12 and at Universal studios May 13. Convention activities will be held at the Century Plaza hotel.

The convention starts with a reception and buffet at the hotel Sunday evening. Mr. Scott and Mr. Goodman are luncheon speakers May 12 and 13 respectively and Mr. Durgin's talk will precede his formal presentation on May 13.

The attendance figure was projected by Donald J. Mercer, vice president, station relations, NBC, who will be joined at the convention by the following station relations officials: Raymond T. O'Connell, director, and station relations regional managers Joseph Berhalter, Thomas Berresford, A. A. (Tony) Cervini, William Kelley, Malcolm (Bud) Laing, Pierson Mapes, Paul Rittenhouse and Thomas White.

Times-World sells WDBJ-TV for $8 million

The Times-World Corp., Roanoke, Va., which intends to sell its newspapers to Landmark Communications, last week found a buyer for its WDBJ-TV. The station will be sold to the *South Bend* (Ind.) *Tribune* (WSBT-AM-FM-TV South Bend) for approximately $8 million, subject to the usual FCC approval.

Still in negotiations are the sale of WDBJ-AM-FM, both of which will be sold separately. After Times-World and Landmark agreed on the purchase of the Roanoke operation, which includes the *Roanoke Times* and *World-News* (BROADCASTING, Nov. 18, 1968), it was decided to spin off the broadcast properties. The spin off is due principally to the overlap between WDBJ-TV and Landmark's WFMY-TV Greensboro, N.C.

The Times-World Corp., headed by M. W. Armistead III, also owns a Roanoke shopping center and a semi-weekly newspaper in Galax, Va. Franklin D. Shurz is president of the buying group, which owns the *South Bend Tribune* and WSBT-AM-FM-TV. Other *South Bend Tribune* newspapers include the *Hagerstown* (Md.) *Herald-Mail*, California's *Indio Daily News*, *Brawley News*, and *El Centro Imperial Valley Press*, as well as Indiana's *Bloomington Herald-Telephone* and *Bedford Times-Mail*.

Landmark owns WTAR-AM-FM-TV Norfolk, Va., in addition to its Greensboro TV outlet, and Telecable Corp., owner of CATV systems in Alabama, North Carolina and West Virginia. Landmark newspapers are *Norfolk Virginian-Pilot*, and *Ledger-Star* and *Greensboro Daily News* and *Record*.

Pastore submits antistrike bill

Action on measures to protect licensees may be in offing

Senator John O. Pastore (D-R. I.) stuck a substantial prop last week under a "sword of Damocles" threatening broadcasters at renewal time. The Senate Communications Subcommittee chairman, who holds the key to Senate consideration of anti-strike-application legislation sought by broadcasters, introduced a slightly modified version of a bill that would bar competing applications for renewal of licenses unless the FCC first found the incumbent had not been serving the public interest.

The Pastore bill (S.2004) would confine the commission's determination of whether an existing broadcaster had been operating in the public interest to an examination of the "record and representations of the licensee." If the FCC found it should deny a renewal, the bill makes clear, then other applications could be filed and considered.

The Pastore move, which came without advance notice, fed speculation that the measure, approved by the National Association of Broadcasters and supported by individual and group stations, would see its first steps toward enactment taken in the Senate, rather than in the House, where—as of last Thursday (May 1)—a number of similar bills had been introduced.

Although a number of House Commerce Committee members have sponsored or cosponsored renewal bills, such support has yet to come from members in the committee leadership. Also, it is noted, the House committee faces a jammed agenda, caused in part by three solid weeks of hearings on cigarette labeling and advertising (see page 28).

The Senate committee is busy, too, but spokesmen wouldn't rule out some sort of action on the Pastore bill within the near future. It was understood, however, that plans for further consideration had not yet been formulated. They may or may not take the form of hearings. The Senate subcommittee has already aired the issues during appearances of the FCC and broadcasting leaders (BROADCASTING, March 10, 24).

At those hearings, and later at the annual convention of the NAB (BROADCASTING, March 31), Senator Pastore made it clear that he regarded the encouragement of competing applications to be unfair and bad policy. At the hearings, the FCC commissioners, with two notable exceptions, took turns agreeing. Later it was indicated that the commission could, by re-establishing a policy torn asunder by the WHDH-TV Boston decision, repair the damage without resort to a legislative solution, which was then in the formative stage.

Decisions, at the NAB and elsewhere, to continue to push for antistrike legislation—while other approaches were also explored, such as policy or personnel changes at the commission—led to the introduction of the first bills three weeks ago in the House. Meanwhile, Senator Pastore kept his own counsel on the legislative approach, until last week when he submitted S. 2004.

As is Senate custom, other senators, although expressing interest privately in the legislation—sparked by vigorous contacts from home-state broadcasters—refrained from expressing that support publicly. Now, it is said, indications of that support from other senators can be expected to be communicated to Senator Pastore.

In introducing the bill, Senator Pastore said he was particularly concerned about the financial burden on stations exposed to competing applications, which almost automatically trigger costly comparative hearings.

He called the threat of competing applications a "sword of Damocles" hanging over the heads of legitimate licensees.

Echoing sentiments expressed in his March 24 speech at the NAB convention in Washington, the senator underlined the fact that "broadcasters must maintain the best and most modern equipment and gather together highly qualified professional personnel in order to best serve the public interest." This outlay, he declared, must be backed by "reasonable assurance that, if [the broadcaster] does his job—and does it well—then his license will be renewed and that his investment will not go down the drain." Senator Pastore emphasized that the burden of proof would remain with the broadcaster under the proposed measures, and that "this legislation does not give the broadcaster a license in perpetuity."

The Pastore bill extends the scope of the three-week-old campaign that had, by May 1, seen bills introduced or cosponsored by 39 congressmen in the House (BROADCASTING, April 28, 21).

The sponsors and cosponsors of these bills, 27 Republicans and 14 Democrats, represent 22 states. Last week's bills were introduced by Commerce Committee member Tim Lee Carter (R-Ky.), H. R. 10583; Edwin W. Edwards (D-La.), H. R. 10587; William Nichols

(D-Ala.), H. R. 10605; Alexander Pirnie (R-N. Y.), H. R. 10609; John R. Rarick (D-La.), H. R. 10613; William St. Onge (D-Conn.), H. R. 10619; James C. Wright (D-Tex.), H. R. 10629; William E. Brock III (R-Tenn.), H. R. 10636; Martin B. McKneally (R-N. Y.), H. R. 10684; Charles E. Chamberlain (R-Mich.), 10668; Page Belcher (R-Okla.), H. R. 10712; George Bush (R-Tex.), 10720; W. R. Hull Jr. (D-Mo.), H. R. 10734; Joe D. Waggonner Jr. (D-La.), H. R. 10760, and Watkins M. Abbitt (D-Va.), H. R. 10781.

WHA gets CPB grant for audio studies

A $50,000, one-year grant from the Corp. for Public Broadcasting will establish a national center for audio experimentation at the University of Wisconsin's noncommerical WHA Madison.

CPB President John W. Macy Jr. said the project is aimed at developing "new and exciting techniques in sound production that can be applied by all public radio stations and thus help promote a strong and vigorous public radio service nationally."

Karl Schmidt, associate director for radio at the university, will head the project, aided by Milburn Carlson, film producer and teacher of aesthetics and creative writing at San Francisco State College, who will join the station for a year.

Kentucky ETV network plans for expansion

One of the more extensive and ambitious state-operated educational TV networks will be formally dedicated this week (May 7-9) at a regional conference co-sponsored by the National Association of Educational Broadcasters and the Southern Educational Communications Association in Lexington, Ky.

Culminating nine years of planning and only one year of implementation spearheaded by the network's executive director, O. Leonard Press, the new Kentucky ETV Network began operating Sept. 23, 1968, by pumping 19 courses into more than three-quarters of the state's 195 school districts.

The network, funded with $4.5 million biannually, reaches into 1,400 schools from the poverty pockets of Appalachia to the Mississippi river border. The system reaches homes via 12 transmitters on channels ranging from 21 to 54. With additional funding, KETV may eventually become a 26-station network.

Ambitions do not rest here but include a plan to interconnect the state's six universities and colleges and numerous junior colleges—with studios for originating programs at each—with the network's $1.2-million production center in Lexington.

The main center was built on land donated by the University of Kentucky.

While a 12-station network is now in operation, KETV will have 13 outlets in the fall by an agreement made with noncommercial WFPK-TV Lousiville.

The system is designed, Mr. Press said, "so that it could be the backbone of an expanded telecommunications system which could serve many state agencies, like the police and mental-health departments, as well as the schools."

Changing Hands

Announced:

The following station sales were reported last week, subject to FCC approval:

- WDBJ-TV Roanoke, Va.: Sold by the Times-World Corp. to the *South Bend Tribune* for about $8 million (see page 58).
- WHIM-AM-FM Providence, R. I.: Sold by Harold C. Arcaro and family to Matthew J. Culligan and others for $450,000. Mr. Culligan is chairman of the *Westport* (Conn.) *Town Crier* and has interest in applicant to purchase KBNO-FM Houston and KEIR(FM) Dallas. He also has interest in a publishing company, a movie production company and *Promenade* magazine. WHIM is a daytimer on 1110 kc with 1 kw. WHIM-FM is on 94.1 mc with 50 kw and an antenna height of 430 feet above average terrain.
- WJSW Maplewood, Minn.: Sold by Paul Glass to Donald L. Frerichs, Donald D. Wozniak and Sev Widman for $148,000. Mr. Frerichs owns a hardware store in Rochester, Minn.; Mr. Wozniak is a St. Paul attorney, and Mr. Widman is WJSW general manager. WJSW is a daytimer on 1010 kc with 250 w. Broker: Chapman Associates.
- KAGH-AM-FM Crossett, Ark.: Sold by Julian F. Haas to W. Barry Medlin, W. B. Medlin and Thomas Baker for $130,000. W. Barry Medlin is manager of WLCM-AM-FM Lancaster, S. C., and Mr. Baker is commercial manager of that station. W. B. Medlin is a tobacco and cotton farmer. KAGH is a daytimer on 800 kc with 250 w. KAGH-FM is on 104.9 mc with 3 kw and an antenna height of 275 feet above average terrain. Broker: Hamilton-Landis & Associates.
- WCNL Newport, N. H.: Sold by Chester C. Steadman Jr. to Carl S. Goodwin and others for $103,500. Mr. Goodwin is former owner of KTRC

Communications

May 5, 1969

MEMORANDUM FOR

Dr. Kissinger
Dr. Bolfridge
Mr. Flanigan

Attached is a draft memorandum for the President and a draft letter for the Secretary of State on the provision of launch services for the Canadian domestic communications satellite.

Could I please have your comments by May 7th?

Signed

Clay T. Whitehead
Staff Assistant

Attachments

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

CTWhitehead:ed

DRAFT 5/5/69

MEMORANDUM FOR THE PRESIDENT

The Canadian government has requested that the United States provide launch services for their proposed domestic communications satellite. There are two issues to be resolved:

(1) Whether the launch should be provided bilaterally or through INTELSAT;

(2) Whether the Canadian government can arrange a bilateral launch directly with NASA or should be required to go through COMSAT Corporation.

State, NASA, FCC, and our representative to the INTELSAT Conference (Governor Scranton) agree that we should not insist that the Canadians go through INTELSAT. The Canadian government has stated that such a requirement is unacceptable to them. Further, it would be undesirable to establish a precedent that could require us to establish our own domestic satellite system under INTELSAT. The Director of Telecommunications Management in OEP disagrees on the grounds that the United States is committed to a single global communications satellite system and that proliferation of domestic and regional systems is detrimental to INTELSAT. However, changes in communications

satellite technology in recent years have eroded the economic arguments for a single global system, and the United States will seek provisions for both regional and domestic systems in the INTELSAT negotiations, subject only to technical compatibility requirements.

If the decision is made to provide launch services bilaterally, the Canadian government has expressed a preference for dealing with NASA directly rather than being required to go through COMSAT. COMSAT has taken the position that the Communications Satellite Act gives them sole rights to obtain launch services from NASA for communications satellites. NASA and FCC disagree with that interpretation, and we have just received from the Office of Legal Counsel in Justice an opinion that NASA may provide such launch services independently of COMSAT if the President so directs. Granting COMSAT the sole right to launch communications satellites would have two adverse effects: (1) reduce our flexibility in deciding on the best arrangementsfor a United States domestic satellite system and (2) detract from our goal of establishing NASA as a provider of launch operations to the world community on a cost-reimbursement basis.

Recommendation

That you sign the attached letter to the Secretary of State authorizing bilateral launch arrangements and authorizing NASA to deal directly with the Canadian government.

Attached are supporting documents. Dr. Kissinger and Dr. DuBridge concur in this recommendation.

THE WHITE HOUSE

WASHINGTON

DRAFT 5/5/69

Dear Bill:

I have approved your recommendation that the United States undertake to provide launch services for the proposed Canadian domestic communications satellites on a bilateral cost-reimbursed basis, without going through INTELSAT for the launch. The provision of these launch services must be conditional upon a determination by INTELSAT of technical compatibility with the INTELSAT system.

The Canadian government may deal directly with NASA or the Communications Satellite Corporation in obtaining launch services. NASA is hereby authorized to provide these services directly if the Canadian government so desires.

Honorable William P. Rogers
Secretary of State
Washington, D. C.

Attachments

Tab A.	Memorandum from Secretary Rogers
Tab B.	Memorandum of Conversation
Tab C.	Aide Memoire
Tab D.	Proposed public statement
Tab E.	Memorandum from Mr. O'Connell
Tab F.	State Department comments on (E)
Tab G.	Legal opinion from Justice Department

DEPARTMENT OF STATE

Washington, D.C. 20520

May 9, 1969

MEMORANDUM FOR: Mr. Clay T. Whitehead

SUBJECT: Release of the Rostow Report

PROS

Making the Report available would add to the desirable "public dialogue" about communications and communications policy.

We would gain some brownie points for being "an open Administration."

The action would be applauded by the Fourth Estate, the academic community, and the concerned Committees on Capitol Hill. Contrariwise, we would be criticized by the Congress if we buried it. Indeed, some member of Congress might release it himself in some fashion (Representative Dingell, Democrat of Michigan, has indicated his intention to do so). This could prove embarrassing.

The action would demonstrate forthrightness and initiative versus a sit-tight-and-take-no-risks attitude.

It would give increased exposure and definition to key problems with which we must eventually come to grips (for example, the domestic satellite and the international merger). We would be able, later on, to cite the Report in support of decisions and recommended legislation.

There are so many pirated versions of the Report that, at least among the pros, there will be no surprises nor any major repercussions. Some industry officials will not be especially happy about it; but if the release is handled in a low-key manner and if these individuals are cut in ahead of time, such reaction can be cushioned. (Charlie McWhorter would be very helpful in this connection.)

Since some very able people at high levels in the Executive Branch worked on the Report for fifteen months, and since almost a million dollars of taxpayers' money was spent on research in its preparation, the Report should not be buried. It should be allowed to make its own contribution to the overall subject.

CONS

Why should the new Administration release something that was not even accepted by its own progenitor, LBJ? In doing so, the Nixon Administration will be buying risks that the former Administration did not wish to accept.

The press will say, "You have now had the Rostow Report for a hundred days, so what are you going to do about the recommendations in Chapter 6 or in Chapter 9, etc."

Certain elements in the industry will feel compelled to come out swinging against various recommendations, and the Administration will find itself in the middle of a rhubarb which it could just as well have avoided.

Two of the members of the Rostow committee (O'Connell and Bartlett) disagreed with elements of the Report and filed dissents. Why should this Administration issue a split Report from the Johnson Government? (Query: Would the dissents be released together with the Report? If not,what do we say if the press inquires about or requests them?)

Bringing the Report out in the open will generate increased pressures for policy decisions in particular areas which may run counter to the new Administration's thinking. In other words, it might make more difficult the establishment of our own policies.

OPINIONS OF INDIVIDUALS

Jim O'Connell is against releasing the Report. He was one of the dissenters, thinks it gives the wrong emphasis.

Jim McCormack says, "I believe it should be released, but I don't burn brightly on the subject." He stresses the importance of the subject matter and urges the Nixon Administration to state Executive Branch policies and send recommendations to the Congress and appoint a vigorous, able FCC chairman.

Leonard Marks is against release of the Report; he cites the number of dissenters. "It represents, mainly, the opinions of its young draftsmen plus Gene Rostow."

Frank Loy feels it should be released "because it points up some of the major continuing problems, e.g. international merger". This issue was considered at length in 1964. Various people from the Executive Branch testified on the Hill, but legislation was not sent up. Then, in 1966, draft legislation was prepared but the President decided not to send it up and appointed the Rostow Committee. Now, therefore, five years later, Congress is virtually certain to demand to know what we intend to do about it -- and will unquestionably hold hearings later this year.

Governor Scranton feels that if we are going to take some affirmative actions on some of these issues by, say, next Fall, then it is O.K. to release the Report now. However, if we release the Report now and fail to take any affirmative actions this year, then it will be a continuing embarrassment to us. The release of the Report would not effect the INTELSAT Conference, since the chapter on INTELSAT is very bland.

Nick Zapple thinks the Report should be released.

Ed Gallagher, President of Western Union International, sees only problems arising from release of the Report.

FCC Chairman Hyde states: "The Report is not worthy of the time, talent, and costs that went into it; but, in my opinion, it is not good policy to withhold such a document from the people when there is demand for it. One is always on the defense when in this withholding posture." He dissented on the section advocating centralized spectrum management, and avoided comment on any issues which were then before the Commission.

CONCLUSIONS

There would be more advantage than disadvantage to release of the Report.

The adverse effects can be minimized by releasing it in a low-key manner and by advance consultation with a few key industry representatives.

As you said, this is not an issue on a par with the Pueblo affair or the Korean shoot-down. It will not generate any deep or lasting controversy.

Recommended Method of Release:

1. Have 500 copies routinely printed by the Government Printing Office for distribution at ___¢ per copy by the GPO.

2. Turn several copies over to the Library of Congress.

3. Plant a question in a Ziegler news briefing to which Ron could reply in a casual way that the Report is being used along with four or five earlier ones inherited from previous Administrations. He would add: "We have transmitted ten copies to the Library of Congress, and additional copies are available to interested parties through the Government Printing Office."

A.W.

Abbott Washburn
Deputy Chairman, U.S. Delegation
INTELSAT Conference

ADMINISTRATIVELY CONFIDENTIAL

OFFICE OF THE SECRETARY OF TRANSPORTATION

WASHINGTON, D.C. 20590

ASSISTANT SECRETARY

May 15, 1969

MEMORANDUM FOR Daniel W. Hofgren

SUBJECT: Telecommunications

I am not sure whether you have any interest in Telecommunications or when this issue may surface. But I thought you would be interested in the attached which is now in Secretary Volpe's hands for signature.

Paul

Paul W. Cherington

Attachment

ADMINISTRATIVELY CONFIDENTIAL

DOT'S POTENTIAL ROLE REGARDING TELECOMMUNICATIONS

Introduction

The Department of Transportation has been considered as a potential repository of some executive responsibilities with regard to telecommunications. This memorandum deals with (1) the most important responsibilities which might be transferred to the Department and (2) how they should be carried out.

For purposes of this analysis, telecommunications should be understood to refer broadly to the technical facilities and services related to the transmission of information by electrical and other means, rather than to the content of the information so transmitted. This limitation has the effect of DOT being concerned with, for example, policies relating to the technical facilities used by broadcasters and the structure of the broadcasting industry, but not with policies relating to the kind of programs which should be broadcast over those facilities, nor with the selection of individual broadcast licensees.

PART I: TELECOMMUNICATIONS RESPONSIBILITIES WHICH MIGHT BE TRANSFERRED TO DOT

A. The Present Situation:

(1) Policy Development and Coordination:

There is widespread agreement in government and outside that telecommunications policy development and coordinating functions are not carried out effectively. By Executive Order, those functions have been delegated by the President to the Director of Telecommunications Management (General James D. O'Connell, a retired Chief, Army Signal Corps). The Director is placed within the Office of Emergency Preparedness of which he is an Assistant Director. The Director is also Special Assistant to the President for Telecommunications.

The meaning of those three hats worn by the Director is that while he is supposed to be the President's man with regard to telecommunications, actually he is submerged in the Office of Emergency Preparedness where he lacks the prestige, resources, political backing, and direct access to the President, all of which are essential to performing an effective job with regard to policy development and coordination. Even if his office were taken out of OEP and set up as a separate establishment in the Executive Office of the President, he would not, because of his narrow specialization, develop frequency and continuity of access to the President. He would therefore still not have sufficient stature and influence to be effective in dealing with

the cabinet-level heads of agencies to which he should be providing policy leadership and coordination, nor could he be effective with the Congress, the industry, the regulatory agencies, or the other elements of our society who would consider their interests affected by his policy judgments.

