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UNITED STATES GOVERNMENT

Memorandum

TO : Mr. J. D. O'Connell

DATE: August 22, 1968

FROM : Ellis F. Anderson

SUBJECT: Costing of the "New Capability" Proposed by the Central Staff

From August 19 to August 22, members of your staff (Evans, Lathey, Fishkin, J. Ray O'Connell, Dean, Siling, Cole and Anderson) studied the "new capability" proposed by the Central Staff in order to estimate the cost in manpower and money. Our conclusions are contained in the enclosures and are summarized below.

In making the analysis, no attempt was made to evaluate the judiciousness of the recommendations. Considerable difficulty was encountered in determining precisely what was intended, but we leaned toward reasonableness in our interpretations. Certain obvious misstatements of fact were ignored or the correct facts were assumed. Missions that were omitted were assumed to be included within the broad statements contained in the paper. The conclusions presented to you are considered to be conservative. They are necessarily "best guesses," and the reasoning that led to the estimates is to be found in the enclosures.

In the summary, it is concluded that the cost would be:

	Existing	New	Total
Manpower	1637	2162	3799
Dollars (annual in millions)	109.3	68.3	*177.6

*Includes $100 million of grant-in-aid to state and local governments.

Ellis F. Anderson
Colonel, USA

Encl. (11)

Incl 1

Distribution

Mr. J. D. O'Connell
Mr. W. E. Plummer
Mr. R. L. Clark
Mr. J. J. O'Malley
Mr. C. E. Lathey
Mr. L. J. Fishkin
Mr. V. F. Evans
Mr. J. Ray O'Connell
Mr. W. Dean
Mr. P. Siling
Mr. J. E. Cole
Capt. L. R. Raish

ENCLOSURES

1. Scope (or Functions) of the proposed "capability".
2. OTM developed "type organization" chart.
3. Placement of functions within the "type organization".
4. Cost of "new capability" chart.

5 thru 11 are back-up statements on costs shown in enclosure 4.

5. National Telecommunication (less State-Local)
6. State-Local
7. Spectrum Management
8. International Telecommunications
9. Telecommunication Technology
10. Administration
11. Management (Director's Office)

August 14, 1968

SCOPE OF THE PROPOSED GOVERNMENT CAPABILITY TO BE SET UP IN TELECOMMUNICATIONS

A. A focus for the centralized responsibility for spectrum allocation.

B. A center for Government research and development in communications.

C. A provision of operating and evaluative frameworks for a variety of communication-related pilot programs.

D. A focus for the provision of technical and policy advice and assistance on procurement matters -- to other agencies, state and local governments.

E. A center for the provision of technical assistance and the development of new concepts and procedures in connection with regulatory policy.

F. A focus for long-range planning, policy formulating, coordinating and mission-support.

G. A focus for the establishment of Federally funded Communications Policy Training Programs -- for the establishment of a source for properly trained personnel that new technology in telecommunications requires.

H. A focus for analyzing systematic alternatives to present pricing or investment patterns.

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I. A focus for assigning priorities to a range of national and international policy goals in the context of an intimate familiarity with the present state and probable future configuration of technological and economic trends.

J. A focus for integrating the various roles that Government plays in interacting with the communications industry.

K. A focus for the establishment and enforcement of such technical standards and licensing requirements as may be necessary to prevent spectrum "pollution."

L. Management of the Government radio laboratories and R&D centers.

M. An overview of Comsat's activities to see that they conform to the requirement of the Satellite Act.

N. A capability for Government rigorously to evaluate proposals for communications systems made by the private sector (see J).

O. Where an agency lacks the requisite in-house staff -- procurement for the agency is to be done.

P. An information gathering program covering:

1. Continuous surveillance of relevant work being undertaken by Government agencies such as DOD and NASA.
2. Briefings by domestic and foreign manufacturers, in communications and related technologies.
3. Briefings by foreign and domestic communications common carriers.

4. Briefings by staff from universities and research organizations involved in communications research.

Q. The power to underwrite any additional expenses incurred by the procuring agency as a result of inclusion of a new component or service if the potential benefits involved warrant federal support.

R. Initiation of R&D studies -- in house or through contracts let to the private sector on:

1. The feasibility of utilizing market mechnanisms for spectrum allocation.
2. Alternative modes of communication not involving the use of the spectrum.
3. Interference due to satellite-terrestrial sharing below 10 GHz.
4. Appropriate design and trade-off criteria for satellite and terrestrial sharing as a function of both economics and service quality.
5. Technology, propagation and applications relating to the above 10 GHz spectrum range, for both satellite and terrestrial systems.

S. Monitoring continuously:

1. Private communication R&D.
2. R&D efforts of such mission-oriented agencies as DOD, NASA, FAA.
3. Communications Policy Training Programs.

T. A significant role in initiation and organization of a wide range of socially innovative programs, potentially involving the efforts of a broad cross-section of Government agencies.

U. Technical advice, assistance and support to state and local governments on communication matters.

V. Provide assistance in communication matters to developing countries.

W. Resolving the conflict between Government's Role as a use of communications and as representative of the Public interest.

X. Providing technical assistance to the Consumer Counsel in the Department of Justice.

THE ABOVE ARE COPIED VERBATIM FROM TASK FORCE PAPERS.

This list of functions was extracted by MR. KAUFFMAN.

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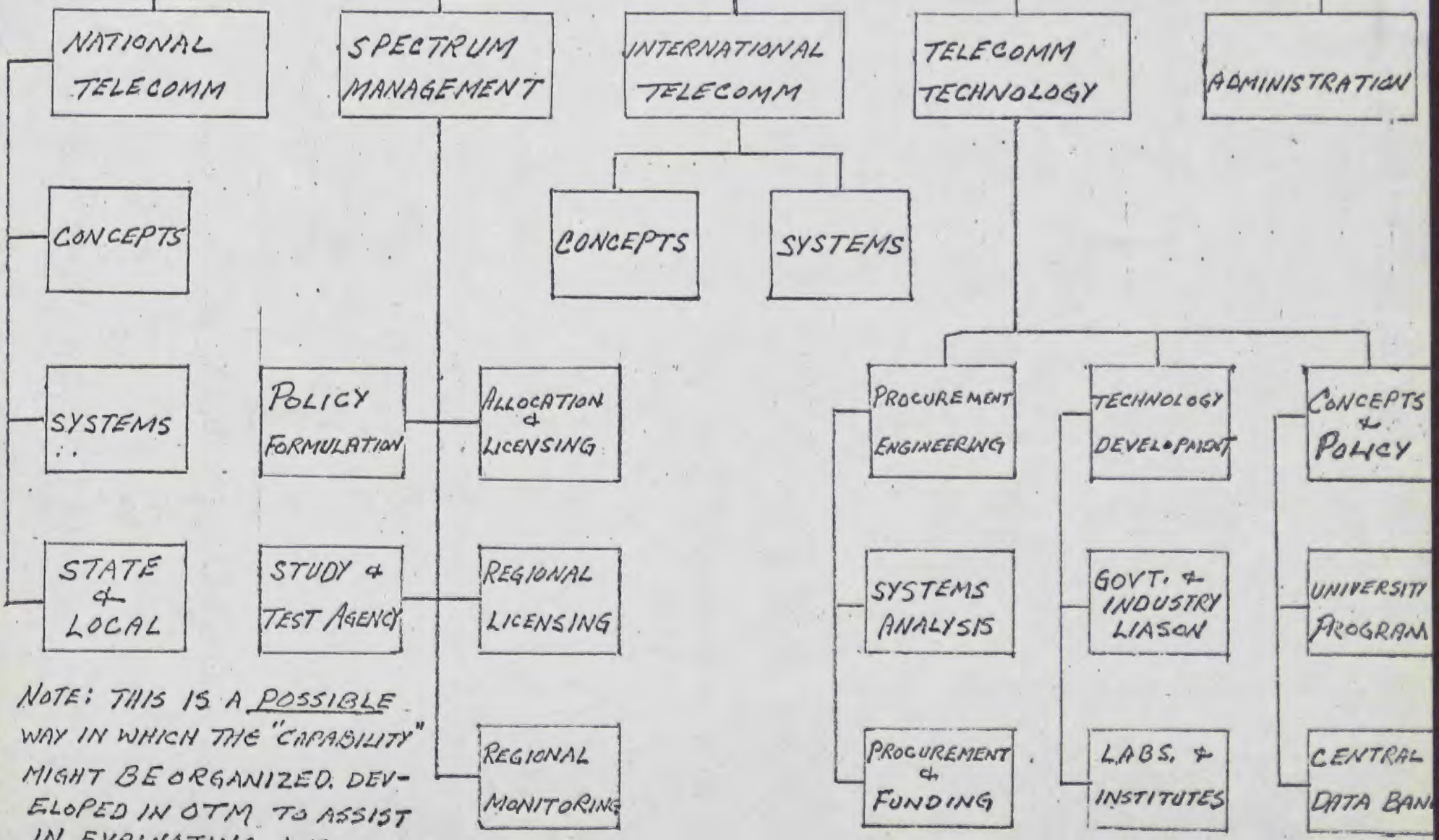
CENTRAL STAFF PROPOSED TELECOMMUNICATION CAPABILITY



NOTE: THIS IS A POSSIBLE WAY IN WHICH THE "CAPABILITY" MIGHT BE ORGANIZED. DEVELOPED IN OTM TO ASSIST IN EVALUATING AND COSTING THE PROPOSAL. E.F.A.

The functions previously identified and organizational structure envisioned were combined and functions placed as follows: (The letters cross reference to Inclosure 1)

NATIONAL TELECOMMUNICATIONS

E. A center for the provision of technical assistance and the development of new concepts and procedures in connection with regulatory policy.

F. A focus for long-range planning, policy formulating, coordinating and mission-support.

J. A focus for integrating the various roles that Government plays in interacting with the communications industry.

U. Technical advice, assistance and support to state and local governments on communication matters.

W. Resolving the conflict between Government's Role as a use of communications and as representative of the Public interest.

X. Providing technical assistance to the Consumer Counsel in the Department of Justice.

INTERNATIONAL TELECOMMUNICATIONS

I. A focus for assigning priorities to a range of national and international policy goals in the context of an intimate familiarity with the present state and probably future

configuration of technological and economic trends.

M. A overview of COMSAT's activities to see that they conform to the requirement of the Satellite Act.

V. Provide assistance in communication matters to developing countries.

SPECTRUM MANAGEMENT

A. A focus for the centralized responsibility for spectrum allocation.

K. A focus for the establishment and enforcement of such technical standards and licensing requirements as may be necessary to prevent spectrum "pollution."

R. INITIATION OF R&D STUDIES ON:

R1. The feasibility of utilizing market mechanisms for spectrum allocation.

R3. Interference due to satellite-terrestrial sharing below 10 GHz.

R5. Technology, propagation and applications relating to the above 10 GHz spectrum range, for both satellite and terrestrial systems.

TELECOMMUNICATION TECHNOLOGY

B. A center for Government research and development in communications.

C. A provision of operating and evaluative frameworks for a variety of communication-related pilot programs.

D. A focus for the provision of technical and policy advice and assistance on procurement matters -- to other agencies, state and local governments.

G. A focus for the establishment of Federally funded Communications Policy Training Programs -- for the establishment of a source for properly trained personnel that new technology in telecommunications requires.

H. A focus for analyzing systematic alternatives to present pricing or investment patterns.

L. Management of the Government radio laboratories and R&D centers.

N. A capability for Government rigorously to evaluate proposals for communications systems made by the private sector.

O. Where an agency lacks the requisite in-house staff -- procurement for the agency is to be done.

P. An information gathering program covering:

P1. Continuous surveillance of relevant work being undertaken by Government agencies such as DOD and NASA.

P2. Briefings by domestic and foreign manufacturers, in communications and related technologies.

P3. Briefings by foreign and domestic communications common carriers.

P4. Briefings by staff from universities and research orgarizations involved in communications research.

Q. The power to underwrite any additional expenses incurred by the procuring agency as a result of inclusion of a new component or service if the potential benefits involved warrant federal support.