(2) Spectrum Management:

The radio frequency spectrum is managed through a combination of international and national controls. Internationally, the spectrum is allocated by worldwide international agreements entered into under the auspices of the International Telecommunication Union. These agreements are supplemented by regional agreements. Domestically, radio frequencies are assigned to Federal agencies by the President who has delegated his authority to the Director of Telecommunications Management. Frequency use by private users as well as State and local governments, is allocated by the Federal Communications Commission. There is wide-spread agreement that the division of responsibility between the President and the FCC has resulted in failure to make the best possible use of scarce radio frequencies.

(3) The Government as a User of Communications:

Because communications facilities with foreign nations proved inadequate during the Cuban missile crisis, President Kennedy ordered the coordination of all government communications facilities, internationally and domestically, for the purpose of making an effective communications system available to the President in cases of

emergency, and to the Government as a whole for the regular conduct of government business. This responsibility for coordinating the Government's role as a user of communications was vested in the National Communications System. The Director of Telecommunications Management is supposed to set the policies and standards for the National Communications System while the Secretary of Defense has been designated as Executive Agent of the System. The Comptroller General (General Accounting Office) in a recent report has criticized the present division of responsibility as ineffectual due largely to the fact that the Department of Defense has successfully resisted plans for greater integration of the international and domestic defense communications systems into the National Communications Systems. The report has urged transfer into firmer hands of the planning and policy setting functions.

(4) Common Carrier Regulation:

The Federal Communications Commission is responsible for the regulation of communications common carriers. Except for war planning, the Government has no vehicle to formulate policy affecting the operation and development of commercial communications systems. It develops no views as to standards of service, the rate at which innovation should be incorporated in the systems; the fairness of tariff rates; whether construction programs or design of the systems are well considered or consistent with national policies.

A considerable part of Commission weakness in regulating common carrier activities is attributable to structural limitations. The

staff of the Common Carrier Bureau serves as technical assistant to the Commissioners, framing the issues, providing professional aid and preparing the draft of all decisions. Normally, the staff does not testify in rate or other litigated proceedings. The record in such proceedings usually consists of the viewpoints of the commercial competitors who appear before it. The absence of direct public interest advocacy, the absence of any consistent, long-range planning and policy formulation is a by-product of the ad hoc procedure of the Commission.

B. Reasons for Transferring Telecommunications Responsibilities to DOT

There are several reasons for transferring executive responsibilities regarding telecommunications from some agencies which exercise such responsibilities at present and transferring them to DOT rather than other Departments.

(1) There is an appealing and apt analogy between the need to rationalize the telecommunications industry and the need, for which DOT was established, to rationalize the transportation industry. There is obvious virtue in looking at the telecommunications infrastructure of the United States as a whole and in developing an Administration view as to how the industry can be better organized to serve our national purposes. DOT has this kind of concern for transportation; no one is now doing it for communications. The opportunities for useful work in this field are as numerous and significant as they are in the sister field of transportation.

(2) The handling of the interdisciplinary problems (engineering, economics, social, political, etc.) which are characteristic of telecommunications requires familiarity with a broad variety of skills, principally in the development and execution of public policy. These skills require fluency in negotiation, consultation, the exploration of available alternative solutions, etc. These are precisely the skills which DOT has. The FCC, to mention an important policy developer for telecommunications, relies primarily on presentations of evidence and reasoned arguments in formal hearings. Such procedures are hardly suited to the solution of interdisciplinary problems, the development of public policies, and the coordination of multi-agency activities related to carrying out such policies.

(3) Telecommunication services are potential substitutes for transportation services. For example, conference calls using picturephones may compete in the future with long-distance jet transportation. Policies designed to plan nationally for the inter-related development of these services and to deal with potential conflicts are likely to be hammered out more effectively within a single department than between different departments.

(4) DOT is a "conflict-oriented" agency. Unlike more placid old-line government operators, we are constantly in the thick of intra-modal, inter-modal, environmental, urban and other dilemmas, none of which have easy solutions. An ability to function creatively in such an atmosphere, to set practical goals, to negotiate, conciliate,

stimulate, develop accommodations, and generally move forward, is forced upon us by the nature of the transportation industry and its problems. The same ability is called for in the communications field.

(5) DOT has developed experience with the technique of intervening in formal agency proceedings before the CAB and ICC. Such experience will be helpful and important in assuming a public interest advocacy role before communications regulatory agencies.

PART II: HOW DOT MIGHT ACQUIRE AND DISCHARGE TELECOMMUNICATIONS RESPONSIBILITIES

A. The Responsibilities Which DOT Might Undertake Effectively:

There seems general agreement on four significant areas of potential responsibility which need to be dealt with differently than is now the case: (1) policy development and coordination; (2) unified spectrum management; (3) government communications systems management; and (4) common carrier regulation.

In the case of all these potential roles, there is danger that, if more is taken on than DOT is equipped to handle -- either too much or too soon -- the Department may discredit itself. This suggests that, whatever responsibilities are assumed, they should be taken on gradually, in stages, as described more particularly below.

There is another potential pitfall: to attempt to take on "policy" responsibilities in a vacuum. Unless "policy-making" is coupled with

some action responsibilities, it tends to become theoretical and too easily by-passed by those performing day-to-day operations. Without some appropriate operational role the policy-maker lacks power, and without power the policy-maker will be ineffective, not only in influencing others, but also even in recruiting the hard-to-get talent necessary for informing and imaginative policy-making.

It is proposed that initially a policy-making role, involving techniques described immediately below, be coupled with an action role in the field of spectrum management. In a second stage, responsibility should be assumed in connection with the Government's own communications systems. Concurrently, the Department would assume the role of public policy advocate intervening, where deemed necessary, in communications regulatory proceedings.

The exercise of effective leadership would require:

(1) An ability to comprehend and the forcefulness to decide the technical, economic, and social ramifications of policy formulation in the telecommunications field. The Department is at advantage in that it possesses the nucleus of a staff expert in the many telecommunications areas;

(2) An ability to impress on the Federal, state and local Government the needs of the telecommunications system as a whole in the exercise of their respective responsibilities;

(3) Working with the Department of Justice to assure that a balance be achieved between (a) the need for competition and openness, and (b) the need for system-wide goal setting and coordination;

(4) Stimulating academic and research institutions to establish interdisciplinary teaching and research capabilities to deal with the telecommunications problems; and

(5) Organizing the technical and engineering capabilities which exist within the Government but are now fragmented and their talents dissipated.

In order to have the capabilities to proceed in such manner, DOT would have to:

(a) supplement the present corps of DOT talent in various disciplines such as engineering, economics, law, systems analysis, telecommunications management with a view to achieving an inter-disciplinary approach to telecommunications problems, and

(b) establish an information gathering and evaluation system required for effective policy development and coordination.

B. Spectrum Management Responsibilities:

In the case of spectrum management there are several sub-areas: the grant or refusal of spectrum to Federal Government claimants; the grant or refusal of spectrum to other claimants; the management

of the spectrum in the sense of "stretching" its usefulness through the application of economizing engineering and managerial techniques; and the allocation of spectrum as between Federal Government users and other users.

It is proposed that the spectrum functions now lodged with DTM -- that is, those dealing with Federal Government users, be transferred to DOT. The spectrum management functions of the FCC -- those dealing with non-Government users would also be transferred to DOT but not the assignment or allocation of specific frequencies. The objective here would be to obtain unified management of the entire spectrum for the benefit of all users. While the Department would be responsible for management and allocation policy for the entire spectrum, the Federal Communications Commission would continue its present adjudicatory role of selecting radio frequency licensees for specific radio channels.

There exists substantial technical competence in the Government in both the radio spectrum and general communications area. This competence is dispersed, its resources dissipated for lack of central direction. To reinforce executive management of the spectrum, it is proposed that the various radio propagation laboratories be consolidated within the Department.

C. Government System Responsibilities:

The problem in the management and planning of the Government's own communications are enormous. The Department of Defense dominates the field. Its needs for war-time priorities must be met, and at the same

time a fully compatible, common-user communications system must be developed. Again forceful executive action is required. The problems can be solved. It would be advisable for DOT initially to attempt the assembly of a system design staff utilizing personnel from the FAA and from the NCS-DCS staff. It will be necessary to assure the DOD that transfer of this responsibility will not adversely affect the operations of either its logistic or tactical systems.

D. Common Carrier Regulation:

One area for implementing the Department's proposed policy-making role is in common carrier regulation. DOT should review and evaluate common carrier tariffs, service standards and construction applications and be empowered to either oppose them or seek their modification in proceedings before the FCC. The Department would be charged with direct responsibility for representation of the public interest in either litigated or rule-making proceedings. With enhanced technical capabilities, the Department could effect a meaningful contribution to common carrier regulation.

E. How Telecommunications Responsibilities Could be Acquired

(1) Legal Techniques:

In determining the methods to be used in transferring telecommunications responsibilities to DOT, several factors must be considered: what is the least cumbersome method of transfer for each of the three responsibilities -- executive order, reorganization plan, or legislation? Are there good reasons why a more cumbersome method is feasible?

As a matter of law, all four responsibilities may be transferred by executive order. In order to assure long-range Congressional support, however, of the exercise by DOT of telecommunications responsibilities, the transfer of those responsibilities should be referred to Congress at least through the device of a reorganization plan. A reorganization plan would have the advantage of greater speed than the legislative process. Either a reorganization plan or legislation to vest new responsibilities in DOT would be referred to the Government Operations Committee in both houses of the Congress. The Commerce Committees are also, however, likely to demonstrate an interest in such plans, and their participation in some form may be anticipated.

(2) Spectrum Management Problems:

Unification of spectrum control will serve to meet a long recognized need for rationalization of this function. It will include the transfer to DOT of the present authority of the President (delegated to DTM) as well as the authority of the FCC to allocate frequencies to non-government users.

In order to make the best possible use of the scarce spectrum resource, the spectrum managers will have to look to several disciplines, including engineering, economics, law and public administration, to develop suitable spectrum management techniques. Engineering and economics should supply the substantive standards. Public administration and law should furnish the organizational and procedural standards.

The present division of responsibility for spectrum management between the President (delegated to DTM) and the FCC constitutes not only an organizational division but also a procedural division. Allocations by DTM of frequencies for Federal Government purposes are made by means of informal negotiating procedures carried on with the Interdepartmental Radio Advisory Committee (IRAC). Allocations to private claimants by the FCC are made by means of formal hearing procedures.

Improved spectrum management requires procedures which on the one hand are not so formal that they preclude the development and consideration of multiple alternatives. FCC's formal hearing procedures tend to polarize views with regard to a single proposal. The procedures must not be so informal, however, that allocations may not be scrutinized by interested parties and professional observers. Considerations of national security preclude such scrutinizing in many situations involving DOD. Under these circumstances, the development of appropriate procedures which take account of these several conflicting goals and considerations will be one of the important tasks of DOT.

It is particularly important that such procedures allow the scrutinizing by other Government agencies of claims advanced by claimants which are located within DOT, such as FAA and the Coast Guard. DOT is next to DOD the largest user of spectrum space. If DOT is assigned general spectrum management responsibilities, procedures followed by DOT with regard to claims advanced by subsidiary agencies located within DOT must be designed to allay insofar as possible apprehensions with regard to "in-dealing". A possible

technique to meet this problem would be through the establishment of a quasi-independent Spectrum Review Board, analogous in its independence to the National Transportation Safety Board, which could be the ultimate arbiter of disputes among Government spectrum claimants, and in which the DOD could have as much voice as necessary to satisfy it that its security requirements will be fairly reviewed.

F. Discharge of Telecommunications Responsibilities by DOT

While the nature of the four telecommunications responsibilities transferred to DOT differs considerably, the exercise of those responsibilities will have one common feature, namely to keep things moving along while changing some of the long-range objectives and methods of operations. In other words, unlike the automobile industry, DOT cannot close down the assembly lines preparatory to producing the new models. The trick will be not to get so swamped with day-to-day problems of keeping the assembly lines operating that the new models will never see the light of day. For this reason the take-over of responsibilities should be gradual and carefully phased to match the acquisition of capability to discharge them.

The handling by a single agency of the four distinct telecommunications responsibilities could also have a synergistic effect, i.e., each responsibility may be discharged more effectively because the agency is able to apply experiences gained from discharging the other responsibilities. In order to achieve the synergistic effect, rather than to court the disaster which would follow if the Department

were inadequately equipped to handle the various responsibilities transferred, discretion will have to be used in getting DOT prepared for exercising the several responsibilities. To some degree this will depend on whether DOT will be organized appropriately to discharge the several distinct responsibilities.

For example, unified spectrum management and government telecommunications systems management is comparable in several respects to the unified management of the air-space by FAA in terms of the heavy involvement of the military in all three management areas. The special organizational arrangements which were made when unified control over the air-space was lodged in FAA may therefore constitute an appropriate model for the other two areas.

Organizationally it is assumed that a new Communications Organization would be created. This staff would be supported by a subordinate laboratory technical capability and, where necessary, draw on existing competence in communications engineering from available in-house resources.

Telecom

THE WHITE HOUSE
WASHINGTON

5/22/69

To: Herb Klein

From: Tom Whitehead

May 20, 1969

MEMORANDUM FOR MR. ZIEGLER

Attached is a background memorandum on the Communications Task Force Report, including a number of the issues that were addressed and a number of previous studies on similar areas that have been done within the last few years.

Also attached is a summary of the 450-page report.

Finally, I have attached a copy of the transmittal letter by which a copy of the report was made available to the Congress.

We estimate that copies for preliminary distribution will be available tomorrow and they will be sent to you as soon as possible.

We are uncertain how much play this will get in the press but are hopeful it will not be too great. Therefore, we recommend no formal press release. I am sure you will be getting a few questions, however.

Clay T. Whitehead
Staff Assistant

Attachments

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

CTWhitehead:ed

Background Material on Communications Task Force Report

Communications policy has been an on going concern of the Government. Since the 1950's, the Government has undertaken more than a half dozen major studies in the communications field. In August of 1967 the previous administration appointed an Interdepartmental Task Force "to make a comprehensive study of communications policy". The report was completed but not released. Without comment on its conclusions and recommendations, this Administration has decided to make copies of the report available. This is one of several reports now under review. This one is being made available at this time to the Congress, the communications industry and the public, as a means of stimulating additional dialogue in this important and difficult field.

A copy of the summary of the major conclusions and recommendations of the Task Force Report is attached. In general, the Task Force Report deals, among other things, with the following questions:

How does an open society attain maximum communication efficiency - internationally and domestically?

Should the United States have a single chosen instrument for international communications?

Is the electromagnetic radio spectrum allocated in the best interest of all parties?

Will a domestic satellite system violate our legal and treaty obligations under the interim agreement to participate in INTELSAT?

How can a permanent international satellite consortium be finalized?

In what way does satellite communications offer new possibilities for educational and instructional television in the United States and in countries less technically developed than ours?

What are the advantages and disadvantages of the newly developing industry of community antenna television?

Is present communication regulation adequate, too restrictive, ineffectual?

Have we sufficient communications resources to guarantee the security of the United States?

What organizational structure will best execute the responsibilities of the Federal Government in the field of communications?

In the 1950's, the President's Communications Policy Board submitted a report on "Telecommunications - A Program for Progress." More recently, the Office of the Director of Telecommunications Management has studied frequency allocation in the Executive Branch, as well as the "National Telecommunications Responsibilities of the Presidency." Industry's Joint Technical Advisory Committee reported on "Spectrum Engineering - The Key to Progress." Congress investigated "Modern Communications and Foreign Policy." The Federal Communications Commission made a "Survey of the Telecommunications Industry."

CHAPTER TWO

ORGANIZATION OF THE U. S. INTERNATIONAL COMMUNICATIONS INDUSTRY

Conclusions:

1. The existing fragmented ownership structure of the U. S. international communications industry -- particularly the separate ownership of international transmission facilities -- no longer serves the national interest.

2. Of the various alternatives that have been suggested, formation of a single entity for U. S. international transmission, subject to certain conditions, seems to be the most attractive way to deal with the industry's problem:

-- it would promote system optimization and enable realization of the available economies of scale;

-- it would help further U. S. foreign policy objectives;

-- it would resolve the anomalies of Comsat's role and function;

-- it would help resolve the problems of the international record industry;

-- it could improve the prospects for effective government regulation.

3. Creation of the single entity should be subject to certain conditions:

-- it should be limited to that function -- the provision of the transmission and other facilities -- where the economies of scale are clearly so great that effective competition is unlikely;

-- it should not engage in manufacturing that can be provided by the competitive marketplace or have any manufacturing affiliations;

-- it should not provide domestic service, save as may be necessary to permit completion of the pilot domestic satellite program, and should have no domestic carrier affiliation;

-- it should be subject to strengthened government regulation.

Recommendations:

1. Legislation should be enacted to provide for the creation of a single entity for U. S. international transmission through a consolidation of the international transmission plant of AT&T and the international record carriers, Comsat's satellite investments, and the U. S. earth stations now operating or planned for operation with Intelsat satellites. The legislation should embody the following general principles:

- opportunity for full hearing and submission of views by interested parties on the plan of consolidation;

- appropriate protection of labor;

- effective competition be maintained in procurement of apparatus, equipment and services by the single entity;

- single entity to have no manufacturing affiliation, direct or indirect;

- terms of all agreements among interested parties, as well as capitalization and financing of the single entity, subject to government approval;

- single entity forbidden to provide terminal or service functions now offered by the international record carriers, but permitted to deal directly with users;

- provision of 1962 Satellite Act prescribing Executive Branch responsibilities to protect the national interest and further U. S. foreign policy apply with equal force to single entity;

- single entity should not provide domestic service, save as necessary to permit completion of the pilot domestic satellite program, and should have no domestic carrier affiliations;

- users or carriers obtaining leased circuits from the single entity be forbidden to provide terminal or service functions now offered by the international record players.

2. The government should be prepared to take whatever action is necessary to ensure against undue delay in achieving rationalization of the industry structure.

3. Regardless of action taken with respect to principal recommendation that a single transmission entity be created, the government's capability for regulating and supervising the industry should be augmented and the international carriers should be divested of their ownership of Comsat's stock and representation on its board of directors.

CHAPTER THREE

THE FUTURE OF INTELSAT

Conclusions

The success of Intelsat has demonstrated the wisdom of our commitment to a global communication satellite system. We should continue to support the goal of developing and perfecting the global system, taking into account developments since 1964 as well as those new in prospect.

Recommendations

1. The definitive arrangements for Intelsat should be sufficiently flexible to adapt to the changing needs of members and accommodate specialized satellite facilities without weakening the indispensable foundations of the global system.

2. Intelsat's institutional structure and decision making progress should be modified where necessary to reflect changed circumstances since its creation.

3. The U. S. should do its best to ensure that Intelsat continues to be a forum in which communications matters are central; political alignments and difference need not and should not have a place in such an organization.

4. We commend our staff study of the Future of Intelsat to those responsible for formulating U. S. policy with respect to the forthcoming definitive arrangement negotiations.

CHAPTER FOUR

SATELLITE COMMUNICATIONS AND EDUCATION TELEVISION IN LESS DEVELOPED COUNTRIES

Conclusions:

The less developed countries vitally need better communications, both internally and with the rest of the world. Satellites may hold particular promise in this regard: our studies indicate for example, that multipurpose satellite facilities have substantial promise for Latin America, and nation-wide television system offers special promise for India (although substantial software problems would have to be overcome). In general, instructional television deserves high place in the educational priorities of less developed countries.

Recommendations:

1. The U. S. should encourage and support the establishment of regional training centers for use of educational technology as recently proposed in a study for the Organization of American States. */

2. The U. S. should take the lead in encouraging and supporting the use of television as a complementary tool in the educational systems and development programs of less developed countries. In this context, we applaud the pilot program to be undertaken by NASA and the Government of India, involving the use of satellites in the early 1970's on an experimental basis.

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*/ Organization of American States. Final Report, Fifth Meeting, Inter-American Cultural Council, Feb. 1968

3. To support the regional centers and the individual country efforts, the U. S. should consider establishing an institute or center capable of performing basic research in ways to increase the educational efficiency of telecommunications media, research in applications of educational technology to meet the needs of less developed countries, and offer training personnel in the techniques developed.

4. In cooperation with private industry, the government should explore the feasibility of developing a low-cost, low-maintenance TV receiver suitable for use with batteries or other sources for use in remote regions that do not have electricity.

5. Less developed nations should be encouraged to explore the potential use of satellites for meeting their communication needs, particularly through regional cooperation, and to look to Intelsat for appropriate assistance.