R. Initiation of R&D studies on:

R2. Alternative modes of communication not involving the use of the spectrum.

R4. Appropriate design and trade-off criteria for satellite and terrestrial sharing as a function of both economics and service quality.

S. Monitoring continuously:

S1. Private communication R&D.

S2. R&D efforts of such mission-oriented agencies as DOD, NASA, FAA.

S3. Communications Policy Training Programs.

T. A significant role in initiation and organization of a wide range of socially innovative programs, potentially involving the efforts of a broad cross-section of Government agencies.

Not identified in the central staff paper, but required are the administrative functions.

Included would be personnel management, funding, contract logistics and other categories of administrative support.

Not identified in the central staff paper, but required are the management functions in the Director's office.

NOTE: Placement of functions has been made in accordance with our interpretation of the intent of the committee, sometimes leading to seemingly strange placement. For example, the procurement activity is in Telecommunications Technology because the central staff emphasized that the "new capability" involvement in procurement would be based on its technological capability. Where the function statements obviously overlap two of the organizational blocks, we have not attempted to purify the wording of the function statement. It should be understood that this purification is implied in the organizational structure. For example, Function I placed in International Telecommunications, the functional statement speaks of national and international telecommunications responsibilities. Obviously, the national portion will be performed by those in National Telecommunications block.

Encl 11

COST

Activity	MANPOWER Exists	MANPOWER New	MANPOWER Total	DOLLARS(millions) Exists	DOLLARS(millions) New	DOLLARS(millions) Total	Remarks
National Communications	18	194	212	85.0	19.0	104.0	Note 1
Concepts and Systems	(14)	(138)	(152)		(4.0)	(4.0)	Encl. 5
State and Local	(4)	(56)	(60)	(85.0)	(15.0)	(100.0) Note 2	Encl. 6
Spectrum Management	657	470	1127	1.3	11.1	12.4	Encl. 7
Monitoring	(412)	(72)	(484)	(.3)	(.1)	(.4)	
Regional Offices		(300)	(300)				
Allocation & Licensing	(240)	(27)	(267)				
Study & Test Agency		(40)	(40)	(1.0)	(11.0)	(12.0)	
Policy & Management	(5)	(31)	(36)				
International Telecommunications		(35	35		2.0	2.0	Encl. 8
Systems		(5)	(5)				
Concepts		(30)	(30)		(2.0)	(2.0)	
Telecommunications Technology	945	1230	2175	14.7	19.6	34.3	Encl. 9
Procurement Engineering		(5)	(5)				
Systems Analysis		(30)	(30)		(2.0)	(2.0)	
Procurement & Funding		(10)	(10)			Note 3	
Technological Development		(25)	(25)		(2.0)	(2.0)	
Govt. & Industry Liaison		(20)	(20)				
Labs & Institutions	(937)	(863)	(1800)	(14.7)	(12.3)	(27.0)	Note 4
Concepts & Policies	(8)	(25)	(33)		(2.0)	(2.0)	
University Program		(2)	(2)		(.3)	(.3)	Note 5
Data Bank		(250)	(250)		(1.0)	(1.0)	
Administration	3	222	225	8.3	16.6	24.9	Encl. 10
Management (Director's Office)	14	11	25				Encl. 11
Total	1637	2162	3799	109.3	68.3	177.6	

Notes:

1. Small dollar values have been ignored.

2. $15 million is new grant-in-aid money, additional $85 million + now in other agencies will be administered.

3. No estimate made of funds to underwrite new services. (See Function Statement Q, Encl)

4. $20 million of this amount is pay of personnel, shown here to retain relationship with existing budget of labs. not shown in pay of personnel.

5. Estimated 50 students in residence at annual cost of $5,000.00 per student.

JTMullen:avr:22Aug68

Subject: Costing of Proposed "New Capability for the National Communications Directorate."

Interpretation and evaluation of that part of the paper prepared by the Task Force dealing with "the New Capability that is required" poses a very difficult task. The decided lack of depth and the generalizations which are stated make it virtually impossible to suggest other than an organizational structure concerning the broad areas suggested. A more complete and adequate paper on the subject would probably reveal weaknesses in the proposed organization.

With this preface, the organization of the National Communications Directorate (NCD) to cope with the issues to some degree is proposed as follows:

The currently proposed NCD structure for FY 70 is

10 Staff

4 Secretarial

The multiplicity of funttions inferred or implied in the paper would require an increase in the number to

30 Staff

12 Secretarial/Clerk

This augmentation would permit an across the board improvement in existing resources to be applied to those areas of general interest to the NCD.

To provide the more expanded structure to support the functions

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explicit in the Projected New Capability would require an additional

76 Staff

34 Secretarial/Clerical.

This 76 Staff and 34 Secretarial/Clerical would provide additional organizational augmentation as follows:

	Staff	Sec/Cler
Industry Liaison Group	4	2
Analysis Division -		
National Concepts/Procedure Group	4	2
Systems Analysis Group	4	2
Network Analysis Group	4	2
System Network Modeling Group	4	2
Operations Analysis Group	4	2
National Policy Planning and Evaluation Group	4	2
System Engineering Group (Evaluation/Application Current Technology)	4	2
Customer Continuity and Reaction Group	4	2
Standards Group - (Technical, operational, development)	8	3
Procurement Policy	4	2
Cost Evaluation/Policy Investment, cost analysis, cost effectiveness	8	3
	56	26

	Staff (56)	Sec/Cler (26)
ADP Applications Group Computers/Communications	4	2
Field Inspections & Evaluation Group	8	3
Technical Assistance & Advisory Group	8	3
	76	34
Organizationl Recap -		
Existing Structure Expanded	30	12
Additional Augmentation	76	34
Grand Total	106	46

The foregoing organizational structure is based in the assumptions that:

a. Certain Government research and study facilities presently contemplated within the task force paper to support this organization will be available, and

b. that contract study funds in the amount of 4 million dollars will be made available for the initial efforts.

The following list is an estimate of the contract study requirements for initial study efforts:

a. Contact Task: Provide information on all existing telecommunications policy and legislation and related policy and legislation which bear on telecommunications; identify the impact of such policy and legislation on today's telecommunications; identify

the organizations which carry out research and development, manufacture, operation and management; identify how these organizations cope with existing policy and new policy; identify the organizations that are affected more than others and why; recommend a method of forecasting and evaluating new policy impact and organization reaction. $450,000

b. Contract Task: Analysis of the day-to-day and crises functions of the Presidency to determine telecommunications support requirements. This will involve analysis of crises situations in the past inclusive of those arising from natural disasters. Having identified requirements, determine telecommunications conditions and means for requirements satisfaction. $ 75,000

c. Contract Task: Determine the impact of existing standards and proposed standards on Government telecommunications and industry. Evaluate planned standards and the impact of their implementation on Government telecommunications systems integration and interconnection. Study all Government and non-government standards organizations methods and procedures with the goal of recommending centralization of government telecommunications standards preparation, publishing and distribution. Recommend changes to non-government telecommunications standards activities toward the goal of reducing the number of industry points of contact with the Government and an efficient means for

industry-Government exchange of information concerning standards. Recommend a phased program of action toward established goals. $1,000,000

d. Contract Task: Pursue research studies toward the goal of the conceptual design of a Government universal telecommunications trunking and terminal ~~xty~~ system. Identify the technological and management changes necessary and the complete cost-effective program for the establishment of the system. $2,475,000

August 21. 1968

SUBJECT: Federal-State requirements and proposed Task Force capability

I have studied the Task Force paper on "Roles of the Federal Government in Telecommunications" and have reviewed the paper prepared by Mr. Kaufman. The following are what I believe to be the Federal-State and Federal-local Government tasks implied and stated in the Task Force paper:

1. Evaluation of experimental State and local Highway, law enforcement, welfare, medical, air and water pollution, conservation, and other State and local telecommunication systems (pilot programs).

2. Monitoring of telecommunications activities in State and local Governments.

3. Provision of policy guidance or mutual coordinated efforts with State and local Governments in development of policies for their promulgation and use.

4. Monitoring of Interstate regulatory activities to determine their impact upon State and local Governments, provision of this information to cognizant State and local officials, and advising them of actions to take in safeguarding their interests.

5. Provision of Federal assistance funds to State and local Governments so as to permit them to more efficiently and effectively capitalize upon the Nation's telecommunications.

6. Assisting State and local Governments in their development of short and long-range telecommunication plans.

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7. Analyzing State and local plans involving systematic alternatives so that they can make decisions in lease vs buy matters.

8. Coordination of telecommunications activities between Federal-State, between Federal-local, and between State-State Governments.

9. Determining and advising on the various roles that State and local Governments play in interacting with the communications industry.

10. Serving as liaison between State and local Governments and the FCC on frequency matters in order to assure that State and local Governments obtain adequate and efficient frequencies for support of Executive functions.

11. Providing advice and assistance to State and local Governments on Federal research and development activities which may be of benefit to them.

12. Coordination of telecommunication activities undertaken by mission-oriented Federal departments and agencies when such activities involve State and local Governments.

A reasonable approach -- which is conservative in personnel and funds -- which would fill the gaps only in present Federal-State-local Government Telecommunications -- would be the establishment of an identifiable entity within the new Task Force capability to serve as a focal point for the handling of Federal-State and Federal-local Government affairs. This group would rely upon the technical evaluation, contracting, research and development, legal and other groups in the Task Force proposed capability. Reserved to the group would be monitoring, liaison, operational aspects of assistance, conferences, symposive, and face-to-face, activities which would be required of the new capability to do its job.

Personnel estimates for the Federal-State-local Government Affairs entity of the proposed Task Force Capability would be:

- o One professional individual assigned to the activities of 3 states. 17

- o One professional individual assigned as regional supervisor for each of the eight OEP regions to supervise the office individuals associated with the states in each OEP region. 8

- o One Office Director and one Deputy Director. 2

- o Assistance funds, directors (professionals) to administer funded programs throughout the States. 10

- o Secretariat professionals for conferences, symposia and permanent committees. 2

- o One (professional) budget officer to prepare statistics and justifications for Federal support of State and local pilot programs and experiments. 1

- o Secretarial and clerical support. 20

Entity Total 60

Funds required are difficult to ascertain, but based on my best "guesstimate" from past experience and the needs are as follows:

- o Personnel in new entity proposed for Task Force Capability (to be provided by J. R. O'Connell).

- o Seed funds on matching basis for State and local Government telecom studies, system designs, management innovations, experiments, pilot projects, etc. A very conservative estimate based upon existing requests which cannot be met at this time ($300K per State average) on annual basis-recurring). 15.0 Mil.

- o Coordination of or administration of following type funds expended on matching basis with State and local Governments.

  -- ETV $48.0 Mil.
  -- Highway 15.0 Mil.

-- Law Enforcement	$20.0 Mil.
-- Health and Medical	2.0 Mil.
-- Welfare	?
-- Others	?
Approximately	$85.0 Mil

Recapitulation of the foregoing results in an annual budget in the Federal-State Affairs entity of the Task Force proposed Capability would be as follows:

o New funds	$15.0 Mil.
o Existing funds	85.0 Mil.
o F-S Affairs Personnel	?
o Other staff support costs	?
	$100.0 Mil.

Charles E. Lathey
Special Assistant

cc: Reading File
Subject File

CELathey/bss

RATIONALE FOR DETERMINING THE STAFF REQUIRED FOR THE "NEW CAPABILITY" IN THE FREQUENCY MANAGEMENT AREA

*MONITORING (412 existing + 72 new)

Recent study covering requirements for monitoring Government stations indicates need for 24 mobile trucks involving 48 technicians and 24 clerks.

For non-Government operations assume present personnel of FCC field engineering bureau of 412 persons at same ratio of technicians and clerks or 275 technicians and 137 clerks.

Total: 484 employees (323 technicians and 161 clerks)

REGIONAL OFFICES (300 new)

Assumed an average of 4 professionals and 2 clerks in each of 50 states.