CHAPTER FIVE

DOMESTIC APPLICATIONS OF COMMUNICATION SATELLITE TECHNOLOGY

Conclusions

Technological developments portend potentially attractive domestic applications of communication satellite technology. Even with today's technology, it may be economically attractive to provide some domestic communication services by satellite. While a prompt start is warranted, there are a number of factors, including spectrum considerations and the impact of our international commitments, which caution restraint in deciding how best to proceed in the domestic satellite field. An operational demonstration pilot domestic satellite program, designed to provide useful technical, operational, economic and other data would be a logical first step in the use of satellites to meet domestic communications requirements.

Recommendations:

The FCC should give favorable consideration to a demonstration pilot program along the lines described in the report, which included the following features:

-- Employes the appropriate advanced technology to obtain needed technical and operational data.

-- Participation through investment open to

-- space segment: Comsat as trustee

-- ground environment: Comsat, common carriers, and prospective users of wide-band services, as trustees, approval of specific applications by FCC by weighing the desirability of broad participation and need to ensure an efficient, expeditious program and systemic integrity.

-- Comsat as Program Manager.

-- Free satellite channels for non-commercial and instructional television.

-- Interested parties represented through an Advisory Committee.

-- Consistent with U.S. international commitments and appropriately related to Intelsat.

-- Authorized on basis of 1934 Communications Act and 1962 Communications Satellite Act.

-- Monitored by high level office within the Executive Branch.

CHAPTER SIX

DOMESTIC TELECOMMUNICATIONS CARRIER INDUSTRY

Conclusions

Although the nature of the common carrier industry remains essentially monopolistic in many areas, more liberal policies toward entry of new competitors and new service could improve industry performance by stimulating greater responsiveness to consumer needs, and spurring technological innovation and internal efficiency leading to cost and price reductions. The thrust of public policy should, therefore, be toward freer entry.

The merits of freer entry are less clear in the area of public message telephone service. Maintenance of a monopoly on switching and distribution for the switched message telephone services in a geographic area seems essential to retain the principle of universal access without substantial duplication of facilities or loss of service reliability. Comprehensive government regulation of this industry will continue to be required and government capabilities should be strengthened.

Recommendations

1. Freer entry into supplementary services and into the equipment market should be explored:

-- Subject to spectrum limitations, entry into forhire private line toll transmission should be permitted, and regulated on a common carrier basis; existing common carriers should be permitted to compete with new entrants in for-hire private line

toll transmission, but subject to minimum rate regulation which takes into account, to the extent feasible, long-run incremental costs for the specific services and routes involved.

-- Suppliers of private line services (both for-hire and user-owned) should be allowed to interconnect with each other, and with the common carrier private line networks, subject to appropriate standards regarding compatibility and protection.

-- Computer-communications services (tele-processing) should remain open on a non-regulated basis to firms wishing to provide them, except for the telephone carriers.

-- Line sharing, brokering and channelizing should be permitted in all private line services, subject to appropriate technical standards.

-- The carrier equipment market should be opened up to greater competition among suppliers, particularly in the procurement policies.

2. While the prospects of free entry in transmission and local distribution in the public message telephone service are not bright at this time, self-contained private systems (not-for-hire) and user-furnished terminals should be permitted to connect into the message-telephone network, subject to protection of system integrity by development and publication of system standards and, where necessary, provision of protection equipment.

3. Institutional and regulatory changes with respect to the operations of Western Union appear desirable:

-- In order to maintain viable public message service, cost reductions are essential. Partial consolidation of this service with the U.S. Post Office should be explored.

-- Western Union should be permitted to compete on an unregulated basis in teleprocessing.

-- The Telex-TWX should be consolidated in accordance with the recommendations of the FCC telegraph report.

4. The government's capability for promoting efficiency and innovation both in the FCC and the Executive Branch should be strengthened:

-- Legislative action should be considered to ensure more effective review by the FCC of major additions to carriers' plant, inter-carrier contracts, procurements and carrier financing.

-- The FCC requires a larger staff and budget, with a shift in focus to longer-run dynamic considerations, and improved methods and principles of rate regulation.

-- A new Executive Branch capability (as described in Chapter Nine on Federal Roles) should be established to assist the FCC in fulfilling its regulatory responsibilities.

CHAPTER SEVEN

FUTURE OPPORTUNITIES FOR TELEVISION

Conclusions

1. Sound national broadcasting policy should seek to satisfy a wide variety of needs, interests and tastes at low cost to user and viewer.

2. To achieve these goals, television programming must be far more multifaceted than it is today, with broadcasting costs significantly reduced, and many channels available to each user.

3. The requisite conditions are not likely to be fulfilled within the framework of the present structure of the television broadcasting industry, which places primary reliance on local over-the-air stations.

4. Of the various measures that might be pursued to bring us closer to the above goals, the single most promising one is the distribution of television to the home by means of cable, supplemented where appropriate by short-range millimeter wave multipoint wideband radio.

5. At the same time, unfettered cable expansion may involve serious social cost, and should be guarded against by establishing a policy designed to safeguard an adequate minimum level of free over-the-air service.

6. Attention must also be given to problems relating to control of, and access to, the cable medium, and to the need for new sources of programming. This will require an expanded role for the Executive Branch, including promotion of new applications of television for public purposes.

Recommendations:

1. Congress should promptly amend the Copyright Act to impose an appropriate measure of copyright liability on cable television systems.

2. The FCC should pursue without delay policies which allow cable television to develop in accordance with competitive market forces, but which ensure a defined minimum adequate over-the-air service.

3. The FCC should ensure against undue concentration of control over cable systems.

4. The FCC, the Department of Justice and the Congress should scrutinize developing patterns of ownership in the cable industry so that the necessary steps are taken with respect to other conflicts of interest or threats of media domination, particularly by restricting multiple ownership of cable systems as the FCC has done in the case of broadcasting stations.

5. Executive Branch agencies should exercise more active participation in FCC proceedings where they have a legitimate interest.

6. The Federal Government should initiate and support programs designed to test new broadcasting applications to further important public purposes:

-- we recommend a pilot project for South Central Los Angeles, and one for the Navajo Indian reservation in northern Arizona.

7. To further implement the above recommendations will require a new Federal government capability, described more fully in the Chapter Nine on Federal Roles, as well as the assumption of a new role for the

Corporation for Public Broadcasting as a source of assistance in experimenting with various kinds of non-commercial programming to advance public needs.

CHAPTER EIGHT

THE USE AND MANAGEMENT OF THE ELECTROMAGNETIC SPECTRUM

Conclusion:

We are not now making the best use of the electromagnetic spectrum, and present spectrum management goals and capabilities are inadequate to achieve optimum use of the spectrum.

Recommendations:

1. Clear policy objectives and a new approach to spectrum management should be adopted, founded on the basic guideline that we should seek to achieve that combination of coordinated uses of the spectrum which in the aggregate maximize its social and economic contribution to the national welfare, under a continuing framework of public administration.

2. Greater consideration of economic factors is necessary:

-- Annual fees for licensed spectrum use should be imposed.

-- License privileges should be clearly stated for each generic class of spectrum use in terms of interference probability, channel loading, service quality and other factors as appropriate.

-- Procedures should be modified to permit greater transfer of licenses among spectrum users.

-- Procedures should be developed whereby a prospective spectrum user may obtain a license even though this may potentially cause interference to an established user provided that appropriate indemnification arrangements are established.

3. Greater attention to individual spectrum uses should be achieved through "spectrum engineering" and related technical considerations:

-- Convert formal block allocations over an appropriate interval to a basic planning guide by service classification.

-- Develop a comprehensive spectrum engineering capability for individualized planning and engineering of spectrum uses, and establish improved technical design and operating standards.

4. Increased spectrum management resources are vital.

5. Specific recommendations in selected problem areas:

-- Land Mobile (LM) Radio Services

- Authorize LM to use spectrum now allocated for UHF-TV but unusable under present TV station assignment plan, subject to appropriate criteria.

- Establish standards for future LM services to permit closer spacing of base stations using same frequency assignment; encourage greater use of multi-channel radio equipment.

- Encourage development and use of common-user and common-carrier mobile radio systems.

- Establish a range of channel loading criteria.

- Modify sub-allocation of LM bands by user class.

- Enable persons now restricted to Citizens Radio bands to obtain licenses in LM bands.

-- Public Safety.

- Incorporate public safety and other local and state government uses into the government spectrum allocation and management framework.

- Establish operating standards requiring greater frequency sharing.

- Encourage the development of localized common-user mobile radio systems.

-- Television Broadcasting.

- Spectrum resources presently allocated but unusable for TV should be made available for land mobile and other uses.

- Continue studies of alternative techniques for TV broadcasting.

-- Microwave bands (1,000 - 10,000 MHz)

- Radio relay services - establish improved operating standards for greater spectrum re-use and interference protection between systems.

- Communication satellite services - Reevaluate criteria for satellite/terrestrial sharing of all spectrum allocations below 10,000 MHz; conduct the necessary experimental programs to ascertain probability of harmful interference between satellite earth stations and microwave radio relay stations in shared frequency bands below 10,000 MHz; and develop improved criteria and coordination procedures for efficient sharing of spectrum allocations and orbital locations among various domestic and international satellite systems, both government and non-government.

-- Milimeter Wave bands.

- Encourage continuing research and development on use of these spectrum bands, including federal R&D programs.

- Exercise restraint in authorizing exclusive use by either terrestrial or satellite systems pending clarification of feasibility of inter-service sharing.

6. Institutional reforms are needed, requiring legislation to vest overall responsibility for spectrum management (both government and non-government) in an executive branch agency, with appropriate guidance regarding coordination between the spectrum manager and other agencies.

CHAPTER NINE

THE ROLES OF THE FEDERAL GOVERNMENT IN TELECOMMUNICATIONS

Conclusions:

The U.S. needs a coherent governmental framework for formulating and implementing telecommunications policies. The patchwork nature of the present structure is not conducive to optimum performance of the telecommunications activities and requirements of the Federal government.

Recommendations:

1. A new Federal telecommunications capability is urgently needed to integrate the various roles in which the government is now engaged. Without supplanting on-going mission-support telecommunications activities or FCC regulation, the proposed capability should:

-- have the necessary multidisciplinary capability to advise and assist the FCC by engaging in communication systems analyses, long-range economic and technological forecasting, delineation of technical and service standards, and review of major system design and investment choices of the industry;

-- have centralized responsibility for spectrum management, including government research and development related to spectrum, as discussed in the Chapter Eight on Use of Spectrum;

-- have responsibility for studying communications-related research and development for potential application to the mission needs of other agencies, and for the accomplishment of broader national goals;

-- have responsibility for initiating, monitoring and evaluating prototype experiments and pilot programs, and providing assistance to other agencies in connection with such experiments and programs, as discussed in the Chapters Five and Seven on Domestic Satellites and Broadcasting, respectively;

-- provide telecommunications advice and assistance to other Federal agencies, as well as States and local government, on request, especially in connection with procurement;

-- engage in long-range policy planning.

2. The FCC's common carrier regulatory capability should be strengthened through a more comprehensive legislative mandate, increased resources, refocus of priorities and improved methods and principles of regulation, as discussed in Chapters One and Six on the Structure of the U.S. International Communications Industry and the Domestic Common Carrier Industry, respectively.

3. One or more Communications Policy Training Programs should be established with Federal assistance to provide advanced interdisciplinary training at the graduate and mid-career levels.

May 23, 1969

MEMORANDUM FOR

Mr. Ralph Clark
Office of Telecommunications Management

Thank you for your note of May 22nd. It filled in a few missing pieces in my understanding of the history and issues over the last several years. I hope we can give some real attention to these problems over the next few months and will keep in touch.

Clay T. Whitehead
Staff Assistant

Attachment

cc: Mr. Whitehead
Central Files

CTWhitehead:ed

tape

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

May 22, 1969

NOTE FOR MR. WHITEHEAD

Attached are some documents related to our discussion the other day.

The January 13, 1965, report, particularly the draft memorandum to the President illustrates one of the points; the statement by the Director of Telecommunications Management/Special Assistant to the President for Telecommunications, with all the authorities conferred by Executive Order 10995; the 21 August 1963 memorandum establishing the NCS; and Executive Order 11191 which was then in preparation that "no one of these agencies has responsibility for, or is performing the function of looking at telecommunications problems from the overall vantage point of the President or of advising the President of the overall long term implications of piecemeal actions" (from third paragraph, January 13 draft memorandum to the President).

As you can see, my memorandum of August 27, 1965, grew out of this attitude. I would appreciate the return of my memorandum for obvious reasons. (returned 5/23)

The biography may be of some interest and assistance.

Ralph

Ralph L. Clark

Attachments

THE WHITE HOUSE
Washington

January 13, 1965

MEMORANDUM FOR

Mr. Myer Feldman

I attach a memorandum for the President which summarizes the principal problems and opportunities for improvement which now face this office. They are discussed under the following headings:

--Problems of the Communications Satellite Corporation

--The Problem of National Policy-Making for Telecommunications Where are we Headed?

--The Problem of International Communications

--The Problem of Current Trends in our National Telephone Industry

--The Problem of Government Ownership Vs. Government Leasing of Telecommunications Facilities

--The Problem of Determining Presidential Requirements for Essential Telecommunications

--The Problems of the National Communications System

--The Problem of Emergency/War Telecommunications Responsibilities

--The Problem of Effective Management of the Frequency Spectrum

--The Problem of Organization of Responsibility for Telecommunications Within the Federal Government

--The Role of Telecommunications in the Progress of the Great Society

--Recapitulation

Memorandum for Mr. Myer Feldman

I know that you have been very closely involved in prior formulation of the needs of this office for problem-solving and are fully aware of the lack of coordination which exists in telecommunication matters throughout the Government.

If in your opinion these statements and views have merit, I would like to get them before the President. Because of the number of problems discussed in this paper, it is more lengthy than I would choose. I therefore send along a summary or abstract.

I understand that there are several reorganization plans being considered which might affect this office and that reorganization programs are to be submitted to the President on January 15.

I am most anxious that he have this input prior to that time.

J. D. O'Connell

Attachments

Confidential memo from Ralph Clark to Mr. O'Connell dated 8/27/65 returned to Mr. Clark.

BIOGRAPHY OF RALPH L. CLARK

Born June 2, 1908, East Jordan, Michigan.

Educated in Michigan schools, graduated from Michigan State College, (now University) 1930; B.S. degree in Electrical Engineering, major in Communications, minor in Physics.

1930 - 1935 -- Radio Inspector, Department of Commerce, Federal Radio Commission and Federal Communications Commission. Experience with all the field engineering, inspection and monitoring activities of those agencies. Held Radio Telephone and Radio Telegraph First Class license.

1935 -- Assistant Chief, Field Section, Federal Communications Commission.

1935 - 1941 -- Engineer (several grades) Broadcast Engineering Division, Federal Communications Commission. Concerned with all phases of broadcast engineering. Wrote Standards of Good Engineering Practice for standard broadcast stations. Prepared first Standards for television and FM stations. Technical Secretary of North American Broadcasting to implement the NARBA Treaty. Wrote portions of FCC Annual Reports.

1941 - 1947 -- Partner, Ring and Clark Consulting Engineers. Helped organize firm and engaged in consulting radio engineering, particularly concentrating on broadcasting. Only active for one year.

1942 - 1946 -- Lieutenant to Commander, USNR. Electronics Division, Bureau of Aeronautics, Navy Department, Washington, D. C. Planned and organized Navy's airborne countermeasures program. Working with the Radio Research Laboratory of OSRD, developed, engineered and procured many advanced weapons and equipments. Received Navy Commendation from Secretary of the Navy (Mr. Forrestal) for this work.

1946 - 1949 -- Director, Programs Division, Research and Development Board, Washington, D. C. Organized a Division of about 40 people to support the Research and Development Board with current information concerning Army, Navy, and later Air Force research and development programs, including technical characteristics, budget and fiscal information, scientific and technical intelligence, editorial, reporting and library functions.

1949 - 1954 -- Deputy to the Assistant Director, CIA, for Scientific Intelligence. Had major responsibility for the organization, planning, staffing and program direction of a scientific intelligence organization of about 250 people. Concerned particularly during this period with intelligence on foreign developments in nuclear energy, communications and electronics, the capabilities and probable future trends, and with the organization of advanced collection systems in these fields.

1954 - 1955 -- Staff Director, President's Committee on Telecommunications Policy and Organization. Worked for the Director, ODM, in support of a committee to review national communications policy, the importance of communications to national security, and the adequacy of organization to implement policy.

1955 - 1957 -- Staff Officer and Special Assistant to the Deputy Director, CIA. Involved with the entire field of technical intelligence of foreign use of electronics, communications and related systems.

1957 - 1959 -- Manager, Washington Office, Stanford Research Institute. Coordination of research programs conducted by the Institute for government agencies, primarily the Defense agencies, and providing advice and assistance to Institute management concerning government policy.

1959 - 1962 -- Assistant Director, Defense Research and Engineering, Communications and Data Processing, Department of Defense. Coordination and guidance of communications R&D in the Department of Defense. Concerned particularly with the command and control and intelligence automation programs which generate communications requirements. Also involved with the Defense communications satellite programs, the development of automatic switching, and in the organization and planning of the Defense Communications Agency.

December 1962 to present -- Special Assistant to the Director of Telecommunications Management, Office of Emergency Planning.

Extracurricular activities have included study of military history and the interaction between the advance of weapons technology and history. Member of the 117-L (satellite reconnaissance) Advisory Committee from 1958 to 1960. Member of the Joint Technical Advisory Committee of the IRE and EIA 1958 - 1962 -- Chairman, 1960 - 1962. Member USIA Scientific Advisory Group 1960 - 1962.

Fellow, Institute of Electrical and Electronic Engineers and the American Association for the Advancement of Science; Member, Council of Foreign Relations; American Academy of Political and Social Science; Armed Forces Communications and Electronics Association.

April 9, 1964

FCC Comments
on
Bureau of Budget's
"Study of Federal Communications Organization"

The Bureau's Study makes six major program recommendations and a single organizational recommendation. [2] All of these recommendations are intended to strengthen and make more effective the role of the Federal government in the vital and dynamic communications field. The Commission agrees that this role of the Federal government can and should be strengthened and made more effective. However, we are of the opinion that these general goals, and most of the Bureau's specific recommendations can best be achieved within the organizational framework presently prevailing within the Federal government. In particular, we must emphasize our complete disagreement with the recommendation that most directly affects our functions, i.e., to establish a single radio spectrum manager in an executive agency, and our comments are largely directed to this proposal.

Vesting Overall Management of the Spectrum in an Executive Agency

The Bureau of the Budget Study recommends an end to divided management of the radio spectrum by the DTM and the FCC and establishment of a single spectrum manager within the Executive Branch. Specifically, the Bureau concludes:

> We view as highly desirable the concept of vesting overall management of the spectrum in an executive agency, leaving only licensing and regulatory functions over broadcasting and common carriers with the FCC. We would view the expanded spectrum management function as one to be logically associated with the other responsibilities of the policy staff discussed previously. [3]

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[1] These concern: (1) Policy planning; (2) Government communications operations; (3) Procurement assistance to executive agencies; (4) Research; (5) Spectrum management, and (6) Technical assistance to Federal agencies, State and local governments.

[2] Establishment of a communications policy organization in either the Department of Commerce or the Department of Transportation.

[3] The Bureau states that its recommendation is based on the findings and conclusions of the President's Task Force on Communications Policy as well as the recommendations of the Joint Technical Advisory Committee (JTAC) Study on Spectrum Engineering Capability.

Thus, under the Bureau's proposal it is not suggested that the licensing of broadcasting and the regulation of common carriers be transferred from the FCC. Rather, the Executive Agency would allocate frequencies for broadcasting and common carrier use, with the FCC assigning particular frequencies to particular applicants. For all uses other than broadcasting and common carrier service, the Executive Agency responsible for spectrum management would apparently perform both the allocation function and the frequency assignment or licensing function for both Government and non-Government users. 4/ For the reasons set forth below, we believe that spectrum allocation is a central and indispensable part of the FCC's regulatory functions, and that the proposed new split of authority is not only unnecessary for achieving effective spectrum management, but would, in fact, have highly adverse effects.