Total: 300 employees (200 professional and 100 clerical)

ALLOCATION AND LICENSING (240 existing + 27 new)

Present budget requirements for Government stations:

Total: 45 employees (25 professional and 20 clerical)

For non-Government stations take present FCC staff of Safety and Special Radio Services Bureau of 162 employees, add present FCC staff for Allocations and Treaty Division of 33 employees, add 27 employees for additional contemplated functions or a total of 222 employees (122 professional and 100 clerical)

Total: 267 employees (147 professional and 120 clerical)

STUDY AND TEST AGENCY (40 new)

Assume conservative estimate of 20 employees each for Government and non-Government.

Total: 40 employees (26 professional and 14 clerical)

Contract support for above would be approximately $6 million for

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a National EMC Facility or a total of $12 million.

POLICY FORMULATION (30 new)

Assume conservative estimate of 15 employees each for Government and non-Government.

Total: 30 employees (20 professional and 10 clerical)

SPECTRUM MANAGEMENT ADMINISTRATION (5 existing + 1 new)

Director, Deputy and Technical Assistant each with secretary.

Total: 6 employees (3 professional and 3 clerical)

TOTALS

Function	Employees		
	Professional	Clerical	Total.
*Monitoring	323	161	484
Regional	200	100	300
Allocation and Licensing	147	120	267
Study and Test Agency	26	14	40
Policy Formulation	20	10	30
Spectrum Management	3	3	6
	719	408	1127

CONTRACT SUPPORT

Studies: $6 Million per year
National EMC: $6 Million per year
Total: $12 Million per year

* Monitoring activity will require about $300,000 per year in purchase of additional and replacement equipment; $140,000 per year for rental of trucks; $480,000 per year for traveling expenses.

INTERNATIONAL TELECOMMUNICATIONS

This group, in coordination with other government organizations and the R&D group within the proposed telecommunications capability, will act as a focus for assigning priorities to a range of international policy goals. This task will be performed by maintaining an intimate familiarity with the present state and probable future configuration of technological and economic trends.

The international telecommunications group will also provide an overview of Comsat's activities to see that they conform to the requirements of the Satellite Act.

The largest task of the international telecommunications group will be in providing telecommunications assistance to developing countries. This effort will entail performing studies, conducting system analysis, and directing engineering design leading to establishment of telecommunications systems in these countries. Entailed in this activity is responsibility for coordinating with the FCC concerning decisions for new international transmission facilities, coordinating proposals for new communication systems, suggesting the incorporation of recent technologies

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in the developing countries, and providing training for communication decision-makers in these countries. Coordination with the R&D group within the proposed telecommunications capability and other government and private entities will be essential in performing this task.

The requested funds will be used primarily to conduct studies relating to telecommunications alternatives for underdeveloped countries.

The Systems Office will relate primarily to COMSAT activities and will require about five persons. Thirty persons will be involved in concepts for other satellite activities, transoceanic cables, overseas U.S. communications systems, and telecommunications systems for other, primarily underdeveloped, countries.

Telecommunications Technology

This is the area on which the Central Staff placed its greatest emphasis. A significant increase in resources and transfer of resources from other Federal departments and agencies will be required to provide the capability to meet the needs envisioned by the Central Staff.

The following discussion is constructed on the organizational model shown as enclosure 2. Procurement Engineering - identified as Procurement in the Central Staff paper -- envisions the application of systems analysis-based on advances in technology-- to the evaluation of systems development and design. Also included within the activities of the Procurement function is assistance to those agencies which do not have an adequate procurement capability. The Central Staff paper further visualizes that funds will be administered to offset costs of new technological ideas applied to systems (e.g., pay for any additional costs resulting from the use of satellites (vs microwave system) in an application proposed by another Federal agency.

Technological development - The Central Staff proposes wide-spread liaison and information exchange with other Government agencies, industry, foreign governments and

industries, the academic world, and wherever technology is developed or applied. The purpose is to push the state-of-the-art to exploit it for the benefit of the nation. The existing capabilities of laboratories are seen as inadequate.

Concepts and Policies - Improved Federal leadership is seen as required throughout telecommunications, particularly in the policy area. Greater Executive leadership in relations with the FCC is seen as a critical need.

A University program to train inter-disciplinary sciences is seen as a must.

OTM analysis concludes that a data-bank would be required to support the activities proposed by the Central Staff.

To meet the above requirements, the following is proposed in the study on costing the ideas of the Central Staff:

1. Within the Technology part of the staff of "The New Capability", the following organizational elements will be found:

Procurement Engineering

Systems Analysis

Procurement & Funding

Technological Development

Government & Industry Liaison

Concepts & Policies

University Programs (Supervision)

This structure has been equated to DDR&E in our analysis. DDR&E is interested in a broader area of technology; however, the Central Staff foresees more intensive management for the telecommunications area than that which DDR&E applies to overall technology. The strength of DDR&E is 257. 50% of this was taken as the proposed strength of Telecommunications Technology staff, or 125.

2. ECAC, ITS (wave propagation lab), and Bellcom were placed under the "new capability". Present strength of these labs is 937, with annual budgets totaling $14.7 million. To meet the additional demands, these labs -- or a to be developed facility-- were arbitrarily expanded 100% to 1800 people with an annual budget of $27 million.

A University program with a student strength of 50 @ $5000.00 per year was established.

A computer capability, to function as a data bank, technological library and engineer support activity was programmed at an annual cost of $1 million with 250 persons programmed to support it. This is comparable to the computer capability which supports OEP.

Administration

To administer the total force of approximately 4000 persons, with an annual budget exceeding $200 million ($77 million to operate the activity, $15 million in new grant-in-aid money, $85 million + in existing grant-in-aid money, and an unknown amount to off-set costs for new technology.) The following administrative force would be required.

Administration

Finance & Fiscal	30
Budget	10
Management Assistance	7
Contract	9
Procurement	7
Personnel	17
Training	
Adm. Services	138
Supply	
Services	
Library	
Records Management	
Printing	
Security	7
	225

Recap of costs:

	MILLIONS
Personnel Services	$ 22.2 (NOTE 1)
Travel	1.0
Other objects	2.1
Grant-in-aid	100.0 +
Contracts	24.0
Laboratories	27.0
Computer	1.0
University	0.3
Off-set	UNKNOWN
	$ 177.6

NOTES:

1. ADDITIONAL $20 MILLION OF PERSONNEL SERVICES IS CONTAINED IN FIGURES SHOWN UNDER LABS.

Management
(Director's Office)

Present strength of the personal office of the DTM is 14. This has been increased to 25. The additional 11 persons will provide 6 more professionals to directly assist the Director in his relations with industry, other departments and agencies of the Federal Government and the field activities under his authority.

A strong administrative office and increased strength in the offices of Associate Directors should accommodate the other increases in management workload.

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NATIONAL TV TRANSLATOR ASSOCIATION

September 21,1969

This Letter From
Butte, Montana,59701

Dr. Clay T. Whithead
Chairman, Domestic Satellite Task Force
White House
Washington, D.C.

My Dear Dr. Whithead:

September l'st, Broadcasting Magazine, carries a story about your committee. There has been considerable publicity on the demands of the Cable T.V. operators to secure programming via domestic satellites.

We call to your attention the fact that only people with money may secure television via T.V. cables. Further, only people group together in such a manner that it is profitable to deliver programming to their homes via cable, can receive cable television.

This letter is to advise you that a good portion of the people of rural America and small town America, are dependent on T.V. translators for their television service. As we know television translators today, they must be activated directly from T.V. broadcast stations or from T.V. translators, either in the UHF or VHF bands. We wish you to realize that it is far cheaper to deliver programs to homes by these translators than it is by T.V. cables. We also want you to know that the T.V. signals from translators are in most cases better, cleaner signals, than are those from the T.V. cables.

We are not advocating the change in our system of broadcasting from community stations to a national system of translator repeat of satellite to home. We only wish to point out that if satellites are to be used to feed T.V. cables, they should be used to feed T.V. translators, because this is a more economical way to serve the public and will be of far more public interest than as the pay cable system. We are informed that it is entirely possible to place satellite signals on T.V. translators to have them repeated on these instruments for home consumption.

Respectfully yours,

E.B. Craney

E.B. Craney

EBC/pr
cc: 2

9/23/69 -- Tom Whitehead met with

Paul (Andrew)(Director of Public Affairs)

Len Kolsky (Manager, Washington Office)

of Motorola Communications and Electronics, Inc.

Meeting 9/23/69

November 5, 1969

Dear Andy:

Thank you for the copy of the book "The Radio Spectrum, Its Use and Regulation." I have previously read through many of the articles in this book and in particular the one by William K. Jones, to which you refer.

I regret that I cannot offer any specific advice on how you might further dramatize the plight of the land mobile services. I am afraid that we simply have to resort to a number of ad hoc improvisations until we have a better handle on the whole subject of spectrum allocation. We recognize that this is an important matter, as we discussed, and are continuing to give the matter considerable consideration.

Sincerely,

Clay T. Whitehead
Staff Assistant

Mr. Andrew R. Paul
Public Affairs
Motorola Communications and
Electronics Inc.
Washington Liaison Office
Suite 810
2000 L Street, N. W.
Washington, D. C. 20036

cc: Mr. Whitehead ✓
Central Files

CTWhitehead:ed

MOTOROLA Communications and Electronics Inc.
Suite 810
2000 L Street, N.W.
Washington, D. C. 20036

October 31, 1969

Mr. Clay T. Whitehead
Executive Office of the President
The White House
Washington, D.C.

Dear Tom:

I want to thank you again for the meeting you had with Len Kolsky and myself a few weeks ago. We understand your concern with the entire matter of spectrum utilization and allocation, and we appreciated your awareness of the land mobile problem.

You referred to the potential necessity of a new agency, possibly representing the Executive Branch, to determine priorities for access to the scarce radio spectrum. This is an extremely difficult problem. Efforts to arrive at priorities among the various land mobile services were undertaken by the Land Mobile Advisory Committee, but that group was unable to do so. Such questions as to whether the use of radio by a plumber as opposed to a towing service presented LMAC with an insoluble problem.

As I recall, you suggested that one basis for such a priority determination might lie in the sale of spectrum. While this may have meaningful merit in determining which of two broadcasters should be granted a channel, or whether a wire line common carrier should prevail over a broadcaster, this approach presents a rather unique problem where the contest might be between land mobile and non-land mobile parties. This whole subject was pursued in a conference held at Airlie House and a report on this meeting by William K. Jones is in the enclosed book, The Radio Spectrum, Its Use and Regulation.

On the land mobile spectrum specifically, we were interested in your remarks regarding the possible availability of obtaining relief in the 420-450 MHz band presently allocated to the Fed-

eral Government. To the extent that this band is also contiguous to existing land mobile space, it is an appealing alternative in that land mobile equipment could be readily developed to operate on these frequencies.

In either event, we are concerned that the "clout" of land mobile services would be insufficient to compete with our more politically potent opponents. We believe that the facts are on our side, and we would be glad to provide you with any additional data you might wish. Frankly, however, our more pressing need may well be some objective advice as to how we can better dramatize the plight of the land mobile services. We would be most grateful for any guidance you could offer in this regard.

Sincerely yours,

Andrew R. Paul
Public Affairs

AP/pg

Encl.

Tuesday 9/23/69

10:40 Meeting with Andy Paul and Len Kolsky of Motorola has been changed to 5 o'clock this afternoon.

mlg
9/23
4 pm

Monday 9/22/69

4:15 Have scheduled a meeting for Andy Paul (Director of Public Affairs at Motorola) and Len Kolsky (Manager of the Washington Office) for tomorrow (9/23) at 4 o'clock.

Have advised Mr. Hofgren.

Monday 9/22/69

3:00 Mr. Hofgren advises that Andy Paul of Motorola will be calling for an appointment.