First, we do not think that regulatory authority over broadcasting and common carrier services can properly be isolated from regulatory authority over other non Government uses of radio. It has been recognized in the area of broadcast distribution (e.g., transmission from studio to local broadcasting station or CATV system) that broadcasting and common carrier regulation overlap so that separate regulatory commissions for each service would not be desirable, 5/ e.g., Sports Network, Inc. 12 Pike & Fischer, R.R. 2d 241, illustrating

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4/ While the Bureau states that the Commission will be limited to licensing broadcast stations and regulating common carriers, it does not specifically indicate how or where several important Commission functions will be carried on under its proposal, e.g., experimental radio services, the entire field engineering and monitoring function, the setting of technical standards, type acceptance and type approval of equipment, radio operator licensing, etc. Inasmuch as these functions vitally concern both spectrum management and the licensing and regulation of the broadcast and common carrier services, we seriously question whether they could be effectively carried out under the proposed new split of authority without, at the least, considerably increased expenditures resulting from extensive duplication of facilities and effort.

5/ Under the unified spectrum allocation proposal, the Commission would license broadcasting stations per se, but apparently not broadcast auxiliary and other related stations. Among these are remote pickup stations in the land mobile service, studio-transmitter links in the fixed service, inter-city relay stations, instructional television fixed stations at 2500 MHz and the community antenna relay service at 13 GHz. Coupled with these existing systems are continuing efforts to exploit

(Continued on next page)

the impact of common carrier rates for interconnection facilities on network television operations. Similar considerations apply to other non-Government services. Thus, apart from rates, there are further questions as to (i) whether broadcast program distribution facilities (either terrestrial or satellite) should be owned by common carriers, broadcasters, or CATV interests or some appropriate combination, and (ii) interconnection of various systems. Regulation of CATV is already inextricably linked to regulation of broadcasting and common carrier services, and may increasingly involve common carrier aspects. An Executive Branch assignment of frequencies to CATV as a "business" user (i.e.,one in the safety and special radio services) could completely undercut Commission regulatory policy in the broadcasting and common carrier fields. Moreover, aside from public safety uses, all business and industrial uses of radio in the so-called Safety and Special Radio Services are related to common carrier regulation in the sense that they may "skim-the-cream" and adversely affect common carrier services and/or rates to the general public. If the big commercial users were assigned frequencies to operate their own independent communications systems without regard to the effect on overall communications structure, the result might well be to thwart any effective Commission policy or regulation in the common carrier field.

Thus, in Docket No. 11997,the Commission held an extensive and detailed proceeding which resulted in allocating frequencies above

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5/ (continued from preceding page):
new technology in accomplishing many of the same functions in new and different ways, all of which have an impact on the spectrum. Examples are the Commission's proceeding to authorize spectrum for a high-capacity, local distribution service for use by CATV systems (Docket No. 18452; 16 FCC 2d 433), and the proposals of ABC and the Ford Foundation to use space techniques for television program distribution, to name but a few. It is not clear how the Commission could make policy decisions with respect to this overall complex -- including eligibility, permissible communications, the appropriate mix between the broadcast auxiliary, community antenna relay and common carrier services in the relay of program material, etc. -- without having jurisdiction over all aspects and the power to allocate frequencies to effectuate its decision.

890 MHz to private microwave users. This proceeding, in our opinion, is a classic example of the use of frequency allocation authority to effectuate basic regulatory policy. In this proceeding, Commission considered all of the following factors:

1. Would it be more economical for the potential microwave users to provide their own facilities through use of discrete frequencies allocated to such a service?

2. Apart from rate and cost considerations, could these users get timely service of the type and quality they require from a common carrier?

3. What effect would such an allocation have on all other users of common carrier services both in the rates for and the quality of service available?

Consideration was also given to the effect that the creation of a competitive situation would have in stimulating the carriers to devise new services, install new facilities or otherwise make their services attractive to users which have the alternative of providing their own facilities available to them. The carriers reacted to the above 890 decision by introducing new services and plans such as Wide Area Telephone Service, Telpak rate schedules, broad band tariffs and other similar offerings. Also involved were collateral benefits which might result from such an allocation of frequencies, this including creation of new sources of supply, diversity of equipment and development of new and more equipment at lower prices.

In short, we think that most civilian uses of radio are inseparably linked together and require unified and coordinated administration. We believe it essential that the regulatory and policy making functions with respect to all non-Government uses be centralized in one agency.

There is a second and equally important point -- namely, that within a single service such as common carrier, there must be integrated regulation -- yet under the Bureau's approach, there would be a disastrous split between wire (cable) which the Commission would regulate and spectrum which the new entity would control. We shall briefly develop this point, although we think the force of the point is obvious.

The basic policy objectives and national goals to be satisfied are set forth in the Communications Act of 1934. These are to make available as far as possible to all the people of the United States,

a rapid, efficient, nationwide and worldwide wire and radio communications service, with adequate facilities at reasonable charges. These services and facilities can, in many instances, be provided alternatively by use of cables or use of the radio spectrum. Accordingly, allocations of spectrum must be made in such fashion as to insure that the nation's total communications resources -- wire, cable, radio and satellite -- will be used as best suited to provide the public with the most economic and efficient overall communications system. Since, under the Bureau's recommendation, the Commission would retain control over the authorization of cable and wireline facilities, a severance of the frequency allocation function from the Commission could only result in the fragmentation of an existing overall unified activity. At the present time, before making a determination with respect to the allocation of portions of the spectrum or the satisfaction of particular needs through the use of wireline facilities, the Commission is in a position to review the entire picture and make decisions on the basis of overall policy determinations. Before making such determinations, the Commission necessarily takes into consideration the benefits to be gained from following each of the various available alternatives. Thus, it considers which course would lead to the most efficient and effective use of the relatively scarce spectrum. It also evaluates the economic impact of allocating frequencies for particular private uses upon the ability of common carriers to provide service. If the proposed fragmentation were to take place, the Commission would not itself be in a position to make the basic policy determinations as to the aforementioned trade-offs and benefits from the use of wire, cable, microwave, high frequency, over the horizon scatter, wave guide, laser and satellite techniques, to meet each particular need in this multi-billion dollar group of services. Instead, we would be the prisoner of the allocations determined by another agency which would either be required to duplicate the Commission's activities to be as well informed as the Commission or to risk the danger of acting without full appreciation of the potential consequences of its decisions on common carriers, broadcasters, CATV interests, other users and the general public.

In view of the foregoing discussion, it is, we think, fundamental that with respect to non-Government uses the spectrum allocation function cannot be split off from the regulatory and policy making functions. Spectrum allocation and frequency assignment are extremely important regulatory tools which properly belong to the agency charged with the continuing regulatory and policy making responsibility. For example, a Commission proceeding might involve the question of whether the public interest would be better served by providing television

service through local UHF broadcast facilities or by having CATV bring in by microwave distant broadcast signals for cable distribution. 6/ The Commission should not be required to go as a supplicant to another agency in the Executive Branch for a spectrum allocation to carry out its policy determination in such a proceeding, with the possibility that its request might be denied on the basis of a conflicting policy determination by the Executive Branch. If the spectrum allocation were granted and changing events in this dynamic and evolving area warranted a different policy determination, the Commission would be unable to change course because the allocation function was the prerogative of the Executive Branch. Or the Executive Branch, perhaps by allocating spectrum for CATV microwave but not for UHF-TV, could force the Commission into a particular television distribution structure, against its best judgment as to the over-all public interest in light of the data available to it, views of interested persons,pertinent social and economic considerations, and accumulated expertise. The allocation function necessarily entails underlying policy decisions, which cannot be made in a vacuum by an Executive capability unfamiliar with the interacting operational details and lacking the expertise gained from a continuing, comprehensive, regulatory role.

This latter point deserves emphasis. The spectrum allocation function is far more than a means of dividing a resource among various business users in such a way as to promote efficient utilization, technological advancement, and the national economy, while avoiding spectrum "pollution." The discussion by the Task Force of the land mobile service recognizes that in addition to the economic value of spectrum to business users, there is a social value in public safety uses. The allocation of spectrum to broadcasting is not predicated upon the economic value of the spectrum to the advertising and broadcasting industries, but rather upon the social value of broadcasting to the nation and the general public, e.g., an informed electorate, education, entertainment, the dissemination of diverse viewpoints from diverse sources, local self-expression, etc. The Commission has exercised its spectrum allocation function in such a way as to encourage the potential development of noncommercial educational stations, a fourth network, and additional local outlets by reserving frequencies until they were in a position to use them. It has recognized that potential users of this nature, though of social importance, face financial difficulties, require time to get underway, and would probably

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6/ Cf., e.g., Midwest Television, Inc., 13 FCC 2d 478.

lose out in a first come, first served system or in a free competition for spectrum with well-financed commercial broadcast or business applicants. There is no legal bar to withdrawing frequencies from existing commercial broadcast or business use for a late-coming user of higher social value. However, this is often difficult to accomplish as a practical matter, and it would be unrealistic to base an allocations policy on any assumption of an easy re-shuffling of users. This is particularly true with respect to television broadcasting because of the large investments involved. 7/ The Commission should not be deprived of the important and essential spectrum allocation tool as a prime means for promoting public policy in the many-sided aspects of the communications field. We emphasize again our view that effective use of the spectrum allocation tool to implement public policy requires an agency having the intimate and continuing knowledge of the industry's operations and the diverse social factors involved which flows from day-to-day regulatory responsibility.

The same is true in the vitally important multi-billion dollar common carrier services. In the domestic area, as stated, decisions must be made as to whether the spectrum or wire line facilities should be used to provide these services which involved almost $5 billion of annual investment. In each instance, the relative merits of allocating a portion of scarce spectrum facilities must be weighed against the advantages and disadvantages of relying on wireline or cable. Furthermore, within the uses of radio, decisions must be made as to whether microwave, high frequency or other portions of the spectrum are best suited to particular needs. Since the totality of common carrier facilities must be interconnected to provide a nationwide

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7/ The Task Force states that television broadcast allocations are well established and implies there is little possibility of change in the foreseeable future that could cause any problems as between the Commission and the new spectrum management authority. The implication is, we feel, unjustified. Thus, there are presently pending before the Commission two major proposals involving allocation of the UHF television band -- one concerning sharing of the lower seven UHF channels by land mobile users (Docket No. 18261), and the second proposing reallocation of UHF channels 70-93 for land mobile use (Docket No. 18262). Other significant matters currently under Commission consideration may also result in proposals for changing existing television allocations.

and the American end of a worldwide system, each decision is affected by previous decisions and, in turn, affects all later decisions. Allocations of spectrum cannot be made to large commercial users for the operation of their independent communications systems without regard to the effect on overall communications structure. Otherwise, effective public policy and regulation in the common carrier field could be adversely affected, if not completely negated.

We wish to make clear that we recognize that there is certainly room for improvement, both procedurally and substantively, in spectrum management. However, we believe the Task Force has failed to demonstrate that such shortcomings as may exist stem from the present split of spectrum authority or that a single spectrum manager is either necessary or desirable in order to implement its principal recommendations. Thus, for example, the Task Force places greatest stress on the spectrum needs of the land mobile services. However, the Commission has already assigned this matter the highest priority and, as we have noted, has proceedings underway, e.g., Dockets 18261 and 18262, concerning proposed land mobile use of parts of the UHF television allocations. While we believe that block allocations are necessary and desirable for some services, we would agree generally that flexible spectrum engineering on a regional basis, particularly in the safety and special radio services, offers possibilities which should be explored and exploited to the extent practicable and have already taken some steps in this direction. And we are in favor of the suggestion that non-Government users should have access to lightly used or unused Government bands to the extent practicable and that there should be greater coordination between the two sectors for spectrum engineering purposes. We believe that this latter suggestion can be effectuated by tight liaison procedures, with heightened emphasis on non-Government sharing of lightly used or unused Government bands, where appropriate, in much the same sense that Government is now afforded access to unused non-Government bands in many areas.

Further, we support other recommendations of the Task Force which will improve spectrum management, as well as aiding in other areas, and which we believe can and should be implemented within the present framework. Thus, we support the proposals to strengthen the Commission's in-house capabilities; to establish a common data-base; to strengthen the capabilities of the OTM; to create an independent interdisciplinary capability 8/ which might assist both the FCC and

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8/ While comment on a specific location for the interdisciplinary capability would be inappropriate, we do think it important that such a capability be truly "independent" and therefore not located in an agency with a significant user interest.

DTM and participate in proceedings before the Commission; and to encourage university-based communications policy training programs. We do have some problem with the concept of a government capability undertaking a large scale, very expensive program of research and development in the communications technology field, without a clear understanding of how this would relate to industry research activities and of how the results would be translated into services or facilities to the public. 9/

These suggested improvements can be accomplished within, or as a supplement to, the existing organizational framework and without going to the further drastic step of a fundamental realignment and division of authority which will have serious detrimental effect. Further, many, if not all of the suggested improvements can be implemented expeditiously within the present framework, whereas the single spectrum manager proposal would necessarily involve lengthy and controversial legislative proceedings of uncertain outcome in view of the serious drawbacks.

The Task Force also indicates that creation of a single spectrum manager would simplify spectrum allocation proceedings. We believe, on the contrary, that the procedures would be more complicated and time-consuming. The Commission would have to continue holding its proceedings in order to determine its policy to recommend to the spectrum manager. Further, it would appear that due process would require the spectrum manager to afford interested parties an opportunity to participate in appropriate public proceedings before taking final action on frequency allocations affecting non-Government spectrum users.

Finally, we note the Task Force's statement that one of the benefits from creation of a single spectrum manager would be that it would "subject federal usage claims to scrutiny by an agency charged also with protecting non-federal interests in spectrum use." We suggest that a more significant consequence would be that an executive agency charged with fulfilling military and other government spectrum needs would have control over non-Government spectrum use!

9/ There are substantial research programs by various industry segments and the Bell System, for example, spends several hundred millions a year for the research activities of the Bell Laboratories. We assume that the government would not undertake to duplicate such activities without first ascertaining where industry has failed to discharge its responsibilities and how a government expenditure of such magnitude would result in further public benefits commensurate with the outlay of funds. We also note that government in this field -- unlike, for example, transportation and road building -- has only indirect means of translating research into services or facilities.

In sum, we think that the spectrum allocation, licensing, and regulatory functions are one complex ball of wax that cannot be split up among separate authorities except at great sacrifice to the achievement of a unified communications policy in the non-Government area and a full realization of the potential contribution of spectrum usage to the national welfare. Thus, we must emphasize our complete disagreement with the Task Force's unsupported conclusion that the Commission's spectrum allocations functions are distinct and separable from its licensing and regulatory functions. We believe all evidence and experience leads directly to the opposite conclusion. We recognize, of course, that divided management of the spectrum, with no agency empowered to artitrate conflicts between the Government and non-Government sectors, may appear illogical on an organizational chart. But the fact remains that this split of authority has functioned well over a considerable period of time, with no serious conflict giving rise to a compelling need for compulsory arbitration. See, e.g., Bendix Aviation Corp. v. FCC, 272 F 2d 533 (D.C. Cir.), cert. den., 361 U.S. 965. It makes even less sense to replace one split of authority, which has proved workable, with another split of authority which will, in our view, be both unworkable and prejudicial to the achievement of important communications goals.

Policy Planning, Formulation and Direction

The Bureau's Study recommends: "A New and strengthened central policy and long range planning organization for telecommunications should be established in the executive branch. The nucleus for this organization should be created using as a base the Office of Director of Telecommunications Management now in the Office of Emergency Preparedness."

The Commission endorses this recommendation insofar as it calls for a strengthened capability for central policy making and long range planning for the Executive Branch. The resources thus far provided within the Government for this capability have been limited and, in our opinion, inadequate, and the increasing demands flowing from the explosive technology make significant expansion imperative. This, we stress, is true, not only with regard to the Executive Branch, but also as regards this Commission. For the Commission must have adequate policy planning capability to carry out its regulatory and licensing functions and particularly the essential spectrum management function discussed above. Considerable progress has already been made in enhancing the Commission's policy planning capability through actions establishing a Special Assistant to the Chairman for Planning

and through the initiation of the Commission's research and policy studies program. More needs to be done, however, in strengthening this vital area of our activities. The planning and execution of research programs has been closely coordinated with study programs undertaken by the DTM. Moreover, close liaison has been maintained with the Bureau of the Budget in planning and funding the research and policy studies program and this has also assured close coordination with efforts underway in other agencies and has prevented duplication among the programs. We believe that this type of coordination can be expanded and made more effective in the future, in the same manner as the Bureau of the Budget coordinates major Government programs which cut across agency lines through its budget review process.

We would also like to comment on the need for a new executive capability. For while we are not an executive agency nor do we purport to be experts on government organization, we have had continuing close liaison with the OTM and its predecessors, and the effectiveness of the Executive Branch's future efforts in this area is of vital concern to us. In our view, any existing shortcomings in the executive capability stem not from organizational location, but rather from failure to provide OTM with adequate authority, and particularly from failure to provide necessary manpower and resources. Indeed, we see significant advantages to keeping the present organization -- or at least keeping the office independent. In this way, the office can continue to concentrate single-mindedly on its important communications mission. If the office is placed in an executive department, such as Commerce or Transportation, it will necessarily be submerged in a huge organization with a primary mission involving either the promotion of commerce or transportation which would undoubtedly take precedence over the communications functions. Moreover, the effectiveness of the office will likely be reduced because of the conflict of interest necessarily resulting from the status of the Departments of Commerce and Transportation as significant operators and users of communications facilities. In short, we believe such a transfer would weaken rather than strengthen the capability for central policy making and long range planning with the Executive Branch.

Operations

The Bureau's Study recommends: "that the National Communications System staff undertake (1) an implementing study to transfer the Federal Telecommunications System to the Department of Defense for merger with the military administrative communication systems to provide service for

all Federal agencies, and (2) a study of the appropriate location and combination of the roles and functions of the Executive Agent and the Manager of the NCS within the Office of the Secretary of Defense in order to provide unified guidance to the NCS from within the Defense Department. An effective mechanism should be provided whereby the member agencies of the NCS can advise and be consulted by the Manager, NCS."

The Study further recommends: "The general policy guidance now provided the NCS Executive Agent (Secretary Defense) by the Director of Telecommunications Management should become a responsibility of the new communications policy organization."

We have no comment on these recommendations, except that, as an FTS user, the Commission would not favor the transfer of FTS unless it would result in non-defense users obtaining service equal to or exceeding that presently provided.

Procurement assistance to agencies

The Bureau's Study recommends: "The National Communications System organization within the Department of Defense should provide a central source of procurement and procurement related assistance for use by executive agencies."

Since this applies only to executive agencies, the Commission has no comment.

Research

The Bureau's Study recommends: "The new communications policy organization should have a limited in-house research capability to support its frequency spectrum management and general policy development responsibilities."

In view of our positions concerning spectrum management and policy planning, we favor limited in-house research capability for both OTM and the Commission as well as adequate authority and funds to utilize outside contractors for appropriate research projects. As stated previously, all research programs in the communications field should be closely coordinated within government and with the extensive

industry research efforts. 10/ While such coordination is presently maintained, efforts in this regard should be increased. We believe a permanent advisory structure providing for the coordination of research programs among the several government agencies should be established and could operate effectively if the Bureau of the Budget supports this endeavor. In addition, both OTM and FCC should be provided with adequate personnel and facilities to evaluate and use the products of research not conducted in-house.

Technical Assistance to Federal Agencies, State and Local Governments

The Bureau's Study recommends: "The New communications policy organization should be coordinator of action taken by Federal agencies on requests for technical assistance in telecommunications from State and local governments and should provide such assistance to Federal agencies who lack in-house capability."

The Federal-State Telecommunications Advisory Committee has initiated coordination in this field. We believe coordination can be effectively strengthened within the present organizational framework.

Organization

The Bureau's Study recommends: "We believe that a new communications organization be established in either the Department of Commerce or the Department of Transportation."

For the reasons set forth above, we favor strengthening both OTM and FCC in terms of manpower, resources, authority and independence, rather than creating a new organization in either the Department of Commerce or the Department of Transportation.

10/ As indicated above, industry has taken the lead in many areas of communication research, particularly in areas not directly related to spectrum management. We believe such industry efforts should be encouraged and coordinated with, but not duplicated by, the government's in-house program.

THE WHITE HOUSE
Washington

January 13, 1965

MEMORANDUM FOR

THE PRESIDENT

This is a summary of a more detailed Memorandum for the President which discusses some of my reactions after six months as Special Assistant to the President for Telecommunications.

The memorandum attached outlines problems in telecommunications which have national importance and are of significance to the President.

The major point made is that many Government agencies are involved in regulating, influencing, controlling, the course of our national telecommunications business, both private and Government. Yet no one of these agencies has responsibility for, or is performing, the function of looking at telecommunications problems from the over-all vantage point of the President or of advising the President of the over-all long term implications of piecemeal actions.

The problems identified are summarized as follows:

1. There are several critical hazards now facing the Communications Satellite Corporation which must be surmounted.

2. We need national policies in telecommunications to release the full growth potentials of this industry.

3. The performance and structure of our international common carrier communications have been out of date for years and need modernization for the United States to achieve its needs internationally.