CHRISTIAN BROADCASTING NETWORK, INC. P.O. Box 111 / 1318 Spratley Street / Portsmouth, Virginia 23705 / Phone (703) 393-2505

CTW
WK

September 26, 1969

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

Dear Mr. Whitehead:

I understand that you are presently conducting studies into the use and operation of a domestic satellite system. Although I have not been directly requested to submit information to amplify the material available to you, I would like to take this opportunity to present briefly the concept of the transmission of religious programs over the satellite system.

As you know, a recently released report of the NATIONAL COMMISSION ON THE CAUSES AND PREVENTION OF VIOLENCE has issued an urgent call for the production and distribution of high quality television programs which are not oriented toward violence and other bizarre situations.

The aims and goals of the Christian Broadcasting Network are completely in harmony with this approach.

At present we are operating a network of radio stations in New York State and a radio facility in Virginia. Our television station in Virginia has been augmented by the grant of Channel 46 in Atlanta, Georgia; a proposed transfer of Channel 40 in Indianapolis, Indiana; and network affiliates in Miami, Florida; Akron-Cleveland, Ohio; Los Angeles, California; Houston, Texas; and Greenville, South Carolina.

We are presently building four (4) major color production facilities for the preparation of outstanding television programs and series for transmission over our own stations and other affiliated outlets throughout the country. In addition to studio facilities, we have established a close working relationship with RME Productions, Inc. of Columbus, Ohio, which owns and operates four (4) color video tape cruisers which are capable of high quality production at any remote location.

With this framework of stations, remote facilities, and supporting personnel, the Christian Broadcasting Network plans a nationwide thrust of children's programs, drama, inspiring music, and similar religious programs. It is our feeling that there has never been a greater need for a spiritual renewal in the United States, and we are aware that our view on this matter is at one with the unashamed Christian principles of President Nixon.

Although our plans during the 1960's have been formulated toward the existing means of television transmission, we would be most interested in transmitting Christian television and radio programs via domestic satellites to a series of low cost receivers similar to what is being invisioned by NASA and the Government of India for the early 1970's. Whether the technology of the next decade will reveal radically different means of the ground transmission of television and radio programs or not, we do respectfully request that the planning for a satellite transmission system will include plans to carry the programs of The Christian Broadcasting Network as well as those of the Entertainment and News Networks and the Educational and Cultural Networks.

I would be delighted to amplify these suggestions if further information and material is needed. In the meantime please accept my thanks for your consideration of this letter.

With all good wishes, I am

Cordially yours,

M. G. Robertson

M. G. Robertson
President

MGR/sm

TELEVISION COLOR PRODUCTIONS • COLUMBUS/NEW YORK

RME

COLOR
BROADCASTING

Friday, September 26, 1969

Mr. Clay T. Whitehead
Presidential Staff Assistant
The White House
Washington, D.C.

Dear Mr. Whitehead:

I am writing in regard to the studies and investigations now being conducted concerning the establishment of a domestic satellite system. My letter is being forwarded to you to be considered in association with one which you shall be receiving from Mr. M. G. Robertson, President of The Christian Broadcasting Network.

Even though no inquiry has been made of my company with regard to the domestic satellite program, with your permission I should like to add my attitudes insofar as they touch upon one new area of program sources and materials for dissemination by satellite. It would seem clear, both for reasons of tradition as well as for the moral and ethical climate of the future, that one program area of substance and significance to be considered in addition to commercial and educational originations, centers upon the distribution of religious broadcasts on a regular network pattern and basis. In conjunction with the Christian Broadcasting Network, RME would like to place before you for review the category of religious programming as a stimulating, inspirational, and rewarding catalogue of program materials.

Mr. Robertson, whose network is currently presenting religious broadcasts to a number of American communities on several radio and television stations owned and operated by CBN, will outline in his letter the underlying philosophies and operating procedures which would bear upon and contribute to this project. RME, which is a major supplier of television mobile remote facilities to the major broadcasting networks for production both here and abroad and which has recently formed RME Programming as our conceptual arm, stands ready to share with Mr. Robertson both the personal and corporate conviction as well as the financial commitment required to develop this phase of broadcasting within the broad spectrum of program profiles to be presented.

Should you wish to contact me, please feel free to do so through our Home Office which is located in Columbus, Ohio. Our New York office has been recently relocated to 100 West 57th Street in New York City where the telephone number is (212) 582-4460.

I appreciate your attention to this letter and wish you success in the final days of your deliberations. Best regards.

Sincerely,

Richard S. Mann

Richard S. Mann
President
The RME Group of Communication Companies

RSM/jv

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

October 23, 1969

Dr. Clay T. Whitehead
White House Staff Assistant
THE WHITE HOUSE
Washington, D.C. 20013

RE: YOUR SPECIAL STUDY OF DOMESTIC DIRECT BROADCASTING SATELLITES, AND FCC DOCKET 18294 ON RECOMMENDING TO WARC-ITU THAT DIRECT INTERNATIONAL BROADCASTING BE ALLOWED TO USURP/PRE-EMPT OUR GROUND BASED BROADCAST CHANNELS.

Dear Sir:

1. This is somewhat of a summary, but better explanation and illustrations, of some previous correspondence to indicate longer time very undesirable implications of allowing the off-ground direct broadcasting principle to be superimposed above or on top of the ground-based principle of distribution in the civilian sector, where we need local control, competition, and generation of local broadcasting (either commercial or non-commercial educational broadcasting; the latter being my main interest as a 20-year school board member, former university communications staff member, and first involved in educational broadcasting over 40 years ago at two universities).

2. Attached is a rather severe summary of several other papers done for fellow school board members and school people, "Notes on Direct Broadcasting Satellites; TAE101269LM - 021169 - 021063 - 030768 - 021462 - 021866", which points out and illustrates a few of many reasons why I suggest the direct off-ground/satellite broadcasting principle is very undesirable in the longer run in the civilian sector of any developed country.

3. I have personally been involved in several years of work, and millions of taxpayers' educational money, in a direct off-ground broadcasting experiment, "MPATI", as marked in red and illustrated on the TAE021169LM2B1A and TAE021063LM1 sketches attached; one of several extensive larger area non-commercial broadcasting experiments illustrated in the U.S.

A. Note also Paragraph 4, Pg. 2, of the attached "101269" notes, also marked in red, where is summarized the main thrusts I would make of several years of FCC study and testimony of many top communications systems engineers in the U.S., including the (EIA) Electronics Industries Association (including 80% of the total U.S. Communications and Electronics Industries).

B. In addition, for some years, I worked for one of the communications flight engineers on the 3-year, 3-million dollar combined armed services, industry, FCC, off-ground broadcasting experiment mentioned in the attached paragraph 4B.

C. In case you might be interested in further introduction or experiences leading to these comments and conclusions, please see the last attachment 021866.

4. May I make an emphasis/thrust that I am not objecting to certain special intercontinental, security, and commercial uses of (non-direct to people's homes and schools) satellite communications, as mentioned in the attached 101269 notes.

A. My main thrust is that direct civilian off-ground satellite broadcasting to the home and school sector is very undesirable for a developed country, where we have already seen public domain frequency spectrum utilization efficiency is very, very important.

B. The "off-ground" direct broadcasting principle is a very inefficient use of the civilian sector frequency spectrum and much more costly for equivalent services and flexibility in a developed country.

C. Another thrust is that the off-ground direct broadcasting sub-system would be desirable and acceptable for a special application in a non-developed country, with proper systems analysis to safeguard a breakeven economy point for changeover to the ground based system as the country became developed and needs to conserve its frequency spectrum. Back in 1962, from a plan developed in 1960, I recommended just this approach to AID - State Department - See 021462 marked in red, 8th paragraph, attached. So I recognize the correct use of the off-ground principle of broadcasting in a correct mode; but, we must differentiate the use mode and give wide dissemination to the situation so that correct decisions can be made for the best longer pull situations at the local levels.

D. This differentiation between; (1) the extreme inefficiency of the off-ground direct broadcasting principle, in the civilian sector, and: (2) the efficiency, flexibility, and utilization of the ground-based principle of radio communications, has been completely ignored for too long.

E. The great glamour and "spacious fantasy" appeal of space/satellite communications, by those who have not made careful overall comprehensive systems analysis and operational research into the matter, with the failure thus to delineate these two conflicting and contrasting methods of communications in the civilian sector, has led many people to think Satellites are the manna from the communications heavens. My thrust is that this is not the case at all. The people who have to make the social decisions, must have all the story before they can make the correct decisions for best longer time results. The long time one-sided publicity about this aspect of the space age, has not differentiated sufficiently between these two telecommunications broadcasting principles, as they would effect the civilian sector of the society. In these increasingly complicated technological times we must have better and more comprehensive systems analysis by government, citizens, and the industry. The stakes are too high for us not to do this.

F. Incidently, it seems that the FCC in effect has turned down just this request by (EIA) Electronics Industry Association, which would effect the FCC recommendations to WARC-ITU on allowing off-ground satellite broadcasting direct on top of U.S. broadcast channels (T.V. and radio).

G. My interpretation of the already printed proposal of FCC to WARC-ITU Geneva 1970/71 is that it is in error. It should <u>not</u> recommend changing regulations to allow off-ground direct intracontinental satellite broadcasting on the U.S. civilian sector channels (or any other developed country for that matter!)

H. My thrust is that the FCC proposal to WARC is very, very wrong in that respect, and this should be changed to recommend that direct Satellite broadcasting not be authorized in the civilian sector, in a developed country.

5. It should be recognized that at frequencies well above the broadcast bands these objections are not so valid because of directivities of antennas possible on satellites, and other technological factors that change with frequencies. This sort of thing also has to become a part of the total systems analysis.

6. The importance of not allowing direct off-ground satellite broadcasting in the civilian sector, for both commercial and non-commercial/educational broadcasting (both radio and T.V.) is illustrated by the Education-Business-Industry Interaction System Flo Diagram 030768 attached.

A. I suggest that a very careful spot-by-spot analysis of the many educational sub-system need areas on the diagram coupled with a careful sub-systems study of our countrywide educational system, will show that if we are to alleviate the educational, social, economic needs in our society, we must have more local control program-content generation, flexibility, and change decision making potential, at competitive local and federal levels.

(1) This we can have with the most economical ground-based telecommunications broadcasting system; but, we cannot have it if the FCC's recommendation to WARC for authorizing direct satellite world-wide intracontinental broadcasting is put into effect. This is the important thrust here; the system differentiation information and dissemination that must be made for all use sectors in the society to give full consideration!

B. This 030768 Educational System Flow Diagram is not intended to be complete, but it is suggested that careful consideration will show that at present the conventional educational system and its directions does not have a ghost of a chance of doing the job to be done in correcting many of the ills that have been popping up in the society.

(1) One of my thrusts is that, from what we can see now, only a new educational telecommunications systems technology application to the whole society can make a significant dent in the picture.

(2) This means the need for an educational communications system where either or both the local area solutions or possible federal solutions have competition for public enlightenment and decision making.

(3) The FCC proposed authorization of overriding direct satellite broadcasting onto the social/civilian sector will not only prevent local and federal competition, but can prevent and pre-empt local control and program generation, as well as lay down an inefficient utilization of the public frequency domain that can never provide sufficient channel space to do the local public information and/or educational job! The serious channel "frequency spectrum crisis" in some U.S. sectors has already demonstrated this quite adequately.

(4) My contention is that this is not only an undesirable systems communication situation, but it is intolerable socially, morally, and economically; that is to authorize direct satellite broadcasting on our B.C. channels.

(5) We need a complete comprehensive social and communications systems and operations analysis of this situation; that in effect has been requested of the FCC in this docket. Such a systems analysis has not been observed as yet in this picture. It effects commercial and non-commercial broadcasting equally. It is important!

7. I hope you will find time to consider these several suggested important considerations leading to a conclusion that authorizing of off-ground inter-intra-continental, direct broadcasting in the civilian/non-government sector, is a very undesirable direction for either U.S. or worldwide telecommunications. Your reaction would be very much appreciated.

Yours very truly,

LPMorris

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

LPM:es
Enclosures

October 23, 1970

Dr. John T. Whitehead
White House Staff Assistant
THE WHITE HOUSE
Washington, D.C. 20013

RE: YOUR SPECIAL STUDY OF DOMESTIC DIRECT BROADCASTING SATELLITES, AND FCC DOCKET 18294 ON RECOMMENDING TO WARC-ITU THAT DIRECT INTERNATIONAL BROADCASTING BE ALLOWED TO USURP/PRE-EMPT OUR GROUND BASED BROADCAST CHANNELS.

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B. In addition, for some years, I worked for one of the communications flight engineers on the 3-year, 3-million dollar combined armed services, industry, FCC, off-ground broadcasting experiment mentioned in the attached paragraph 4B.

C. In case you might be interested in further introduction or experiences leading to these comments and conclusions, please see the last attachment 021866.

Dr. Clay T. Whitehead
Washington, D.C.

4. May I make an emphasis that I am not objecting to certain special intercontinental, security, and commercial uses of (non-direct to people's homes and schools) satellite communications, as mentioned in the attached 101269 notes.

A. My main thrust is that direct civilian off-ground satellite broadcasting to the home and school sector is very undesirable for a developed country, where we have already seen public domain frequency spectrum utilization efficiency is very, very important.

B. The "off-ground" direct broadcasting principle is a very inefficient use of the civilian sector frequency spectrum and much more costly for equivalent services and flexibility in a developed country.

C. Another thrust is that the off-ground direct broadcasting sub-system would be desirable and acceptable for a special application in a non-developed country, with proper systems analysis to safeguard a breakeven economy point for changeover to the ground based system as the country became developed and needs to conserve its frequency spectrum. Back in 1962, from a plan developed in 1960, I recommended just this approach to AID - State Department - See 021462 marked in red, 8th paragraph, attached. So I recognize the correct use of the off-ground principle of broadcasting in a correct mode; but, we must differentiate the use mode and give wide dissemination to the situation so that correct decisions can be made for the best longer pull situations at the local levels.

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E. The great glamour and "spacious fantasy" appeal of space/satellite communications, by those who have not made careful overall comprehensive systems analysis and operational research into the matter, with the failure thus to delineate these two conflicting and contrasting methods of communications in the civilian sector, has led many people to think Satellites are the manna from the communications heavens. My thrust is that this is not the case at all. The people who have to make the social decisions, must have all the story before they can make the correct decisions for best longer time results. The long time one-sided publicity about this aspect of the space age, has not differentiated sufficiently between these two telecommunications broadcasting principles, as they would effect the civilian sector of the society. In these increasingly complicated technological times we must have better and more comprehensive systems analysis by government, citizens, and the industry. The stakes are too high for us not to do this.

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Dr. Clay T. Whitehead
Washington, D.C.

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B. This 030768 Educational System Flow Diagram is not intended to be complete, but it is suggested that careful consideration will show that at present the conventional educational system and its directions does not have a ghost of a chance of doing the job to be done in correcting many of the ills that have been popping up in the society.

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Dr. Clay T. Whitehead
Washington, D.C.

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7. I hope you will find time to consider these several suggested important considerations leading to a conclusion that authorizing of off-ground inter-intra-continental, direct broadcasting in the civilian/non-government sector, is a very undesirable direction for either U.S. or worldwide telecommunications. Your reaction would be very much appreciated.

Yours very truly,

L P Morris

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

LPM:es
Enclosures

NOTES ON DIRECT BROADCASTING SATELLITES: TAE101269LM1

1. There are two Federal Communications Commission Docket Cases, Nos. 16495 and 18294, that have been suggested and could have serious consequences for non-commercial (educational) as well as commercial entertainment broadcasting, direct to schools and homes. These could amount to an intensified intra-inter-continental worldwide expansion of the off-ground direct broadcasting principle implemented by (MPATI) Midwest Project or Airborne Television Instruction into 6 midwestern states for several years past, and experimentally some 20 years previously in a 3-year 3 million dollar operation by the Armed Forces, F.C.C., and industry.

A. As the Ford Foundation was a major implementor of MPATI so it seems to be in FCC Docket 16495, to promote an intra-continental direct U.S. broadcasting satellite for schools and homes; according to much of the publicity and understanding resulting.

B. One interpretation of the second FCC Docket 18294, the Fifth Notice of Inquiry, into direct satellite broadcasting on a worldwide intercontinental basis, suggests that the U.S. agree to satellite broadcasting directly on, or co-channel with, U. S. civilian regular ground-based broadcast channels up through the (ITFS) Instructional Television Fixed Service, 2500 M.Hz band for education; and furthermore that we rush into such agreement because time is short to make the next international (WARC-ITU) World Administrative Radio Conference and International Telecommunications Union in Geneva in 1970-71.

C. There is quite considerable United Nations' and other groups' activity, publicity, and pressures to consummate authorizations and implementation of these FCC Docket matters on international authorizations.

2. A thrust here following is that these two dockets have not had sufficient airing and wide discussion by citizens and industry to illustrate some of their very bad characteristics and undesirable future implications for use in developed countries where there is already great need for more frequency spectrum channels than are available.

A. The off-ground direct broadcasting distribution system principle (satellites) (radio and/or television) brings very serious and inefficient utilization of the public domain frequency channels; results that are especially detrimental in a highly developed country.

B. This principle of off-ground broadcasting can be tolerated under certain conditions in underdeveloped countries where all the frequency spectrum is not needed; and where, if it is used, there will be time to later delete the off-ground satellite system and substitute a ground-based system before the country has grown to where all the channels are needed. This point has been passed in some countries already.

C. This off-ground broadcasting principle can also be tolerated in the government controlled sector because of certain special and national security factors and in certain commercial primary distribution (non-direct to user) applications, where efficiency of channel utilization is not a major requirement.

D. The direct to user school and home broadcasting sector is however an entirely different communications systems situation, and cannot tolerate these off-ground general broadcasting principle inefficiencies.

3. The Direct off-ground satellite broadcasting principle allows the satellite system to blank out or interfere with (at the frequencies here under consideration) the many times across the country that local communities, or school boards, could reuse or repeat these same frequencies in the ground-based mode.

A. As an example, the same UHF frequency spectrum space for 6 channels for the U.S. in off-ground broadcasting mode, could provide three to five thousand independent simultaneous community or school district applications in the ground-based mode. One airbased (satellite) channel blanks out, usurps or pre-empts, hundreds of local simultaneous uses of in-the-ground-based mode across the country.

B. For the equivalent civilian local use and flexibility the cost of the air-based satellite mode is many times greater than for the ground-based mode. This is a very important consideration, and there are simply not enough channels to do the job in the air-based mode in the long run ahead.

C. The inter-time zone flexibility, channel utilization, is very bad for the air-based satellite mode of broadcasting. (In many countries one part of the country is sleeping while another part is working, different languages and customes exist, etc.).

4. Two of many past situations can be cited in support of the above points as to the bad inefficiencies of the off-ground broadcasting principle:

A. Some time ago the FCC formally refused to allow the regularizing of the off-ground principle of UHF broadcasting. After several years of study and testimony by many communications experts, nationwide, the FCC said in effect that:

(1) The implementation of the off-ground broadcasting principle would undesirably disrupt and adversely effect the American broadcast system,

(2) This principle was a very inefficient utilization of the public domain frequency spectrum channels,

(3) The regularization of this principle of broadcasting was not in the national public interest,

(4) Etc., etc.

B. Secondly, a 3 million dollar 3-year combined Armed Services, FCC, Government, experiment 20 years ago proved this off-ground broadcasting principle so obsolete for the public broadcasting sector that not one single commercial such station was ever implemented or licensed since that time.

THIS WAS "MPAT1-See TAE021169LM2B1A attached"

5. This then raises the question with this observer of whether or not the educational non-commercial broadcasting sector (as well as commercial) whould be penalized by the potential usurpation of channel usage by the possible FCC Docket 18294 recommendations to (WARC-ITU) World Administrative Radio Conference - International Telecommunications Union, that direct broadcasting satellites be allowed directly on top of our U.S. broadcasting channels! This could prevent our U.S. local community or school use of these channels in the local ground-based mode. Should we repeat this waste of time, money, and spectrum space for a third time, and on even a bigger scale than before in the civilian sector?

A. It is here suggested that the FCC Docket 18294 should recommend that international or domestic satellites <u>not</u> be authorized directly on U.S. civilian broadcast channels, except possible in a few

percent of the channel space for special purpose.

B. It is suggested that the situation is serious enough that perhaps no such satellite authorizations be recommended to WARC-ITU.

C. It is further suggested that the complete satellite story be disseminated to all concerned people in the U.S. and that ample citizens, industry, school representation be permitted to participate in the recommendations of these FCC dockets, so as to protect the civilian broadcast user. The FCC once acted to protect the U.S. civilian sector; let us not undo this protection on an international scale. We should not permit off-ground satellite direct broadcasting to be on and interfere with U.S. civilian broadcast channels - commercial nor noncommercial!

6. It is suggested educational broadcast users should study this critical situation more to get a fuller understanding of its inefficiencies and undesirable future implications, so as to make proper suggestions to the FCC on these dockets, and protect their future application. If not, then the future may be so severely limited as to make this direction very undesirable for educational broadcasting or for spending of public educational tax resources. This is an important matter to U.S. Boards of Education, where there is policy responsibility to protect educational resources.

7. The implementation of inter-intra-continental domestic direct broadcasting satellites can be simply viewed as a worldwide expansion of the old MPATI off-ground direct broadcasting principle in a general way, as long as the main publicity and proposals emphasize or leave the impression of direct to home and school broadcasting as a prime function of the movement. We should be specific and emphatic that we do not want to authorize direct satellite broadcasting to homes and schools!

A. More specifically, the first referenced Docket 16495 could also be oriented solely with primary inter-station, inter-area, or inter-time zone function, as results from cross country microwave or co-ax cable interconnections; a non-direct broadcasting function, and is a legitimate and commercial telecommunications function; that must be kept a separate function and decision. This is OK, and should not be confused with the direct broadcast to home and school sector function so often mentioned in so much of the "spacious fantasy" satellite publicity and by people who do not recognize these separate functions and problems.

B. This Ford Foundation pushed primary satellite distribution idea is a good one, only as long as it is purposefully kept separated from the civilian direct broadcasting idea.

C. A thrust here is that these several different distribution modes or functions must be carefully and rigidly kept separated into their proper category. This also includes mobile services mentioned several times in relation to the latter docket; depending upon the frequencies involved also.

D. And, the direct broadcast function must not be permitted from the off-ground satellite mode of broadcasting; and the people involved should know the reasons for the different modes, and get them placed in the right use categories; for both FCC Docket situations.

8. Consideration of these dockets can be justified only if the satellite is not authorized on the majority of U.S. broadcast channels

(radio or television). This is the important point that should be brought to the attention of all concerned!

A. People and services involved should study the situation more carefully and petition the FCC to make sure this total system situation is well understood by all, as it bears on the docket decisions, and the publicity and information dissemination be clarified to the maximum for all concerned, showing the differences between these various applications and their longer time effects on the utilization of the frequency spectrum; especially in the civilian/public domain where already we are said to be in a "frequency spectrum crisis" in some sub-sectors in the U.S. We can't afford to use this public and educational resource in such an inefficient manner as could result in wrong decisions in these dockets.