4. Some present trends of Government action and thought can slow down growth instead of stimulate it in our national telephone business.

5. Government ownership of telecommunications systems is growing -- not shrinking. This means more Government capital tied up, larger payrolls, more expense, less economy. The trend needs reversal.

6. The problem of obtaining really adequate Presidential telecommunications requirements at a cost we can afford is still unsolved. More study effort can improve this situation.

7. The President planned, and Congress was told, there would be more policy planning at the Presidential level for our National Communications System than can now be provided with resources on hand.

8. Funding has been so inadequate and the problem is so large that we are not now prepared to go effectively from a peace to war (or emergency) footing in telecommunications.

9. Industry and the Congress are most critical of lack of Federal planning and decision-making in determining the most effective use of the frequency spectrum.

10. Telecommunications functions of the Federal Government are prescribed in 26 executive orders, at least four statutes, and several Presidential memoranda promulgated over 30 years. A 1965 over-all review is needed.

11. Without curtailing freedom of enterprise we can stimulate the telecommunications industry to greater growth to provide the much more advanced communications which are essential to the Great Society.

12. There is only one possible source of adequate leadership for this effort -- The President. His telecommunications staff, to be effective, needs to be organized as part of his office -- similar to the Office of Science and Technology. Otherwise we still have the uncoordinated situation that exists today.

J. D. O'Connell

Attachment

THE WHITE HOUSE
Washington

January 13, 1965

MEMORANDUM FOR

THE PRESIDENT

My first six months' experience as the President's Special Assistant for Telecommunications and Director of Telecommunications Management have been devoted to:

Resolving those urgent problems which have been referred to the office by many agencies of Government and by industry;

Seeking understanding and insight as to how the problems and progress of telecommunications are related to the President's many functions as:

Head of State;

Commander-in-Chief;

Chief Executive Officer of Government Organization and Operations;

Chief Catalyst of our National Economy and Society.

With these Presidential functions in mind it has been my purpose to determine:

1. The telecommunications problems which need to be studied at the Executive Office level;

2. The relative importance of these problems to our national security and economy and hence to the President;

3. The need for modernizing, streamlining, and increasing efficiency and economy in the Government's management of its telecommunications business;

4. The role of telecommunications in the achievement of the Great Society; and

5. The adequacy or inadequacy of the office to cope with past problems and those of the present and future.

In resolving problems which have pressed us urgently during this period, it has been my policy to seek solutions by coordination with Government agencies and with industry.

The responsiveness and recognition of industry leaders has been effective and encouraging. Substantial assistance has come from many Government agencies.

However, only the most urgently demanding problems have been dealt with. The most basic and important are still before us. Some have not even been attacked.

I feel that a brief accounting is now due. Therefore I seek to summarize the principal problems in telecommunications at this time and some of the steps that are necessary to meet the President's objective of new approaches, new ideas, more progress, faster growth, more efficiency and more economy.

PROBLEMS OF THE COMMUNICATIONS SATELLITE CORPORATION

Until the completion and signing of the international agreements, this one important subject received most of my time and attention. It became an urgent necessity to make a thorough analysis of the complex and differing views of the Federal Communications Commission, the Bureau of the Budget, Departments of State, Justice, and Defense, the Communications Satellite Corporation, the Commerce and Government Operations Committees of the Congress, and the prospective international partners concerning the Department of Defense concept of shared use of communications satellites to be owned by an international consortium.

It was finally possible to reach conclusions as to the major difficulties involved -- the most difficult one being the resistance of the foreign partners to accept the concept. A serious threat to the successful achievement of an international agreement was clearly identified and the Secretary of Defense terminated negotiations for the accomplishment of this concept.

Following this and in the final stage of the international negotiations by the State Department and the officers of the Communications Satellite Corporation, there was serious conflict within the Board of Directors of the Corporation concerning the acceptability of the international agreement and the formation of an international consortium. Unfortunately, this disagreement came to a head at a most critical time just prior to the completion of the final session of the international conference. At the request of the Corporation's chief executive officer this office assisted in convincing several members of the Board of Directors of the need for a quorum at a final meeting to authorize the chief executive officer to complete the negotiations and to initial the agreements at that meeting.

Subsequently, assistance to the Corporation by this office has been on an almost continuous basis. Of critical importance to the future health and prosperity of the Communications Satellite Corporation is ownership of ground stations within the United States. Such ownership has been under heavy attack before the FCC by several of the common carriers. This office conducted a thorough analysis of this problem and discussed the results of its analysis with the Chairman of the FCC. A decision has yet to be made by the Commission. This office anticipates being called upon by the FCC to submit independent findings. Considerations to date lead to the conclusion that ownership of ground stations should be vested in the Communications Satellite Corporation.

The Communications Satellite Corporation is confronted with many other important problems -- the selection of optimum satellite systems, the obtaining of workable decisions within the international committee, and the achievement of an agreed-upon permanent organizational structure for the international consortium. The Corporation's success in the meantime will have an important bearing on the final outcome. It is extremely important that the United States Government adopt wise and consistent policies with respect to the development of the Corporation. The present structure of the industry and the basic conflicts which exist between other international carriers and the Communications Satellite Corporation will require careful and continued scrutiny.

Another current and long range problem concerns the question of whether the Defense Department elects to lease its satellite system from the Communications Satellite Corporation. As a matter of long range Government policy it appears desirable that the system be leased. Current DOD plans for its earliest system contemplate a Government owned system in order to meet urgent time requirements. Decision on the later phases of the program is still open and leasing will be given consideration. The policy implications of this decision are a matter of concern to this office which will seek to establish an over-all Government policy which makes leasing of communication facilities the normal procedure.

Recently there have been requests from the British for U. S. assistance in enabling them to establish a so-called government satellite communications system. Such action threatens competition to the international consortium of which the Communications Satellite Corporation is a member. Similar requests from other nations are anticipated. We signed an international agreement with 18 other nations which had as a guiding principle that there would be "a single global commercial communications satellite system." It would appear inconsistent with our signed commitment and with the Communications Satellite Act for the U.S. Government to give support and assistance to these requests. I am now seeking to obtain formulation by all interested Government departments of an over-all United States policy on this subject. It will be submitted for the President's approval at the earliest possible time.

THE PROBLEM OF NATIONAL POLICY-MAKING FOR TELECOMMUNICATIONS -- WHERE ARE WE HEADED?

The telecommunications business, including radio and television broadcasting, is one of the most dynamic and rapidly growing sectors of the economy. The need for its services is great and it can and should be growing even faster than it is. Present annual gross national product is estimated to be 30 billion dollars. These businesses are regulated and affected by Government policies in a variety of ways. Policies which are made independently and separately by many Government departments strongly affect the nature and progress of the telecommunications industry. The absence of decisions, when such are needed, can and do seriously change the course of these businesses.

On the other hand, there are many cases in which Government should properly decide to abstain from policy-making or intervention because solutions can be achieved by the normal play of industrial forces.

The point of prime importance is that we must be evaluating constantly in a comprehensive and over-all way the trend effects of the many decisions being made, or, needed and not being made within Government.

Chairmen Magnuson, Pastore, and Harris are emphatic in their conviction that a clear delineation of U.S. policy in the field of telecommunications is lacking and is much needed. I most strongly agree. I am convinced that such policies can be formulated. Getting general acceptance by all departments of Government can be expected to be more difficult. I feel it can and must be done.

However, I conclude that it is an oversimplification to believe that a one-time statement of such policies will answer our needs. We shall need an organization which can determine continuously the current and future health of this industry which is so important to our national growth, our international success, and our national defense.

THE PROBLEM OF INTERNATIONAL COMMUNICATIONS

Since 1943 there have been many recurring evidences of insufficiency of the business structure of United States carrier-owner international communications. Several of these insufficiencies of the record (telegrams, etc.) communications organization have led to Congressional hearings for the purpose of developing legislation to remedy the situation.

A basic reason for lack of decision by Congress has been the lack of agreement among Government agencies which have varied interests in this field. Studies adequate to bring about agreement have not been made. Senator Magnuson, Senator Pastore, and a large segment of the U. S. industry feel strongly that the structure of our international communications business should be carefully studied; that we should formulate a sound national policy; and should determine the optimum business structure for the conduct of international communications in the best interests of the general public and the national interest.

The future of our international communications is most important to our economic future, to the achievement of crisis control, to a strong national defense, and to the achievement of our national objectives for a peaceful world. We can expect greatly increased foreign competition in this field in the immediate future. If our U.S. carriers continue to be preoccupied with fighting among themselves for franchises, cable ownership, and landing licenses, foreign competitors concentrating on their national interests can further weaken our position.

We need a strong, viable, responsive instrument which can give the United States the position it needs. Our experience of the past year does not give satisfactory evidence that we will achieve this with our present organization.

The Senate and House Commerce Committees look to this office to provide leadership to achieve unity of view among the Federal Government agencies and, if possible, U.S. industry, so that effective and decisive Congressional action can be taken. The problem is to provide a factual basis on which the Government departments can reason together and to obtain the factual material on which to base this reasoning. An intra-governmental committee has been created to provide an assembly for this reasoning. It is chaired by Chairman Henry of the FCC and by me as co-chairman.. A distinguished non-profit research firm has been

selected to provide and select the material which the committee needs to perform its evaluation of the problem and alternate solutions.

The objective is to achieve a unanimous, intellectual conviction during 1965 in order that presentations can be made which will permit the Congress to conduct hearings starting early in 1966. A preponderance of the telecommunications industry members has agreed to participate in the study by making records and data available. This office must provide the necessary leadership to make this a successful effort.

THE PROBLEM OF CURRENT TRENDS IN OUR NATIONAL TELEPHONE INDUSTRY

The telephone system and service in the United States are by far the largest and in most respects the best in the world. Generally speaking, the industry is healthy financially, earnings are good, rates are reasonable by world standards and have risen much less than the dollar has depreciated over the past four decades. Healthy growth continues.

The Bell System with its Long Lines Division, its Bell Telephone Laboratories, and its manufacturing subsidiary, the Western Electric Company, have made major contributions to the present capability of our telephone system to support the needs of our economy. The developments of new systems, equipment, and technology by the Bell Telephone Laboratories have been largely available to smaller companies and have saved them much in development costs. At the same time, a high degree of system standardization has resulted, with the effect of lower cost and better general service to public and Government. This company repeatedly demonstrates that it has achieved a uniquely high awareness of its national obligations in public service and is highly responsive to those obligations. Of great importance to Government is the program of the Bell System to design and install at its own expense new long lines facilities which have hardened survivability.

Several other telephone companies -- for example, General and United -- have been growing rapidly and prospering. The normal, healthy trend of the telephone business will be the expansion of groups of such independents into strong organizations exerting greater independent influence on the growth of the telephone business. Such growth can bring greater financing capabilities into play and should be encouraged as a means of faster growth.

The recent trend of Government actions has been to constrain the Bell System in several ways and in both the national and international fields. There is current discussion of the difficulty of maintaining effective regulation of so large a company. Discussion is also heard of the feasibility of breaking up the present AT&T Company into many companies with each franchise limited to a particular State. There are other concepts also for reducing this large corporation to more manageable size and increasing equipment competition.

There appears to be no question as to the essentiality of efficient regulation fully adequate to perform its function.

The over-all problem is highly important for our national future which will require the most effective research, development, manufacturing, and operating capabilities which can be brought to bear to provide new technology at the lowest possible cost. It is at least highly questionable that this objective will be best served by fragmenting a capability that has proved beyond question its ability to deliver in a thoroughly competent way.

The problem should be receiving well-informed, objective, deliberate, over-all economic, political, technical, and legal study. I cannot find evidence that such a coordinated study is being made. In the absence of such a comprehensive effort, piecemeal remedies with limited objectives and unpredictable results would appear to be extremely hazardous.

THE PROBLEM OF GOVERNMENT OWNERSHIP VS. GOVERNMENT LEASING OF TELECOMMUNICATIONS FACILITIES

Several committees of the Congress are much interested in this problem. Views differ markedly and are strongly held. Chairmen Magnuson and Pastore press urgently for the generation by this office of a Federal Government policy. We should produce such a policy within 1965.

Meanwhile the problem grows. There is a Defense Department stated policy to use the common carriers and lease facilities whenever possible. Nevertheless the Government ownership of military satellite systems and of long submarine ocean cables is rapidly increasing. Competition with commercial systems appears to be inevitable unless new solutions can be conceived. Generally, it is possible to construct new systems more rapidly with the Government ownership approach. Yet in the long run the use of leased facilities reduces the investment of Government capital, prevents the growth of Government manpower requirements, and saves money in several ways. Expansion of the common carrier systems to meet Government needs also results in better service to the general public.

Recent decisions of the Federal Communications Commission concerning the fourth transatlantic cable and related matters tend to lessen the advantages of leasing and make such leasing more difficult and expensive.

New approaches should be sought which will satisfy the needs of our changing requirements.

I am convinced that an effective solution requires consideration of the total problem rather than some of its parts and by bringing Government agencies and industry into an adequate team relationship. This can be done by effective leadership at the level of the Office of the President.

THE PROBLEM OF DETERMINING PRESIDENTIAL REQUIREMENTS FOR ESSENTIAL TELECOMMUNICATIONS

There are a number of major factors which must be considered in determining the needs of the President for communications in emergency. They are (1) the kind of an attack which could be mounted by an enemy; (2) the constitutional and other legal requirements for Presidential action; (3) United States strategic doctrine; (4) the centralization and decentralization of command-control; and (5) the plans for continuity of the national command responsibility.

Where the Constitution and legislation demand it or where the risks attendant upon independent action at lower echelons of command are very high, the disadvantages of centralization must be accepted. In cases where the tactical moves themselves require consideration of worldwide information and affect the well-being of the entire nation, only the Commander-in-Chief has the needed breadth of access and the level of responsibility to act. In such cases, which include attack by other than Soviet or Chinese communist forces, there is threat of general nuclear war. The Presidential level is the operational level and the ordinary arguments in favor of downward delegation of command-control authority are inoperative. Centralized Presidential command-control over strategic offensive forces is necessary both to avoid unwanted action and to afford positive control of forces in combat.

In one sense it is simple to translate these into communications requirements. The stakes are so great in the issues we face -- holding our gains and supporting our friends in the cold war; crisis control to prevent hot war; readiness to survive and win should nuclear war be forced on us -- that it would be simple to say that the President must have whatever telecommunications he may need. Furthermore, his communications must be ever ready, totally reliable, and totally secure against those who would use information to our disadvantage.

But telecommunications meeting these total needs do not exist and the cost of providing them would be huge. The world's commercial networks alone are not sufficiently dense or geared to the standards required.

This is the crux of the problem -- to determine the essentials -- to ensure that they are ready -- to be sure we are getting full value for money expended -- maintaining a reasonable balance between meeting essential needs and the total cost.

Our determinations in the past have not been such as to inspire confidence in the future. In each crisis during the past ten years (including Cuba), we have had to conclude that we had not planned adequately; that our needs had not been met. Planning and execution are being better done today but requirements continue to increase in terms of both capacity and complexity. Generally speaking, voice communication systems available for Presidential use are either inconvenient or not secure and are not available as yet to a sufficient number of places to meet his needs. All are expensive. Yet the effect of disclosure of Presidential telephone discussions as Head of State or Commander-in-Chief could have most serious consequences.

I am convinced that this entire problem requires more careful and continuous study by this office than it has received in the past.

THE PROBLEMS OF THE NATIONAL COMMUNICATIONS SYSTEM

Recommendations by the Presidential Emergency Planning Committee, the Shepard Task Force, and the Orrick Committee, prompted President Kennedy to establish a National Communications System in August 1963.

This sought to provide a single, unified system to meet the necessary communications requirements of the Federal Government under all conditions ranging from a normal situation to national emergency and international crisis, including nuclear attack. The system will be heavily dependent upon the telecommunications assets of the General Services Administration and the Department of Defense. The Secretary of Defense serves as the Executive Agent for the development and implementation of the system, and he has made considerable progress in the review of available resources which could be incorporated into the NCS.

However, the NCS is still in its infancy; much needs to be accomplished; and many problems remain to be solved before satisfactory progress in this important undertaking is realized. Some of these problems follow:

1. How to construct and apply a methodology which will indicate those officials and organizations of Government requiring access to the highly survivable portion of the NCS. This derivation is difficult because the importance of a particular individual or organization is relative in nature and communications costs act as a major factor in determining the degree of communications survivability to be provided.

2. How can the Federal Telecommunications System of the General Services Administration be legally and most effectively integrated into the National Communications System?

3. How to effect adequate over-all design of the National Communications System, particularly with respect to its relationships with the U. S. domestic and international common carriers, within the best interests of the Government and economy.

Policy guidance in such areas is critically needed during this formative stage of development to assure that the system meets the demands placed upon it by national security and Government continuity.

With present capabilities this office is not performing an adequate review of actions taken by the Department of Defense.

I believe that much more was promised to the Congress and planned by the President when he issued the memorandum of August 21, 1963, and the National Security Action Memorandum No. 252.

THE PROBLEM OF EMERGENCY/WAR TELECOMMUNICATIONS RESPONSIBILITIES

Our telecommunications resources become of critical importance in national and international crises. They can contribute effectively and promptly to the over-all effort only if sound management procedures are established in the pre-emergency/war environment.

During normal periods a large and complicated organizational structure exerts influence over the many elements of these resources. At the outset of emergency/war environments, complete control reverts to the President. Under existing Presidential orders and instructions, this responsibility has been redelegated to the Director of Telecommunications Management, who would perform centralized control through the Federal Communications Commission and other Government agencies, as appropriate.

Consequently, considerable planning needs accomplishment by the DTM. Existing plans are not based on this concept and largely reflect World War II experience. Therefore, increased activity is required in this subject area.

A new approach is needed.

I propose to form a committee of civilian executive reservists to provide new, efficient, and current concepts for improving our readiness. At this time, I cannot report to you that our emergency/war readiness is satisfactory as it pertains to the control and utilization of telecommunications resources.

THE PROBLEM OF EFFECTIVE MANAGEMENT OF THE FREQUENCY SPECTRUM

Criticism by Congress and by U.S. industry has been frequent and recurrent concerning the way the Federal Government conducts its frequency management operation, the lack of decisive leadership at the top, and resultant waste of the frequency spectrum resource.

The Congress, during the period 1959 to 1961, considered five bills addressed to this subject but approved none of them. Further Congressional action was deferred pending the results of the establishment of the position of Director of Telecommunications Management by Executive Order 10995 of February 16, 1962.

My studies indicate that the criticisms by industry have had a basis but in most cases have been somewhat exaggerated. The Federal Government management has made worthwhile achievements, but much improvement is needed. Actions I have taken to date to achieve that improvement include:

1. Repeated requests to departmental heads to emphasize the need for improved management and the increasing dollar value of each frequency assigned;

2. Assignment to the Interdepartment Radio Advisory Committee (IRAC) of specific responsibilities, including responsibility to act in the national interest rather than solely as representatives of their individual departments;

3. Established a continuous inventory policy and expedited inventorying of Government use of frequencies;

4. Instituted hearings of department justifications for important frequency uses and a policy to make the results public whenever security is not a barrier;

5. Encouraged and assisted the Joint Technical Advisory Committee of the Institute of Electrical and Electronics Engineers/ Electronic Industries Association in a study of the technical problems of electromagnetic compatibility with the view of better utilization of the radio spectrum;

6. Formulated and have under coordination Federal Government telecommunications policy with respect to Government use of the radio spectrum, for inclusion in a Manual of Rules, Regulations and Procedures being developed: and

7. Initiated the establishment of a Frequency Advisory Council to consist of individuals, widely recognized in both Government and industry, as unbiased and qualified experts in frequency management. This will provide one of the major features sought for in the Congressional bills mentioned above, i.e., an expert outside review of Government frequency management.

One of the specific criticisms of Government frequency management has been that several Government agencies were establishing expensive and separate computer facilities using language vocabularies which were not compatible. Work with the principal user agencies has resulted in an agreement whereby they subscribe to one standard vocabulary and data base format for frequency management. The next step is to obtain agreement to the use of a common data processing facility by all agencies of the Government and to complete the essential engineering data base therefor. The final step will be to fund the establishment and operation of the central data processing facility.

Present available information is not adequate to provide us the facts essential to determine the dollar contribution of both Government and non-Government spectrum usage to the Gross National Product; evaluate usage and needs in terms of national defense and security, including emergency requirements, safety of life and property, economy, culture, education, and entertainment; and to ensure that the needs are met in such a manner that both the Government and private sectors share in the use of the spectrum in such a way as to give maximum effectiveness to each. Accordingly, we must improve our storage of facts and their availability.