9. In summary then we should be much more specific in:

A. The earlier and first docket 16495 that the domestic direct broadcast mode of distribution to homes and schools not be authorized, and,

B. Secondly, that the second docket 18294 does not recommend to WARC-ITU that international direct satellite broadcasting be authorized on U.S. broadcast channels, and,

C. Thirdly, that specific and emphatic distinctions be made relative to these methods as they may apply to special systems cases in special and underdeveloped Vs. developed countries and areas, and,

D. Fourthly, that much more careful and complete communications systems analysis be made and disseminated to all people concerned in this new telecommunications art, and

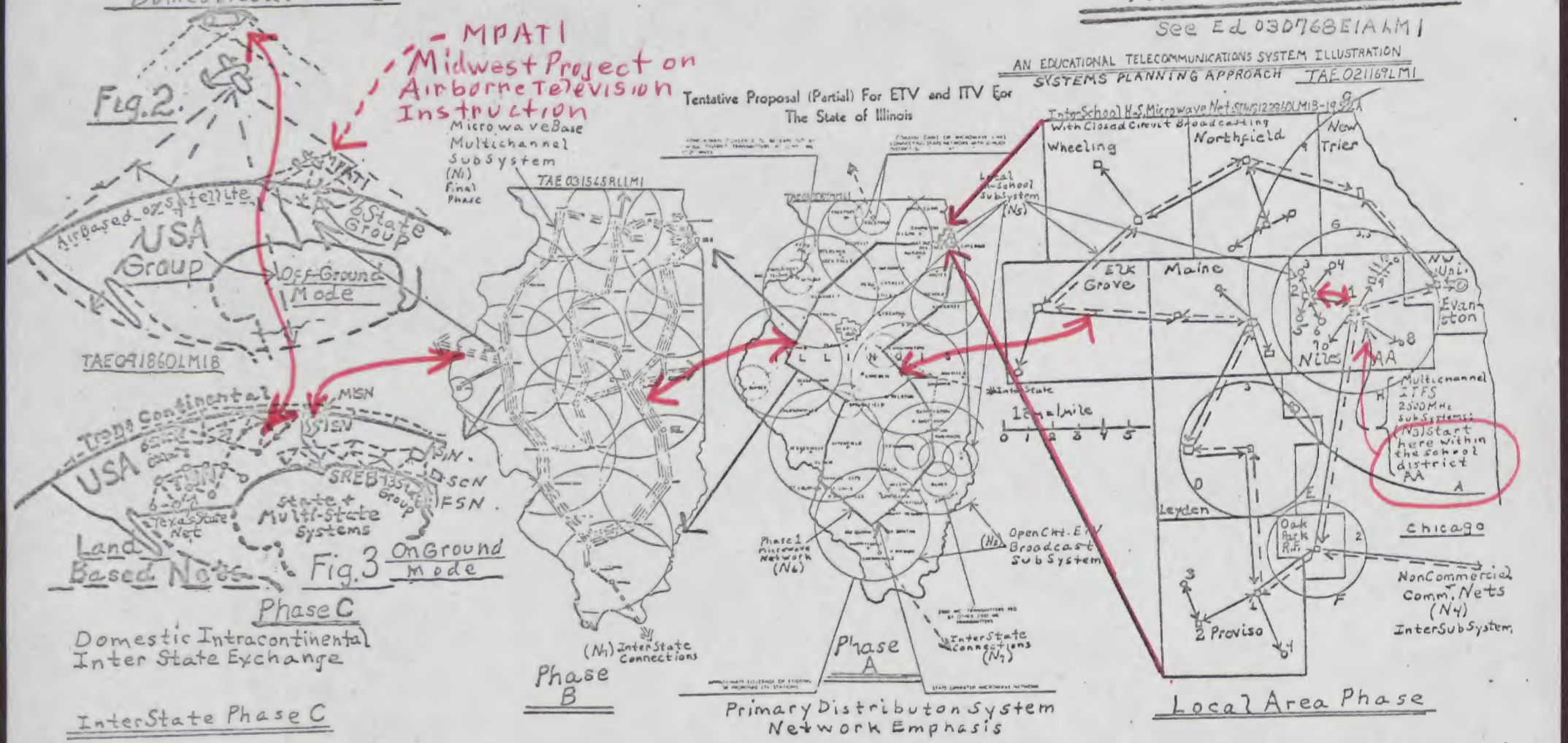
E. Fifthly, that more information and time be provided for civilians and industry to become aware of, understand, and participate in such actions of these dockets, where what other countries do, as they become more developed and need all the frequency spectrum, can seriously restrict our use of the spectrum, etc.

F. These are the issues that must be given more careful detailed systems consideration. These issues effect both the civilian and commercial sectors. They will be paramount if we approach, as some sociologists have already suggested, the situation within this century where the social communications arts effort may become 50% to 70% of the G.N.P. We cannot tolerate inefficient use of our telecommunications spectrum. We should not be doing things now that could lock us into undesirable international or national inefficiencies, in local or worldwide life blood telecommunications!

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

ILLUSTRATION OF A SUGGESTED APPROACH TO AN EDUCATIONAL TELECOMMUNICATIONS SYSTEMS TECHNOLOGY ANALYSIS

(See Notes)



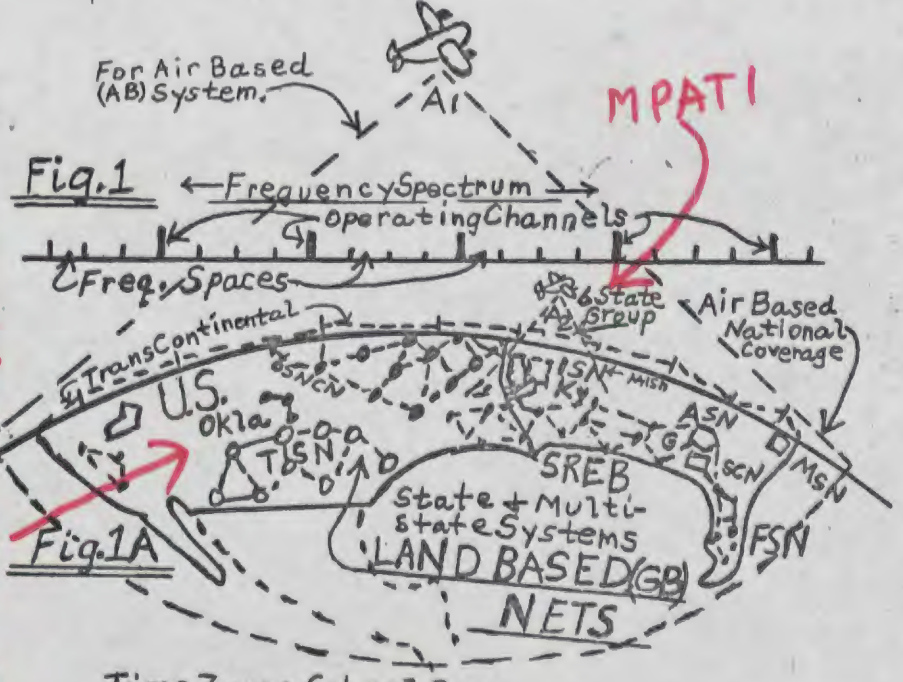
Analysis to include system and subsystem definitions of: problems; objectives; measurement effectiveness; constraints and uncontrollable variables; controllable variable: subfunctions; alternatives to subfuntions; synthesize subsystems: evaluation; selection functions; development of model; collection of data; software support; anticipated change; plan for continued evaluation; etc. Should also include consideration of known media such as: computer managed operations & programming; Prog. Learning principles; Talking typewriters; T.M.S.; ITFS; interaction A-V analysis; CAI; CAL; A&V&AV remote random access; Learning Labs; Repetitive impact; Series Spencer & branching Crowder programming approaches; multi-media AV; person to person response systems; teleconferencing; Library Materials interchange & I.R.; subsystem coordination; continuing Voc. and compensatory Ed.; Software dev.; Teacher Ed.; cost effectiveness; future intra-interstate intracontinental interconnection exchanges; in/out of school ETV, etc.

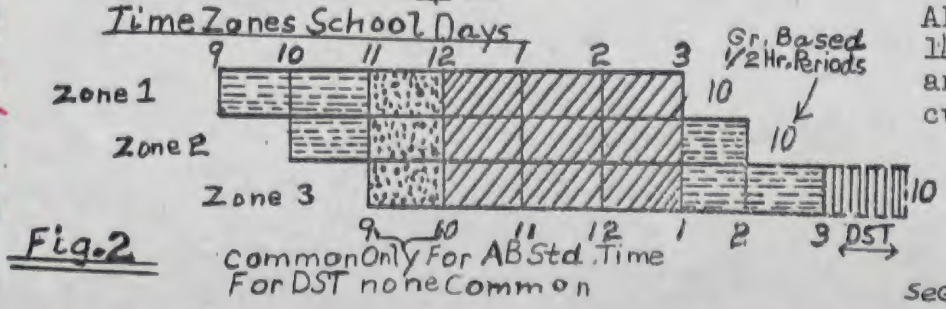
HOLD in File

(TAE021063LM1)

SOME AIR VS. GROUND BASED BROADCASTING UTILIZATION ILLUSTRATIONS

1. An air based country wide broadcasting system at the present state of the art results in only one lesson program per operating channel country wide or within the coverage area of the high altitude station. The ratio between usable operating channels to frequency spectrum space may be 1 in 3, 4, or 5, depending upon the application. (Figure 1) Any other program on the channel or within the guard bands would cause interference (AB)& A_1.
2. With the ground based principle, the same channel can be simultaneously repeated many times across the country (due to the signals from low antennas dying out in a short radius around the station). (GB) Fig.1A .
3. A ground based station cannot be satisfactory within the coverage area of the higher altitude air based transmitter signal.
4. The country wide air based system can cover 4 different time zones in the U.S.; any one of which may include daylight savings time.
5. Each time zone school day is shifted an hour from the other so that a 10:30-11:00 class period in one time zone, for example, does not coincide with another; to the extent that in 3 time zones, with one on daylight savings time, excluding the noon hour, no single half hour class period in the school day is common to another.
6. Engineering studies indicate that the spectrum space to provide 6 air based operating lesson channels would support over 2600 independent simultaneous operating ground based stations; a very poor utilization efficiency, countrywide (New studies indicate a much bigger ratio)
7. This zero efficiency (without repeating and duplication) of the time zone scheduling feature times the 6 vs. 2600 factor above, are 2 of the several reasons why this observer estimates that the long time country wide application of the ground based system will be much less costly than the air based system, for equivalent services.





8. Two way (air based) ETV interchange very difficult costly and more inefficient of freq. utilization. (gr. based normal).
9. Air based ETV schools cannot drop out and operate independently.
10. Simultaneous independent half hr. periods/day in 3 time zones, one DST; for gr. based (GB) = 30; for air based (AB) = 0.
11. Local area independent broadcasts: GB = yes; AB = No.
12. Simultaneous independent half hr. lessons: per school day GB = 30, AB = 6 (none common) (In effect 30 & 0).
13. Countrywide Independent ½Hr. lessons/Sch.day: GB=26,000.+; AB= 60.
14. GB permits Local/Changing and/or Net centralized sched.& curr. control; AB allows only nationally centralized control & no local change in ETV .

other than these large area sub systems exist in U.S.