There is a critical need for looking ahead. U. S. activity in international and national frequency planning has heretofore lacked the capability for long range planning, or even effective short range planning. It is extremely important that the future use of the frequency spectrum be foreseen and provided for, in order that the U. S. Delegations to international conferences will have the necessary guidance to provide for our long range national needs. The measures I have outlined will go a long way to meet this need. Finally, there is the obvious need to strengthen confidence in the ability of the Government to exercise sound management of its use of the spectrum, and to keep the Congress and the public much better informed.

THE PROBLEM OF ORGANIZATION OF RESPONSIBILITY FOR TELECOMMUNICATIONS WITHIN THE FEDERAL GOVERNMENT

It is my understanding that one of your important objectives is to modernize, streamline, make more effective, efficient, and less expensive the operations of the Federal Government.

With this in mind a brief initial review has been made of the diffused telecommunications responsibilities of the various Federal agencies -- some 26 different executive orders, at least four Acts of Congress, and several Presidential memoranda are involved.

The current organizational structure, based initially on the Communications Act of 1934, has been extensively developed and modified from that time to the present. Executive orders, developed one at a time, have covered different aspects of the total problem and have not been subjected in their entirety to over-all review, redesign, and modernization. Each order reflects a situation existing at the time of its promulgation.

Newly developed concepts, including that of the National Communications System, modify departmental relationships and missions. For example, the present disagreement over how management of the National Communications System is to be achieved is a case in point. This problem has to do with the management responsibilities of the General Services Administration for the Federal Telecommunications System and the assigned responsibilities of the Secretary of Defense for the National Communications System.

In some cases, plans of departments are slowed or brought to a standstill by the complex coordination procedures required. In other instances, it appears that telecommunications facilities and systems are planned and budgeted without necessary coordination among other planners handling similar facilities and systems.

Our facilities have not been sufficient to begin to cope with the many aspects of this problem, but such a study needs to be undertaken. A prior conclusion of this need was made by Dr. Jerome B. Wiesner, i.e., "while each of these orders and instructions were carefully drafted prior to issuance, each, nonetheless, reflects a situation existing at the time of its drafting."

I am convinced that an adequate study, conducted jointly by the Bureau of the Budget and my office, is an urgent requirement. Its object would be to correlate the missions and functions of the departments for maximum efficiency and economy.

THE ROLE OF TELECOMMUNICATIONS IN THE PROGRESS OF THE GREAT SOCIETY

What is the relevance of the preceding pages to the Great Society? What has telecommunications to offer to speed the progress?

Firstly, in a variety of ways it can be stimulated to be an even greater contributor to the growth of our economy and the integration of our society. Communications and transportation are the strongest sinews of a society which is successful. One gives mobility to goods and people. The other gives mobility to ideas, concepts, plans, programs, agreements, and understanding.

Secondly, by accelerating its use on an international basis both to and within the developing nations it can be a strong and cohesive force for education, political maturity and stability, international understanding and for the recognition that the world and all the nations in it have much more to gain through productive peace than by destructive war.

The concept of the Great Society sets a great imaginative goal. The root meaning of society is alliance. To work together allies must communicate and understand. To become great a society should have permeating all its members a sense of communion, of sharing, of identification, stemming from a common foundation of information and education.

National loyalties with deep roots, family love and unity, religious faith, are the most powerful forces affecting human societies today. For these, men have the will to live for progress in a difficult world and the courage to die for their beliefs. If national loyalties are ever to be transcended or equaled by good will and peace among the world's peoples, communications must convey both understanding and a sense of common interest and purpose among peoples who now live in mutual ignorance or distrust.

We in the United States have achieved a society called affluent. A large percentage of our population lives in a relatively high state of material comfort -- even luxury. A burgeoning telecommunications system has contributed to this and benefitted from it in a chain reaction. We have in this country roughly half of the world's telephones and perhaps half of the daily television audience. Still better services -- the expansion of broad band information transmission capabilities -- the face to face

confrontation of picturephone -- the passing of high speed data from machine to machine -- the transmission of television over great distances -- are needed at reasonable cost. They will be needed for the Great Society.

Further gains can be made if intelligent thinking is done to this purpose. The potentials of leadership by Government are great. It can advance the pace of business progress without usurping business freedom. For example, we could make immediate gains in wider use of the frequency spectrum through better organization -- and give industry greater freedom concurrently. Our national policies and regulations need to keep pace with the rapid advances of our technology.

Should we not ask ourselves if we are using the telecommunications technology and facilities we now have with a comparable amount of thought, intelligence, and hard work as that which created them?

To this end I am investigating how I can be of service to the Government agencies, such as the United States Information Agency, to further this great cause.

RECAPITULATION

The problems which have been discussed above are broad in scope. They have national importance. They involve the delicate balance which exists between Government and industry, free enterprise and Government regulation. Decisions must be correct and timely. Highly qualified and experienced business, legal, and Government personnel are needed in considering these problems.

I believe that these problems can only be addressed with adequacy at the level of the President's immediate office. It has not in the past been possible to successfully solve them when the function has been organized at lower levels. It is for this reason that I have recommended the reorganization of this office on a similar basis as that of the Office of Science and Technology.

It is my intention to call together as advisors, a council of men of outstanding ability in the financial, business, legal, and scientific fields to give consideration to these and other problems as they develop.

In sum, there is a need to look at what telecommunications can contribute in all ways to the growth of our economy -- to the achievement of national objectives -- to crisis control and the maintenance of peace in the world -- to the more rapid education of our people and of the peoples of all nations with emphasis on those most in need -- and to an accelerated dialogue among nations to illuminate our common interests, increase understanding, and speed the progress toward the Great Society.

The opportunity exists for the President to exert his leadership in this presently uncoordinated domain which can contribute much to other programs in which his leadership is now greater than it has been in our history. There is no other source of the leadership which is required.

I seek your reaction to the views that are set forth in this memorandum. Have I correctly understood your policies and objectives? Are there other areas you wish personally to emphasize?

Respectfully submitted,

J. D. O'Connell

OEP 56681

BB FORM
NO. 4

Bureau of the Budget

ROUTE SLIP

TO Mr. Whitehead

Take necessary action	☐
Approval or signature	☐
Comment	☐
Prepare reply	☐
Discuss with me	☐
For your information	☐
See remarks below	☐

FROM ~~Howard M. Messner~~ mhw DATE 5-8-69

REMARKS

Per your request of
Bill Morrill.

EXECUTIVE OFFICE OF THE PRESIDENT
BUREAU OF THE BUDGET
WASHINGTON, D.C. 20503

MAY 3 1969

Enclosed herewith is a copy of a study of Federal communications organization which was completed by staff of the Bureau of the Budget in December 1968.

The appropriate course of action with respect to Federal telecommunications organization is now being considered by the Administration. We would appreciate your agency's views on the Bureau's study together with any alternative recommendations you may wish to make.

We would like to receive your comments by May 16, 1969.

Sincerely,

Phillip S. Hughes

Deputy Director

Enclosure

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

Paper filed in "Telecommunications meetings — Ford Foundation"

FORD FOUNDATION
320 E. 43rd Street
New York, New York

6/12/69

MEMORANDUM

To: Members of the London and Ditchley Delegations

FROM: Sanford Jaffe

Delmar Karlen has requested that I send copies of my paper directly to you.

Sanford M. Jaffe

Attachment: Participatory Democracy and the Administration Process

Paper filed in "Telecommunications meetings — Ford Foundation"

COMMUNICATIONS LAW, RESEARCH, AND PUBLIC POLICY

This paper sets forth the outlines of a proposed Institute for Communications Law, Research and Public Policy, and the reasons for recommending consideration of such action.

et al.

Thursday 5/1/69

1:30 I told Ken Cole's office that we would be sending a memo since it is the Rostow Task Report -- they will send us a copy of the instruction to DuBridge.

Joan Carroll was asking when they could expect a memo.

Next week

advised Joan 5/2

THE WHITE HOUSE

WASHINGTON

May 1, 1969

MEMORANDUM FOR

TOM WHITEHEAD

FROM THE STAFF SECRETARY

Attached as your requested.

THE WHITE HOUSE

WASHINGTON

FOR:

LEE A. DuBRIDGE
SCIENCE ADVISOR

cc (for information):

John Ehrlichman

FROM THE STAFF SECRETARY

SUBJECT (see attached);

Please prepare legislative proposals on telecommunications.

ACTION AND REMARKS:

___ Prepare Agenda and Brief

___ For Your Comments

_X_ For Necessary Action

___ Draft Reply

___ Draft Remarks

___ For Your Information

Other:

Mr. DuBridge - To expedite lateral coordination, would you please send a copy of Dr. Burns' report XVIII-6, Telecommunications, to John Ehrlichman.

DUE: Date: May 1, 1969 Time: 2:00 P.M.

Please attach this copy to material submitted.

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

K. R. COLE, JR.
For the

February 1, 1969

MEMORANDUM FOR

Honorable Lee A. DuBridge
Science Advisor to the President

A task force, appointed by former President Johnson, has submitted a variety of far-reaching recommendations on telecommunications. You can obtain a copy of the report from Martin Anderson. It would be desirable to establish a small review committee to assess this report, and to prepare whatever legislative proposals may be needed. Would you be good enough to undertake this for me? I would like to have the report of this committee by May 1, 1969.

When you send your report to me, please send a copy to Arthur Burns.

RN:Burns:ltd

MEMORANDUM

THE WHITE HOUSE
WASHINGTON

April 30, 1969
5:00 P.M.

Key items due on Thursday, May 1, 1969:

FROM:	ITEM:	TIME DUE
Dr. L. DuBridge	Legislative Proposals on Telecommunications (Burns' Directive XVIII-6).	2:00 P.M.
B. Harlow	Agenda and Brief for President's Meeting with Senator Saxbe, May 2.	2:00 P.M.
B. Harlow	President's Meeting with Senator Long, May 2 (Agenda and Brief).	2:00 P.M.
H. Kissinger D. Moynihan A. Burns	Secretary Finch's Recommendations Regarding the Selective Service.	2:00 P.M.
D. Moynihan	Agenda and Brief for President's Meeting with Urban Affairs Council, May 2.	2:00 P.M.
W. Safire	Draft Presidential Memo Requesting Secretary Stans to Submit Questions to be Used in Forthcoming Census.	2:00 P.M.
C. Wilkinson	Agenda and Brief for President's Meeting with Red Cross Group, May 2.	2:00 P.M.

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

NCS
Spectrum alloc.
"Poking"

quo
FCC
EB

Spec Alloc
reorgn or legisl?
Congr ~
FCC strongly against
TF for maybe changes in exec branch.
Nat'l security

NCS
EA/Mgt/Opns
Budget

MEMORANDUM

Telecommunications

THE WHITE HOUSE

WASHINGTON

Dec Dual Group SRI — Jim Matheson Director.

Don Gunn

FCC study / mobile comms / regul, computer utility

Dick Posner Stanford Law School

Ray Howard 7/9/67

Phone call

* Wm Lyons State
Coord contribution at
state

THE WHITE HOUSE
WASHINGTON

Spectrum & use of satellite (technical)
* Walt Hinchman
Commerce

* Alan Novak Exec Dir
LLB, former Asst to E Rostow
Agency views (now private practice)

Chas Osborne, DOT
Computers

4 Johnson
TV Novak / Jim Sheridan State or FCC
Spectrum Hinchman
Orbital Frank Lay & Tom Nelson
~~Roberts~~ Alan Novak
6 * Johnson
Bill Melody
5 Johnson, Hinchman

6 & 7 Feb
earlier Tues or Wed 4th or 5th

MEMORANDUM

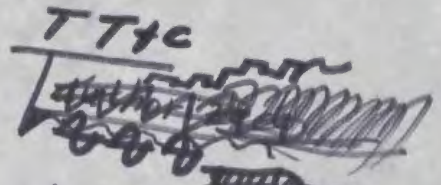
Saving record carriers
Justice, ATT per anti-trust

Comsat etc
Public (should) owned, public pays (to public)

Gov't stn ownership
- encourages use
- in rate base

| $80 m investment
| ≈ "80" annual rev.

TTC



Harold Cothern
ATT

Comsat

U.S. satellite intl orgn.
Intelsat mgr.
U.S. representative Intelsat.

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

II. International
- single entity
- intl carriers out of Comsat

III. Intelsat

IV. LDC's
- Regional trng centers & US pilot project
- Low-cost TV receivers for remote areas
- Intelsat assistance

V. Domestic satellites
- Pilot project - Comsat mgt
-

VII. Common Carriers
- freer entry for supplementary services
- freer tie-in & interfacing
- tolerate WU
- more FCC staff & budget

VIII. TV
- prompt resolution CATV copyright issues
- competitive CATV, subj to adequate OTA TV
- More Exec Branch parties in FCC hearings
- pilot Watts & Navajo project

~~VIII~~

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

VIII. Spectrum Mgt
- Better coord spectrum policy
- More economic factors in licensing
- More sophisticated spectrum engineering
- Single Exec Branch spectrum mgt agency

IX. Fed Govt
- new "capability" to provide analysis & LR planning spectrum mgt R&D & pilot projects
- FCC common carrier regulation tolerated

OFFICE OF
TELECOMMUNICATIONS
MANAGEMENT

CHARTER

of the
DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT

SPECIAL ASSISTANT TO THE PRESIDENT FOR TELECOMMUNICATIONS

ASSISTANT DIRECTOR, OFFICE OF EMERGENCY PLANNING

February 1967

FOREWORD

This pamphlet contains information pertaining to the responsibilities, authority, office organization, and functional interrelationships of the Director of Telecommunications Management/Special Assistant to the President for Telecommunications/Assistant Director, Office of Emergency Planning.

INTRODUCTION

On February 16, 1962, by Executive Order 10995, the President of the United States established the position of Director of Telecommunications Management in the Executive Office of the President, which position is held by one of the Assistant Directors in the Office of Emergency Planning.

On August 21, 1963, the President stated that the Director of Telecommunications Management shall also serve in the capacity of Special Assistant to the President for Telecommunications.

All three of the foregoing positions are held by a single individual who derives his authority and responsibilities from the following:

- Subsections 606(a), (c) and (d) of the Communications Act of 1934, as amended, and as delegated by the President through the Director of the Office of Emergency Planning.

- The Communications Satellite Act of 1962, P.L. 87-624, 87th Congress, H.R. 11040, August 31, 1962.

- Executive Order 10312, "Providing for Emergency Control Over Certain Government and Non-Government Stations Engaged in Radio Communication or Radio Transmission of Energy."

- Executive Order 10705, "Delegating Certain Authority of the President Relating to Radio Stations and Communications."

- Executive Order 10995, "Assigning Telecommunications Management Functions."

- Executive Order 11051, "Providing Responsibilities of the Office of Emergency Planning in the Executive Office of the President."

- Executive Order 11084, "Amending Executive Order No. 10995, Relating to Telecommunications."

- Executive Order 11191, "Providing for the Carrying Out of Certain Provisions of the Communications Satellite Act of 1962."

- The President's Memorandum of August 21, 1963, subject: "Establishment of the National Communications System."

- Office of Emergency Planning Order 1100.1B, "Organization and Functions Manual."

In order to provide an understanding of the responsibilities and authority of the Director of Telecommunications Management/Special Assistant to the President for Telecommunications/Assistant Director, Office of Emergency Planning, the following are contained in this pamphlet:

- Organizational chart of the Executive Branch of Government, Chart 1.

- Assignment of Telecommunications Responsibilities, Chart 2.

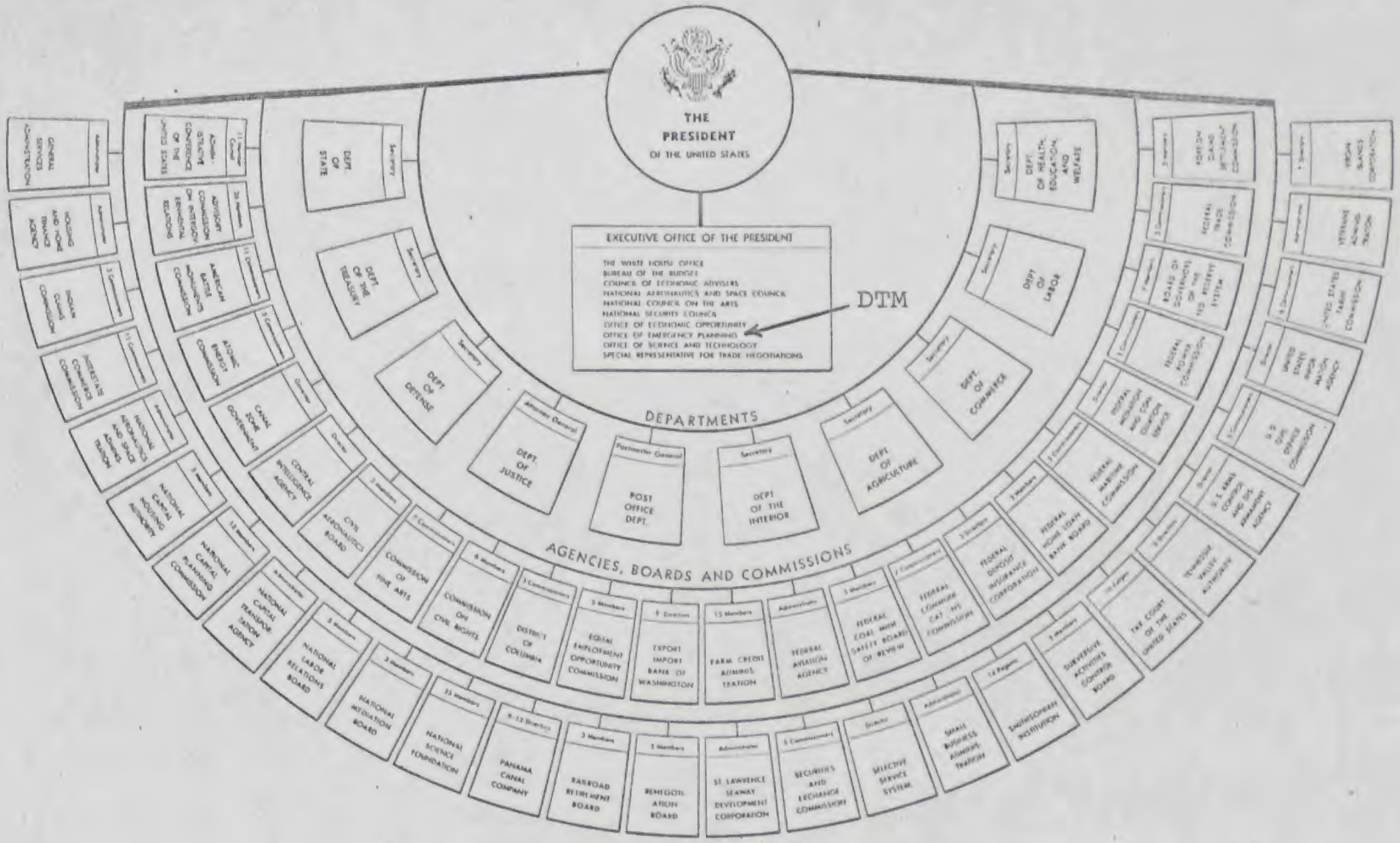
- Functional Organization of the Office of the Director of Telecommunications Management, Chart 3.

- Telecommunications Responsibility Interrelationships, Chart 4.

- The Telecommunications Committee Structure Supporting the Director of Telecommunications Management, Chart 5.

- The Office Charter.

EXECUTIVE BRANCH OF THE GOVERNMENT



EXECUTIVE OFFICE OF THE PRESIDENT • BUREAU OF THE BUDGET

JANUARY 1, 1963

CHART 1

ASSIGNMENT OF TELECOMMUNICATIONS RESPONSIBILITIES

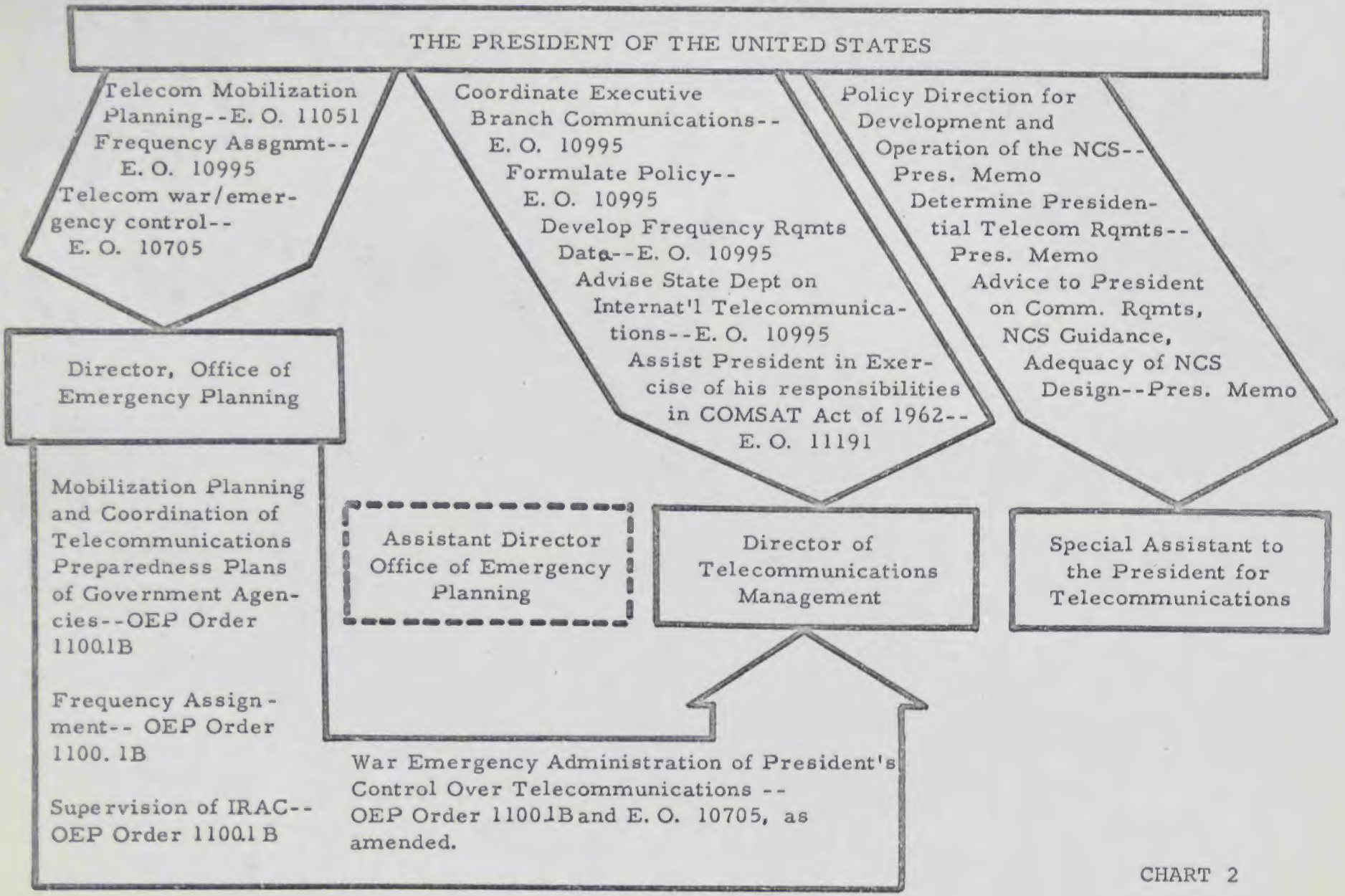


CHART 2

OFFICE OF THE DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT

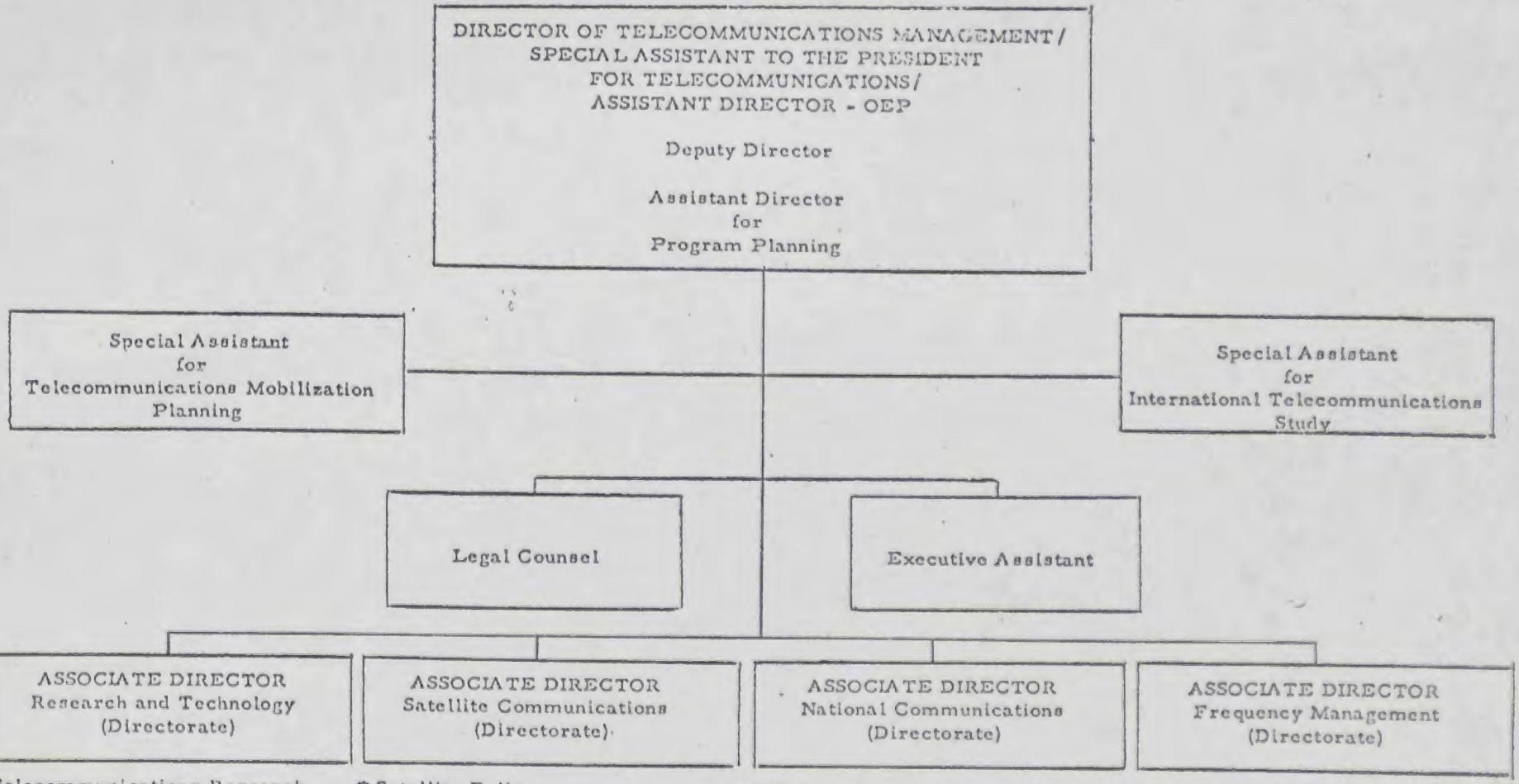
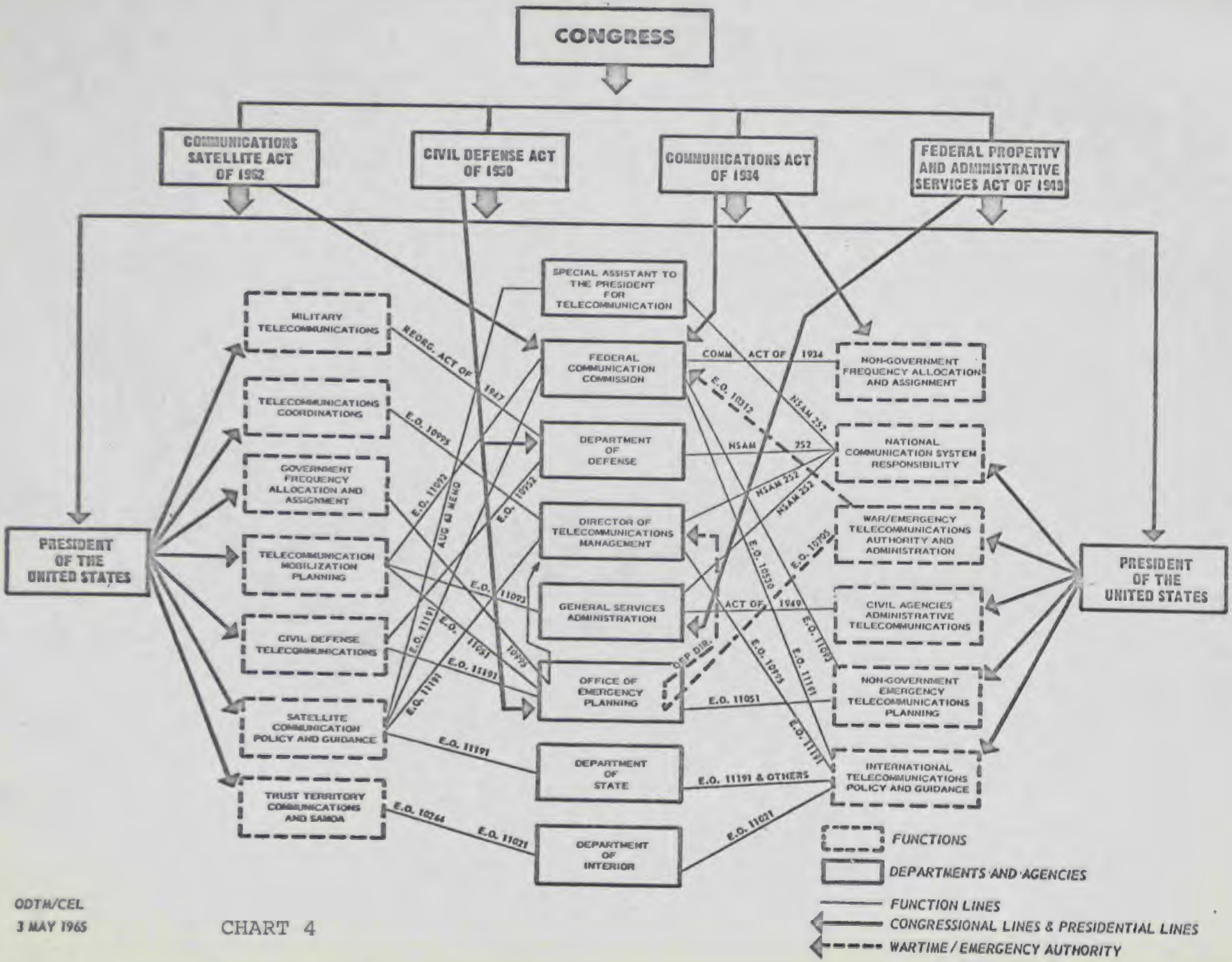


CHART 3

TELECOMMUNICATIONS RESPONSIBILITY INTERRELATIONSHIPS



ODTM/CEL
3 MAY 1965

CHART 4

THE TELECOMMUNICATIONS COMMITTEE STRUCTURE

DTM

FEDERAL COUNCIL ON TELECOMMUNICATIONS POLICY

TELECOMMUNICATIONS ADVISORY BOARD

COMMUNICATIONS SATELLITE POLICY ADVISORY COMMITTEE

FEDERAL-STATE TELECOMMUNICATIONS ADVISORY COMMITTEE

NATIONAL COMMUNICATIONS POLICY ADVISORY COMMITTEE

INTRA-GOVERNMENTAL COMMITTEE ON INTERNATIONAL TELECOMMUNICATIONS

TELECOMMUNICATIONS SCIENCE ADVISORY COMMITTEE

FREQUENCY MANAGEMENT ADVISORY COMMITTEE

PANEL 1

PANEL 2

PANEL 4

PANEL 5

FEDERAL-STATE-INDUSTRY INPUTS

CHART 5

CHARTER OF THE DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT/ SPECIAL ASSISTANT TO THE PRESIDENT FOR TELECOMMUNICATIONS/ ASSISTANT DIRECTOR, OFFICE OF EMERGENCY PLANNING

PREAMBLE*

WHEREAS telecommunications is vital to the security and welfare of this Nation and to the conduct of its foreign affairs;

WHEREAS it is imperative that the United States maintain an efficient and well-planned national and international telecommunications program capable of stimulating and incorporating rapid technological advances being made in the field of telecommunications;

WHEREAS the radio spectrum is a critical natural resource which requires effective, efficient and prudent administration in the national interest;

WHEREAS it is essential that responsibility be clearly assigned within the executive branch of the Government for promoting and encouraging effective and efficient administration and development of United States national and international telecommunications and for effecting the prudent use of the radio frequency spectrum by the executive branch of the Government;

WHEREAS there is an immediate and urgent need for an examination of ways and means of improving the administration and utilization of the radio spectrum as a whole;

*Executive Order 10995

WHEREAS there is an immediate and urgent need for integrated short and long-range planning with respect to national and international telecommunications programs, for continuing supervision over the use of the radio frequency spectrum by the executive branch of the Government and for the development of national policies in the field of telecommunications;

NOW, THEREFORE, as President of the United States and Commander-in-Chief of the armed forces of the United States, and by virtue of the authority vested in me by sections 305 and 606 of the Communications Act of 1934, as amended (47 U.S.C. 305 and 606), and by section 301 of Title 3 of the United States Code, it is hereby ordered as follows:

DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT POSITION ESTABLISHED*

SEC. 1. There is hereby established the position of Director of Telecommunications Management, which position shall be held by one of the Assistant Directors of the Office of Emergency Planning provided for under Reorganization Plan No. 1 of 1958, as amended (72 Stat. 1799).

NATIONAL COMMUNICATIONS OBJECTIVES*

SEC. 6. In carrying out functions under this order, the Director of Telecommunications Management shall consider the following objectives:

a. Full and efficient employment of telecommunications resources in carrying out national policies;

*Executive Order 10995

b. Development of telecommunications plans, policies, and programs under which full advantage of technological development will accrue to the Nation and the users of telecommunications; and which will satisfactorily serve the national security; sustain and contribute to the full development of world trade and commerce; strengthen the position and serve the best interests of the United States in negotiations with foreign nations; and permit maximum use of resources through better frequency management;

c. Utilization of the radio spectrum by the Federal Government in a manner which permits and encourages the most beneficial use thereof in the public interest;

d. Implementation of the national policy of development and effective use of space satellites for international telecommunications services.

TELECOMMUNICATIONS RESPONSIBILITIES*

SEC. 2. Subject to the authority and control of the President, the Director of Telecommunications Management shall:

a. Coordinate telecommunications activities of the executive branch of the Government and be responsible for the formulation, after consultation with appropriate agencies, of overall policies and standards therefor. He shall promote and encourage the adoption of uniform policies and standards by agencies authorized to operate telecommunications systems. Agencies shall consult with the Director of Telecommunications Management in the development of policies and standards for the conduct of their telecommunications activities within the overall policies of the executive branch.

*Executive Order 10995

b. Develop data with regard to United States Government frequency requirements.

c. Encourage such research and development activities as he shall deem necessary and desirable for the attainment of the objectives set forth.

d. Contract for studies and reports related to any aspect of his responsibilities.

FREQUENCY MANAGEMENT RESPONSIBILITIES*

"SEC. 3.

a. The authority to assign radio frequencies to Government agencies, vested in the President by subsection 305(a) of the Communications Act of 1934, as amended (47 U.S.C. 305(a)), including all functions heretofore vested in the Interdepartment Radio Advisory Committee, is hereby delegated to the Director of the Office of Emergency Planning, who may redelegate such authority to the Director of Telecommunications Management. Such authority shall include the power to amend, modify, or revoke frequency assignments.

b. The authority to authorize a foreign-government to construct and operate a radio station at the seat of government vested in the President by subsection 305(d) of the Communications Act of 1934, as amended (47 U.S.C. 305(d)), is hereby delegated to the Director of the Office of Emergency Planning who may redelegate such authority to the Director of Telecommunications Management. Authorization for the construction and operation of a radio station pursuant to this subsection and the assignment of a frequency for its use shall be made only upon recommendation of the Secretary of State and after consultation with the Attorney General and the Chairman of the Federal Communications Commission."

*Executive Order 10995, as redelegated.

MOBILIZATION RESPONSIBILITIES*

Coordinate the development of plans and programs for the mobilization and use of telecommunication resources in an emergency; provide telecommunications policy guidance to other agencies in preparedness planning; plan to administer the use of the national telecommunication resource in a war emergency; and, upon proclamation that the United States is engaged in a war, administer the use of the telecommunication resource.

ASSISTANT DIRECTOR, OEP, RESPONSIBILITIES*

Serve as advisor to the Director on policy matters. Represent the Director in dealings with policy level officials of Federal departments and agencies and with nongovernmental groups. Assume responsibility when assigned by the Director, OEP, for special programs which may involve various segments of OEP.

WARTIME RESPONSIBILITIES**

SEC. 606.

a. During the continuance of a war in which the United States is engaged, the President is authorized, if he finds it necessary for the national defense and security, to direct that such communications as in his judgment may be essential to the national defense and security shall have preference or priority with any carrier subject to this Act. He may give these directions at and for such times as he may determine, and may modify, change, suspend, or annul them and for any such purpose he is hereby authorized to issue orders directly, or through such person or persons as he designates for the purpose, or through the Commission. Any carrier

*See Wartime Responsibility, OEP Order 1100.1B and Executive Order 11051.

**Communications Act of 1934, as amended, and Executive Order 10705, as redelegated.

concurrent resolution may designate, (1) suspend or amend the rules and regulations applicable to any or all facilities or stations for wire communication within the jurisdiction of the United States as prescribed by the Commission, (2) cause the closing of any facility or station for wire communication and the removal therefrom of its apparatus and equipment, or (3) authorize the use or control of any such facility or station and its apparatus and equipment by any department of the Government under such regulations as he may prescribe, upon just compensation to the owners.

NATIONAL COMMUNICATIONS SYSTEM CONCEPT AND OBJECTIVES*

In order to strengthen the communications support of all major functions of government there is need to establish a unified governmental communications system which will be called the National Communications System (NCS). It shall be established and developed by linking together, improving, and extending on an evolutionary basis the communications facilities and components of the various Federal agencies.

The objective of the NCS will be to provide necessary communications for the Federal Government under all conditions ranging from a normal situation to national emergencies and international crises, including nuclear attack. The system will be developed and operated to be responsive to the variety of needs of the national command and user agencies and be capable of meeting priority requirements under emergency or war conditions through use of reserve capacity and additional private facilities. The NCS will also provide the necessary combinations of hardness, mobility, and circuit redundancy to obtain survivability of essential communications in all circumstances.

*President's Memorandum of August 21, 1963, subject "Establishment of the National Communications System."

Initial emphasis in developing the NCS will be on meeting the most critical needs for communications in national security programs, particularly to overseas areas. As rapidly as is consistent with meeting critical needs, other Government needs will be examined and satisfied, as warranted, in the context of the NCS. The extent and character of the system require careful consideration in light of the priorities of need, the benefits to be obtained, and the costs involved.

Although no complete definition of the NCS can be made in advance of design studies and evolution in practice, it is generally conceived that the NCS would be comprised primarily of the long haul, point-to-point, trunk communications which can serve one or more agencies.

RESPONSIBILITIES OF THE SPECIAL ASSISTANT TO THE PRESIDENT FOR TELECOMMUNICATIONS*

In carrying out his functions pursuant to Executive Orders 10705 and 10995 and under this memorandum, the Director of Telecommunications Management shall be responsible for policy direction of the development and operation of a National Communications System. In this capacity, he shall also serve as a Special Assistant to the President for Telecommunications and shall:

a. Advise with respect to communication requirements to be supplied through the NCS; the responsibilities of the agencies in implementing and utilizing the NCS; the guidance to be given to the Secretary of Defense as Executive Agent for the NCS with respect to the design and operation of the NCS; and the adequacy of system designs developed by the Executive Agent to provide, on a priority basis and under varying conditions of emergency, communications to the users of the NCS.

*President's Memorandum of August 21, 1963, subject "Establishment of the National Communications System."

b. Identify those requirements unique to the needs of the Presidency.

c. Formulate and issue to the Executive Agent guidance as to the relative priorities of requirements.

d. Exercise review and surveillance of actions to insure compliance with policy determinations and guidance.

e. Ensure that there is adequate planning to meet future needs of the NCS.

f. Assist the President with respect to his coordinating and other functions under the Communications Satellite Act of 1962 as may be specified by Executive Order or otherwise.

In performing these functions, the Special Assistant to the President for Telecommunications will work closely with the Special Assistant to the President for National Security Affairs; he will consult with the Director of the Office of Science and Technology and the Director of the Bureau of the Budget, as appropriate; will establish arrangements for inter-agency consultation to ensure that the NCS will meet the essential needs of all Government agencies; and will be responsible for carrying on the work of the Subcommittee on Communications of the Executive Committee of the National Security Council which is hereby abolished. In addition to staff regularly assigned, he is authorized to arrange for the assignment of communications and other specialists from any agency by detail or temporary assignment.