See TAE032662LM1A series

Master File Copy

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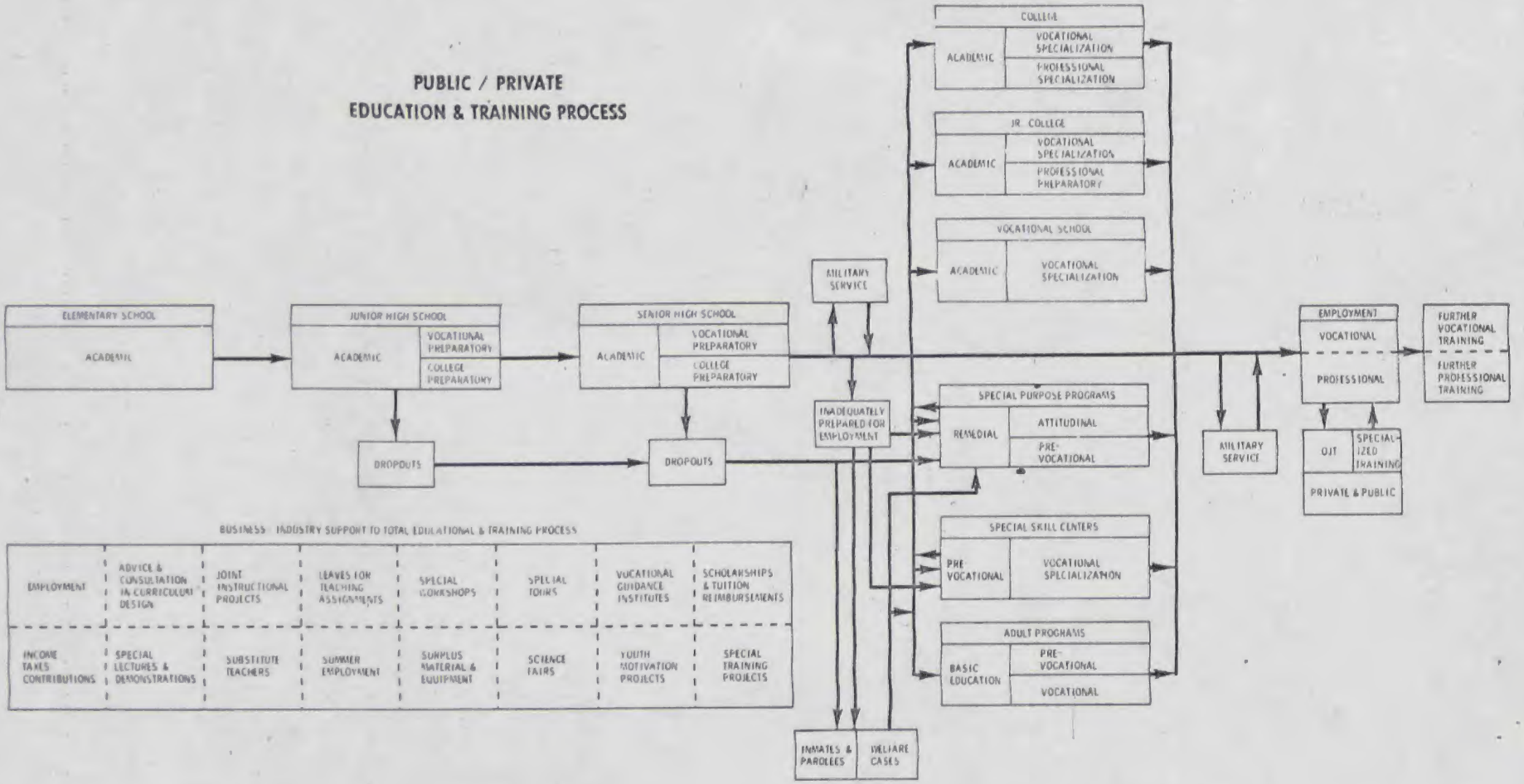

Systems Flow Chart For Education-Business-Industry Study/Interaction Program

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TAE 02.14 62 LM1

TIMES HOME NEWSPAPERS, WEEK OF FEBRUARY 14, 1962

Elmwood Park Educator Asks Expanded Educational TV

A proposal to bring a wider range of higher quality local and state initiated educational opportunities to both in and out of school students and adults in all areas in Illinois, with expected economy improvements, has been made to the Governor's School Problems commission.

The proposition, by Lloyd P. Morris, 2947 N. 78th ct., Elmwood Park, is to carry Educational TV (ETV) programs using the best facilities, teaching competencies, specialists, and subjects from the various University-high schools-elementary schools into other such schools and homes desiring same. In this manner those communities with the least, as well as those with abundant resources, could all have available more of the same highest quality education.

Two Federal legislative commissions have reported one state ETV system has produced better education and saved $1 million per year for 3 years in educational plant costs; with an anticipated additional $5 million savings in the next 10 years.

This new Illinois proposal suggests sufficient per pupil savings to Illinois tax payers to pay for the system in 5 to 10 years; while at the same time bringing the finest in Illinois education into the school and homes of all sections of the state, providing for better utilization of teaching competencies and facilities, and reduce general teacher loading.

This plan has been made by life Illinois PTA member, Morris who has been working on the study for several years. He is also a communications engineer, former university staff member, life NEA member, local board of education member for 12 years and now its president.

He also is president of his township school board association for 2 terms, member of the Illinois and National School Boards association, and member of a 3-6 county school board association ETV Council bringing ETV programs to teachers, citizens, and board members in the Chicagoland and northeast Illinois.

He has been studying, visiting, and contacting some of the several hundred ETV projects and educational research and development experiments in the U.S. for over 6 years; and has endeavored to bring the best part of these experiences together for the improvement of quality, economic, and quantity aspects of Illinois Education.

He has also served on a number of teacher and educational workshops in recent years; and more recently been asked to serve as a consultant on some overseas educational problems of AID-State Department in Washington.

This intra-state interchange of superior ETV programs and associated off-school time functions is proposed over higher directive microwave radio pencil like beams between ETV stations at all of the University of Illinois outlets and selected center; like commercial entertainment TV is now brought into millions of U.S. homes.

These local centers could receive and exchange ETV program lessons from all of the other centers and stations within the state network, could generate their own programs with their school matter specialists and superior teachers in their own areas and feed them over the microwave radio beams to other places in the state; or generate their own programs for their particular area for open circuit TV broadcast best to fit the needs, schools, and homes of their own particular area.

This proposal also suggests facilities for inter-state connections for inter-exchange of special educatianal programs with other large area networks in being and forming. (One of these for 6 states north and west of Illinois, estimated and studied by a national professional organization, since Mr. Morris' study, at 30.5 cents per pupil /yr.)

All elementary and high schools and homes within 50 miles of these selected centers could view those ETV programs from either their local area, or, via this proposed network, the other centers, or universities in the state.

Thousands of student credit hours by ETV (20,000 in one university—or a 5-year experiment in a 38 school (K-H.S.) district with 18,000 students—or in a 3-year national experiment with almost 300,000 students involved —and hundreds of other examples) have proven that ETV students make as good or better grades than non-ETV for direct instruction in regular courses involving over 4 million school children in over 30 states, and 100,000 college students.

Instead of less jobs for teachers, Mr. Morris claims that more positions and better utilization of new competencies have been and are being created; and that higher salaries and better use of the specialties of more teachers will result.

It is claimed that microwave distribution of ground based ETV programs permits more diversity of quantity and programming with continued option of local control, at less cost for the application, than with other methods; such as, for example the airborne ETV transmissions from aeroplanes, now often in the news, where one can receive only that particular program that someone far away in another state may dictate.

State and local control diversities and coordination are very important and, it is contended, more economically enhanced with land based microwave interconnections between the schools, communities, and TV broadcast centers.

This report contends that for future countrywide expansion of the Airborne ETV principle for each 1 such lesson channel, there will be usurped or pre-empted 20 to 30 simultaneous other ground based independent school lesson 1 channel applications; and that school boards should better use school tax money for the better long pull non-restrictive ground based ETV systems described.

It is also contended that if one Airborne teacher per channel/lesson teaches the whole country, or excessively large area, then 20 or 30 other equally good teachers could not be teaching for their particular areas of the pre-empted allocations across the country.

Mr. Morris' proposal, and county-by-county study, suggests that the 2 channel interchange-ETV-distribution system between educational stations, universities, and colleges, and schools within 50 miles of the selected centers, could be installed for less than 30 cents per pupil per year (K through college) for 10 year payout. Also, that the savings alone in new school plants could be more than the cost of the system in less than 10 years.

8 Proposed off-ground broadcasting for undeveloped countries

ETV Program Distribution Study Illustrations

TAE-091860LMIB

Air Based + Land Based ETV-BC Stations-

Fig.1 - Land Based State Net - Illinois Proposed

Fig.2 - Air Based-State + National Groups " "

Fig.3 - Land Based " " " Nets " "

ASN-Alabama State Net : FSN-Florida State Net.

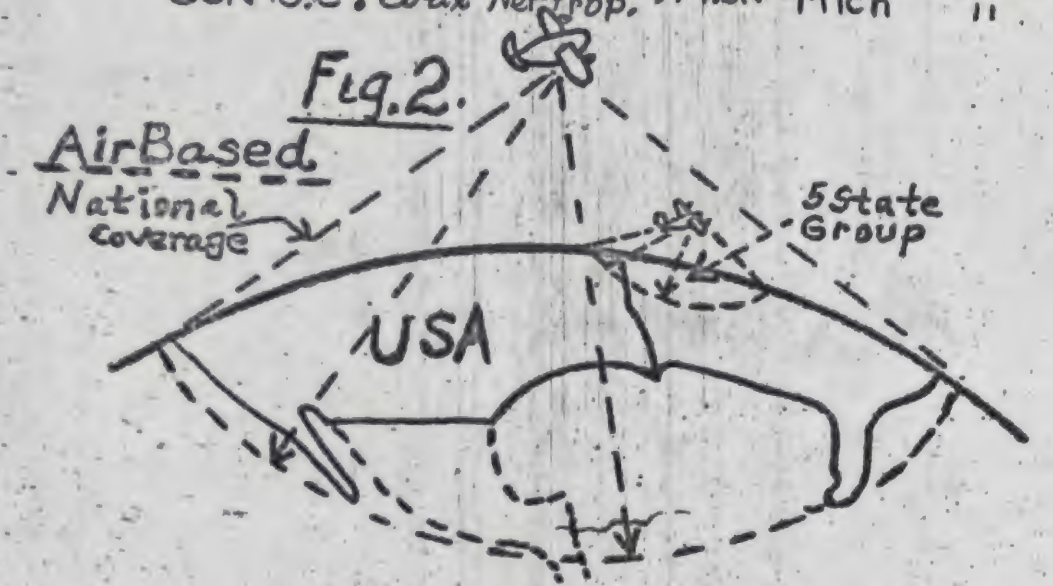
TSN-Texas " " : ISN-Ill. State Proposed "

6SNCN-"6 State North Central Network" " "

SREB-Southern Regional Education Board " "

Okla.-Oklahoma State : MSN-Maine State " "

SCN-S.C. Co-ax Net-Prop. : MISN-Mich " " "