The Bureau of the Budget, in consultation with the Special Assistant to the President for Telecommunications, the Executive Agent and the Administrator of General Services, will prescribe general guidelines and procedures for reviewing the financing of the NCS within the budgetary

process and for preparation of budget estimates by the participating agencies.

COMMUNICATIONS SATELLITE POLICY AND PURPOSE*

SEC. 102.

a. The Congress hereby declares that it is the policy of the United States to establish, in conjunction and in cooperation with other countries, as expeditiously as practicable a commercial communications satellite system, as part of an improved global communications network, which will be responsive to public needs and national objectives, which will serve the communication needs of the United States and other countries, and which will contribute to world peace and understanding.

b. The new and expanded telecommunication services are to be made available as promptly as possible and are to be extended to provide global coverage at the earliest practicable date. In effectuating this program, care and attention will be directed toward providing such services to economically less developed countries and areas as well as those more highly developed, toward efficient and economical use of the electromagnetic frequency spectrum, and toward the reflection of the benefits of this new technology in both quality of services and charges for such services.

c. In order to facilitate this development and to provide for the widest possible participation by private enterprise, United States participation in the global system shall be in the form of a private corporation, subject to appropriate governmental regulation. It is the intent of Congress that all authorized users shall have nondiscriminatory access to the system; that maximum competition be maintained in the provision of equipment and services utilized by the system; that the

*Communications Satellite Act of 1962, and Executive Order 11191.

corporation created under this Act be so organized and operated as to maintain and strengthen competition in the provision of communications services to the public; and that the activities of the corporation created under this Act and of the persons or companies participating in the ownership of the corporation shall be consistent with the Federal antitrust laws.

d. It is not the intent of Congress by this Act to preclude the use of the communications satellite system for domestic communication services where consistent with the provisions of this Act nor to preclude the creation of additional communications satellite systems, if required to meet unique governmental needs or if otherwise required in the national interest.

COMMUNICATIONS SATELLITE RESPONSIBILITIES*

SEC. 2. DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT.

a. Subject to the provisions of this order, the Director shall generally advise and assist the President in connection with the functions conferred upon the President by the provisions of Section 201(a) of the Act.

b. The Director shall:

(1) Aid in the planning and development, and aid in fostering the execution, of a national program for the establishment and operation, as expeditiously as possible, of a commercial communications satellite system.

*Communications Satellite Act of 1962, and Executive Order 11191.

(2) Conduct a continuous review of all phases of the development and operation of such a system, including the activities of the Corporation.

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

(4) Make recommendations to the President and others as appropriate, with respect to all steps necessary to insure the availability and appropriate utilization of the communications satellite system for general Government purposes in consonance with Section 201(a)(6) of the Act.

(5) Help attain coordinated and efficient use of the electromagnetic spectrum and the technical compatibility of the communications satellite system with existing communications facilities both in the United States and abroad.

(6) Prepare, for consideration by the President, such Presidential action documents as may be appropriate under Section 201(a) of the Act, make necessary recommendations to the President in connection therewith, and keep the President currently informed with respect to the carrying out of the Act.

(7) Serve as the chief point of liaison between the President and the Corporation.

INTERNATIONAL TELECOMMUNICATIONS COORDINATION*

SEC. 8. The Director of Telecommunications Management and the Federal Communications Commission shall assist and give policy advice to the Department of State in the discharge of its functions in the field of international telecommunications policies, positions and negotiations.

THE ISSUANCE OF RULES AND REGULATIONS*

SEC. 9. The Director of Telecommunications Management shall issue such rules and regulations as may be necessary to carry out the duties and responsibilities vested in him by this order or delegated to him under this order.

OTHER COORDINATION*

SEC. 10. All executive departments and agencies of the Federal Government are authorized and directed to cooperate with the Director of Telecommunications Management and to furnish him such information, support and assistance, not inconsistent with the law, as he may require in the performance of his duties.

ESTABLISHMENT OF ADVISORY COMMITTEES AND WORKING GROUPS*

SEC. 5. The Director of Telecommunications Management shall establish such interagency advisory committees and working groups composed of representatives of interested agencies and consult with such departments

*Executive Order 10995.

and agencies as may be necessary for the most effective performance of his functions. To the extent that he deems it necessary or advisable to continue the Inter-department Radio Advisory Committee, it shall serve in an advisory capacity to the Director of Telecommunications Management.

OFFICE OF
TELECOMMUNICATIONS
MANAGEMENT

A REPORT
on
FREQUENCY MANAGEMENT
WITHIN THE EXECUTIVE BRANCH
OF THE GOVERNMENT

October 1966

REPORT BY
THE DIRECTOR OF TELECOMMUNICATIONS MANAGEMENT

on

FREQUENCY MANAGEMENT

within

THE EXECUTIVE BRANCH OF THE GOVERNMENT

under

EXECUTIVE ORDER NO. 10995 OF FEBRUARY 16, 1962, As Amended

May 1964 - October 1966

P R E F A C E

This Report contains an appeal for immediate implementation of a major planning program for the future allocation and use of the radio spectrum.

At times, the language is dramatic, fitting the urgency of the situation, but the Report is factual. The trend to choking stagnation is clearly present in the radio spectrum.

It is our sixth natural resource and perhaps the most important unseen public servant for our Nation. "Analogy" and "imagery" are needed to make this servant materialize to the extent that those reading this report will fully comprehend the urgency of the appeal.

This report concludes by recommending that:

> a long-range planning program for the allocation and use of the radio spectrum be instituted forthwith to provide a practicable and continually available guide for the orderly development and use of the radio spectrum in such a manner as to ensure the satisfactory accommodation of present and foreseeable frequency requirements found to be in the national interest.

These recommendations are consistent with the objectives of both the Director of Telecommunications Management and the Federal Communications Commission.

They are also consistent with the urgings of experts that have been frequently called in to comment on the general problem. The experts grew up with the "public servant" and recognize him well -- they have lived with his joys, his frustrations and his chains.

TABLE OF CONTENTS

Table of Contents (continued)

A P P E N D I C E S

THE NATURE OF OUR UNSEEN PUBLIC SERVANT -- THE RADIO SPECTRUM

The spectrum is omnipresent in our lives:

The resource of the radio spectrum -- a natural phenomenon -- plays an omnipresent role in our lives in the 20th century:

-- in defense of our Nation

-- in upholding our laws

-- in protecting lives and property

-- in conserving our other natural resources

-- in providing education, information, entertainment and recreation in the home

-- in making possible mass air travel

-- in delivering perishable or critical materials on time

-- in obtaining greater productivity from human effort and from investments in automobiles, trucks, motorcycles, drill rigs, patrol cars, delivery vans, etc.

-- in obtaining greater productivity from men on the move whether they be in the field of law enforcement or business

-- in "shrinking" the Nation and the world -- providing low cost easy access to person to person communications

-- in providing the indispensable nerve system for the exploration and use of the regions beyond the earth

-- in supporting research on land, sea and in space

What if?

Some say it is mere fantasy to picture our world without the radio spectrum but such an image is needed to comprehend fully the role that this public servant plays in our daily lives. In tune with our times, let us suppose that this public servant went on strike!

-- there would be no all-weather air travel and only limited sea travel (no aircraft or marine radio, radar, navigational aids, etc.)

-- there would be inadequate and irregular land travel (no mobile radio for dispatching buses, controlling the movement of urgently needed highway maintenance vehicles, holding tight schedules on railroads, etc.)

-- there would be greater danger on our streets at night (no radio to control movement of patrolmen, dispatch aid or to warn of intruders)

-- our Nation would be vulnerable to surprise attack (no radar surveillance, no patrol planes, etc.)

-- there would be a general slowdown of business (no dispatching of delivery vehicles, more "dead-heading" for trucks, taxis, etc., no means to move maintenance people from one job to the next without hunting a telephone or coming all the way "home" first)

-- there would be longer power outage emergencies (no dispatching of repair trucks, no radio for coordination of energizing and de-energizing lines, no quick response to additional emergency help

-- there would be no low cost home entertainment as now provided by radio and TV.

As seen from these few examples, there is virtually no end to the inconveniences, dangers and even calamities that would befall us should our unseen public servant go "on strike."

Admittedly, as stated before, this is fantasy; but it should give us a hint of the magnitude of services that we may not enjoy in the future if we do not find the means and plans for our unseen public servant to continue to grow in his capability to carry a significantly larger burden.

The spectrum is being challenged to do more:

The radio spectrum is a devoted public servant ready to take on more load within his physical capabilities -- and herein lies the problem.

Proposals have been made that would make still further use of the radio spectrum to obtain:

-- more effective protection from more ingenious enemies

As military weaponry becomes more sophisticated and more devastating, and as the incidence of international crises increases from year to year, the need grows exponentially for more powerful warning and detection tools in larger numbers, and for more sophisticated and reliable communication systems which use more and more spectrum.

-- more effective law enforcement

As our population expands apace, crime increases, apparently, even faster than the population growth. To cope with this problem and reverse the trend, major increases in police capabilities must be provided with minimum increases in cost. Again, a most important tool is the expanded use of new ideas in communications in integrating all elements of police power and effecting a revolution in reaction time on the part of every individual police officer. These needed revolutions can only be achieved by new concepts, new ideas, and increased use of the radio spectrum.

-- broader coverage of educational tools and cultural experience

New techniques in the use of the radio spectrum can not only "deliver" educational tools to schools and the home but also could provide the means to offer a wide variety of choice thereby preserving the keystone of locally-controlled public education.

-- increased productivity of men and machines

More spectrum made available to industry could have significant effect towards advancing overall productivity and thereby improving our competitive position in world markets.

-- communications for all at all times

Person to person; on land, sea or in the air.

-- greater safety in travel on land

The United States is a nation on the move. Each year our people spend more time and travel farther on the highways. This mobility adds to the strength of the Nation, but it brings exposure to a growing accident toll. The radio spectrum can provide a basis for radically new innovations and capabilities to support the highway safety program and provide greater convenience for our travelling population.

-- greater safety in travel in the air

As more of our citizens fly the airways each year at higher and higher speeds, the communication requirements multiply by factors greater than the increase in speed. Air safety becomes a more and more difficult problem, and a primary requirement is more use of the radio spectrum.

-- deeper probing of the mysteries and probable resources of space

> No one can predict the outcome here but so long as there is an unknown, we must probe for knowledge and understanding.

Thus do the expanding needs of modern life swell the demand for more and more, and again more, use of radio for an ever increasing number of applications. There is no end in sight for this demand, but there are ends in sight for the capacity of the radio spectrum.

The demands on this public servant for more service in present tasks or added service for new tasks are beyond his present capacity and capabilities -- at least insofar as the load has been structured and planned. Not only do priorities have to be set as to which of his services might be most valuable but, in the longer range, new methods for increasing his capacity for service must be nurtured and implemented.

The spectrum has constraints:

There are some special constraints that make the task of meeting these demands uniquely challenging. The radio spectrum is:

-- not limitless

> From a scientist's point of view, the electromagnetic spectrum extends over a wide range of frequencies -- from a few tenths of a cycle per second up through the mysterious cosmic rays far beyond the range of light. But from the engineer's point of view, the usable spectrum, generally called radio spectrum, extends from about 10 thousand cycles per second to 40 billion cycles per second as shown in Appendix 1. The upper two-thirds of this range, however, is severely hampered in its practical use by absorption of radio energy by water vapor in our atmosphere.
>
> Some people dream that lasers may open up higher frequencies into the visible spectrum range. There

are, however, serious atmospheric limitations, and for practical purposes lasers for communications will serve only in very short range situations, or in specially built pipes or out in space.

We must also remember that, just as two motor vehicles cannot occupy the same space at the same time without disastrous interference, two radio signals of the same frequency and amplitude cannot occupy the same geographical space at the same time. Each radio operation requires a finite part of the spectrum -- a channel or traffic lane -- in time and space.

To our advantage, unlike most other natural resources, the radio spectrum is not exhausted through use; but careless or inefficient use could prevent us from obtaining the maximum benefits from it.

The radio spectrum is not flexible:

Certain tasks can be performed only by certain frequencies. In the low end of the range, worldwide but very narrow bandwidth communications can be obtained. Farther up, the bandwidth may be increased to a voice channel and signals may be bounced 'round the globe between the earth's surface and the ionosphere. At still higher frequencies, bandwidths may be increased to carry a television signal but generally only to the horizon seen by the antenna, or just slightly beyond. In the microwave bands, the bandwidths may be even larger but propagation is strictly along line of sight. Then, at about 10 - 15 billion cycles, new problems arise in energy absorption by water vapor.

These and still other constraints of natural phenomena tend to limit the space within which we can assign radar, airborne communications, land mobile communications, broad band trunk circuits, educational, informational and entertainment TV, etc. In addition, once investments have been made to use certain frequencies any changes in overall allocation must be scheduled so as to permit the users to obtain a reasonable amortization of their investments and equal or better opportunities for future earnings.

Plans for the assignment of frequency bands or new operating technical standards must be maintained with a 10-year lead time. This calls for considerable knowledge and expertise in determining trends in technology, trends in needs and the marriage of both that will make the most sense for all concerned in the time period of 10 to 20 years from the present. This task calls for constant study, updating and evaluation by truly knowledgeable people.

The radio spectrum is free:

Since this is a natural and, therefore, public resource, it has been our custom to offer it at no charge to those with legitimate need, willing to operate within regulatory constraints. This policy has undoubtedly contributed much towards our rapid utilization of the spectrum in the interest of all segments of our society, but it also serves to stifle individual motivation towards achieving more benefits in less spectrum space. Regulatory pressures alone are not enough and will never match the rewards that could come from self-motivated research stimulated by direct economic benefit.

Our national philosophy is to keep the spectrum free but to do it is going to require a price -- the price of intelligent planning for growth and expansion to serve the growing needs of new ways of life that are fast developing.

The radio spectrum is available to the world:

Since all nations have access to the spectrum, it must be shared with the world. For optimum benefit there must be international agreement on its use and future development. We might wish to take leadership in methods of application for the public welfare, but we must first obtain agreement from the nations of the world. And we should be able to demonstrate an understanding of the national and international importance of the problem by giving adequate attention to planning the necessary measure of orderly growth for the future.

Chapter II

THE SERVICES NOW BEING RENDERED BY OUR UNSEEN PUBLIC SERVANT

Frequency allocation and assignment in the United States is handled under two basic categories: Federal Government use administered by the Director of Telecommunications Management (DTM) and non-Government use administered by the Federal Communications Commission (FCC). Despite this fact of two separate administrations for the uses of the radio spectrum, that spectrum must be looked at as a whole. Hence, this report will cover problems within the province of the FCC as well as those of the DTM. The views expressed herein have not been endorsed formally by the FCC although its staff and members have been freely consulted and have been most helpful. In considering needed future long-range planning and other over-all actions to improve frequency utilization, this paper has always in mind joint action by the FCC and the DTM to promote studies in the over-all national interest.

Federal Government Use

The Federal Government agencies operate radiocommunication solely to carry out missions assigned by the Congress or the President. These missions include, but are not limited to: the provision for, and support of, national security and defense; safeguard of life and property (radionavigation aids, air traffic and ship movement control, crime prevention and law enforcement); conservation of natural resources; meteorological aids; scientific research and exploration; increased productivity of its manpower and reduced requirements for capital investment, operational and maintenance costs.

The Federal Government, in carrying out the assigned missions, is a large user of the radio spectrum, having at the end of 1965 considerably more than 1.3 million electronic equipments in use. As might be expected, the armed forces are the largest users of the spectrum. The Federal Aviation Agency is also a large user in providing

aeronautical radionavigation and air traffic control services to the public. Agencies providing maritime radionavigation services, or engaged in crime prevention and law enforcement, conservation of natural resources, space research and exploration, international broadcasting, essential mobile communications, emergency communications, and general research and experimentation, account for the remainder of the Federal Government use.

Non-Federal Government Use

Non-Federal Government users of the spectrum include State and local governments, corporations and individuals operating within one or more of the radio services established and regulated by the FCC. Many of these State and local government operations are conducted to carry out governmental functions such as safeguarding life and property, preventing crime and enforcing laws, conserving natural resources, and enhancing education. Commercial or private uses involve such purposes as: providing common carrier communications for hire; commercial broadcasting; industrial and business use to increase productivity and efficiency; or, amateur and citizens radio services for public benefit or personal pleasure, experimentation and training, all of which contribute to our national economy, our over-all communications capabilities and our readiness to meet national emergencies and natural disasters.

The Commission, in its Annual Report for FY 1965, gives the number of transmitters licensed in all safety and special radio services in the spectrum (10 kc/s to 40,000 Mc/s) as about 5.3 million. Of these, about 2.3 million transmitters are in the land mobile radio service, about 2.4 million are in the citizens radio service, and about 600,000 in the other radio services.

Division of the Spectrum Between Government and Non-Government

Although there are more licensed non-Government than Government equipments, about 90% of the non-Government authorizations are in the land mobile and citizen's radio services and, consequently, are

for low power operations. While the Government agencies operate numerous low power devices, they also operate very high power and wideband electronic devices in many parts of the spectrum in connection with the national defense and with safety of life in the air and at sea. In such applications the Government requires the highest attainable reliability. The consequences of disruption of communication are extremely serious since such interruptions could lead to loss of life or widespread destruction.

Below 25 Mc/s, with minor exceptions, the spectrum is allocated nationally to both Government and non-Government uses on a shared basis.

Above 25 Mc/s, the spectrum is allocated nationally to (a) Government, (b) non-Government, and (c) Government and non-Government (shared), with the division varying from frequency band to frequency band. Appendix 2 shows the allocations above 30 Mc/s to the several broad radio services, without reference to Government or non-Government; and Appendix 3 shows the division of the spectrum between Government and non-Government by arbitrary frequency bands. Selected data for a key part of the spectrum are:

	Band - Mc/s			
	30-960		960-10,000	
	Mc/s	%	Mc/s	%
Government	266.110	28.6	3,951.000	43.7
Non-Government	587.715	63.2	2,290.0	25.4
Broadcasting	(514.270)	(55.3)	(370.0)	(4.1)
Land Mobile	(40.520)	(4.4)	(0.0)	(0.0)
Others	(32.925)	(3.5)	(1,920.0)	(21.3)
Shared	76.175	8.2	2,799.0	30.9
Total	930.0	100.0	9,040.0	100.0

Chapter III

THE ECONOMIC IMPACT OF THE RADIO SPECTRUM

So far we have talked in qualitative terms of the classes and impact of services rendered through use of the radio spectrum.

An additional dimension on this impact can be obtained through economic analysis -- by measuring the Nation's investment in radio equipment and annual sales or revenues for equipment, operations and services directly dependent on the availability of the spectrum.

Neither of these analyses, however, assign value to secondary benefit such as protection of life, property, or making air travel possible, or simply increasing productivity of people.

Investment in the Spectrum

The United States is a large user of the spectrum in support of all aspects of its national life, both Government and non-Government. The total factory sales of electronic products between 1956 and 1965 amounted to $118 billion, which corresponds to a depreciated investment of $75 billion. (More complete data and trend charts relative to economic impact from use of the radio spectrum are given in Appendix 4.) It was estimated in an analysis prepared for the Interdepartmental Committee for Atmospheric Sciences, October 1964 (statistics developed by the BDSA, Department of Commerce) that the U. S. 1963 investment in facilities involving the use of the radio spectrum amounted to a depreciated investment of $26 billion out of a total depreciated investment of $62.3 billion. Applying this same relationship of sales, the depreciated investment involving the use of the radio spectrum would be about $32.5 billion at the end of 1965.

Annual revenue dependent on the spectrum

The annual sales, revenues, or expenditures for electromagnetic telecommunication equipment, operations and services were $17 billion (with factory sales at $14.1 billion) in 1962. The estimated annual contribution in 1965 was over $20 billion, or 3% of a GNP of about $700 billion.

The Future

The national interest requires that we nurture and cultivate this valuable asset -- by increasing not only "the acreage," the "variety of crops," but also the "yield per acre." We have an opportunity to enhance our "productivity" not only in tangible industrial output, but also in the intangible rewards of security, protection of life, property and resources and the pursuit of happiness.

Logic, therefore, tells us that we should:

-- protect and foster the use of the spectrum

-- decide which uses are most in the national interest

-- plan ahead for orderly changes in its use to increase benefits and at the same time to minimize the impact on existing investments

-- implement desirable changes on a scheduled basis, and constantly monitor the administration of use for prudence and for being in the national interest.