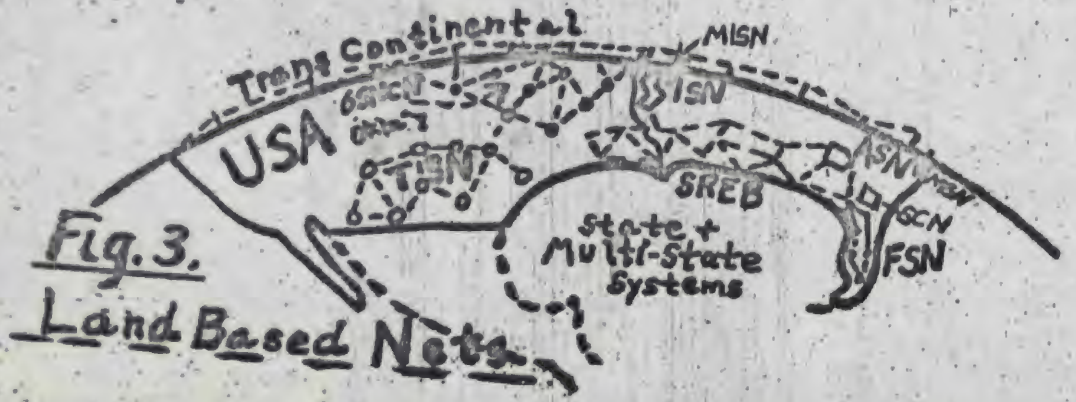
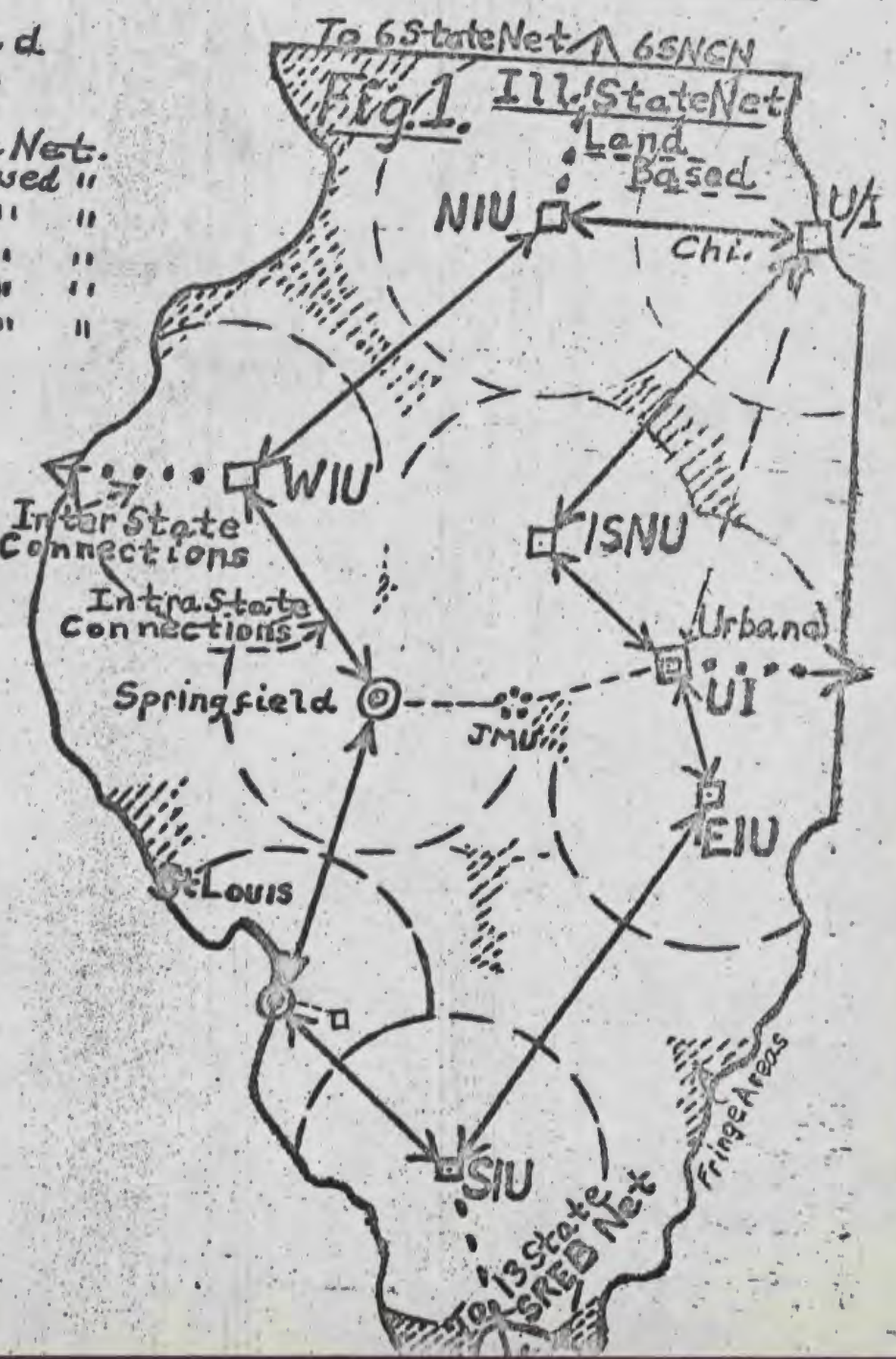


Fig.3.
Land Based Nets



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SOME INDICATIONS OF EDUCATIONAL ACTIVITIES, EFFORTS, AND INTERESTS TAE021866LM1-

1.Former univ. staff member; member, Dean Everitt's,Univ.of Ill. Articulation Adv. Committee; Designed/Spec.(1960)Comprehensive Elem. Sch. Prod. & Dist. ETV syste for CBE as pilot for expanding 4 million dollar sys:
2.Mbr. Eisenhower's Little White House Education Conferences; & Co. Comm.:
3.Two terms State Chairman, Ill. Citizens Educ. Council: Mbr. National Committee for the Support of Public Schools:
4.Mbr. two state committees to prepare recommendations for the Ill. Governor's School Problems Commission and State Legislature for a statewide educational communications & T.V. network:
5.Presentation of three independent proposals to the School Problems Commission for inter-government for inter-univ. inter-school systems state operations & educational systems communications network incl. rad. & T.V., Edp, in & out of school education:
6.Life member, National Education Assoc. and state PTA; IEA/NEA centennial citations:
7.Past vice-chairman, Tri County ETV Council and 9 years member of the executive committee:first ETV task comm. chr. Tri Co. Sch. Bd. Assoc, Adv. & Exec. Comm., 1954:
8.Now treasurer, member of exec. comm.(CAST)Chicago Area School TV, Inc.(1/4 milli budgets - 40 ETV Courses to enrolled schools housing 1/3 million students);
9.Past invited speaker to graduate seminar, Temple Univ., twice to Pennsylvania State Schoolmens Week at Univ. of Pa., National School Boards Assn., American Educational Research Assoc., Univ. of Ill., Northern Ill. Univ., Western Ill. Univ Ill. Educ. Assoc., De Paul Univ., Northwestern Univ., Rosary College, Teachers Institutes, etc.;
10.Two terms President, Leyden Assoc. of School Boards(Twp):
11.Six terms and now pres., Elmwood Park, Ill. #85 Board of Education;
12.Fifteen years member, advisory and exec. committee, term V. Chrm., of the Tri County Northern Div. of Ill. Assoc. of School Boards;
13.Member, Nation School Boards Assoc.: State Cooperating Committee "Advisory Committee on Education in Illinois":
14.Member, Exec. Education Coordinating Committee, and Educational Sub Committee, (EIA) Electronics Industries Association(Nat.):
15.Member, State ETV Advisory Committee, Ill. State Office of Public Instruction;
16.Consultations with school architects and school boards in several states on Technological Aids to Education:
17.Illinois Professional Engineer, Member Institute of Electrical and Electronics Engineers (international), Society of Motion Picture and TV Engineers, and other national professional communications and engineering organizations:
18.Participation committees Ill. Commission on Children and Youth,
19.Ed. and Scholarship Comm., Ill. Prof. Eng. Society, Steering Committee Ill. State Consortium study proposals on comprehensive specs. for Elem. Teacher Educati Programs, ETC
20.Member Ill. State Educational Telecommunications Advisory Council.
21.Proponent of much greater coordination and understandings and more common language between Education and Industry/Technology, on more comprehensive educational communications systems operational & R & D evaluation/cooperation.
22.First educational radio broadcasting experience, building and operating, at two universities starting 1926, same for commercial 1928: started Chr. Tri Co. Sch. Bds Assoc. ETV Comm. about 1954 and member since that time.,
23.Univ. of Ill. Master's Thesis work, Staff Member 1928-31; Sigma Xi, Epsilon Chi TV & Radio Eng. 1931-35; Asst. Res. Dir. Motorola Specialties & Communications Div 1940-45; Ch. Eng. Comm.& Elect. Trans. Div. & Systems Eng. Dept. 1945-54; Ch. Eng. Nat'l. Consulting Eng. Services 1950 to date; long participation in professional committee work, local to national level in Education & Communications Eng.

Lloyd P. Morris: 2947 N. 78th Ct., Elmwood Park, Ill. 60635: GL. 3-5781:B '67

Gentlemen:

Here is your copy of the Kiplinger Washington Letter. Please pass on to the next person as soon as possible.

Thank You.

	RECEIVED	FORWARDED
Bob Batts Schaumburg	10/21/69	10/21/69
Allen Hoube Schaumburg	10/23/69	10/27/69
Fred Hamm Schaumburg	10/27-69	10/27-69
Lloyd Morris Augusta	✓	✓
Charlotte Bahoric C & E Library	10/27	10/27
Henry Magnuski 605 Spring Road Glenview, Ill.60025		

THE KIPLINGER WASHINGTON LETTER

Circulated privately to businessmen

THE KIPLINGER WASHINGTON EDITORS

1729 H St., N.W., Washington, D.C. 20006

Dear Sir: Washington, Oct. 17, 1969.

Your taxes will be going up to pay for the new social benefits that are sure to be approved by Congress in the early part of next year.

Both Nixon and Congress are for these benefits. They disagree only on the size and timing...matters that will be adjusted later on.

You don't hear much about the tax angles of these programs... the benefits get most of the emphasis. But you will foot the bill.

Take unemployment compensation: Congress plans to expand it to make nearly every employe eligible for payments when out of work. Very small firms are now exempt, plus salesmen, food processors, etc.

The unemployment tax will be raised...it's an "employers' tax." The maximum now is $12 a year for each worker who earns $3000 or more. This is going up to $21 on a new wage base of $4200...effective in '70. Then in 1974...another jump to $24 on a still higher wage base, $4800. That's just the federal tax. State unemployment taxes will go up, too.

Or take social security benefits: Congress will sweeten those, effective next January 1, we figure. Democrats are talking December 1, but this isn't likely to carry. Anyway, an increase of around 12%-13% in social security payments to pensioners. They won't actually get it until sometime next spring, but it will be made retroactive to January.

Not sure how much taxes will be raised on employers & employes. Perhaps no tax increase in '70, for it may not be absolutely necessary. But it's a near-certain bet that in '71 either the tax rate will go up or wage base will be boosted, or both. Anyway, you will ante up more.

Then there's Nixon's new welfare plan: He wants to put a floor of $1600 a year under poor families...guarantee them that minimum income regardless of what they get now. In some states they get less than this.

The cost...about 4 billions a year. You won't be taxed DIRECTLY for this as you are for social security and unemployment compensation... but you will have to pay for it in federal taxes if Congress goes along. And Congress will pass something like it...possibly even more expensive.

Naturally, these plans are full of politics. Note, for instance, that they are being cranked up for next year, just before the elections.

A cost-of-living raise in social security now is being discussed because Nixon suggested it...automatic increases with the cost of living. Yes, but that means automatic increases in TAXES to keep social security from going broke. Besides, it's much better politics for Congress itself to raise social benefits in election years. So, no automatic boosts.

People will have more money to spend when these programs pass. And they will spend it. Meanwhile, major changes in some other tax laws will discourage BUSINESS spending...for growth, expansion, production. Hence, a crisscross in gov't policy. And, longer range...inflationary.

Arthur Burns to Federal Reserve Bd...succeeding Wm. McC. Martin: He takes over in Feb., a critical time, just when the FRB credit policy will bear heavily on whether the business slowdown turns into recession. Probably he will plug easier money then...a relaxing of interest rates.

Treasury Secretary Kennedy may be quitting within next 6 months. Feels he's wrong man for the job...too open, not enough political savvy.

Charls Walker, now Under Secretary, is a good bet to take over.

Haynsworth...Supreme Court: He was a cinch to win a month ago, but now he trails. A handful of Republican senators are still undecided, and Nixon thinks he can swing most of them to Haynsworth in coming weeks. If so, Haynsworth will win. If not, beaten. Vote will be VERY close. And any FURTHER disclosures on Haynsworth will certainly finish him off.

Crackdown on gambling syndicates...Senate will vote to let gov't move in on state gambling rings that are protected by corrupt politicians. But the House is less eager, so may drag its feet until sometime in '70.

Immunity for criminals to get them to testify will be permitted, but limited so they can be prosecuted later if other evidence is dug up.

Mailing of smut to youngsters will be curbed...new law coming.

Repeal the Robinson-Patman Act that protects smalls from bigs? Pressure is growing...mainly from bigs...on grounds that it's not needed as much now as when it first passed in the mid-30's, during Depression.

But it will not be repealed. Congress wouldn't even think of it. In fact, some of the members want to have even more vigorous enforcement. Federal Trade will begin bringing more Robinson-Patman price cases soon.

The 1970 census forms won't be changed...many people will resent the "personal" questions on housing, bathrooms, jobs, nationality, etc. Gov't has a new booklet that explains WHY these questions are included, who sees the answers, what is done with them. Ask the Sup't of Documents, Gov't Printing Off., Wash., D.C. 20402, for "Uncle Sam Counts." It's 35¢.

Democrats are feuding among themselves. Many in Congress think that the party is headed up a blind alley if it follows the leadership of its national officials...who want to emphasize liberal policies.

So far the bitterness has not been aired publicly, but it will be in the next few months, because feelings are too strong to be muffled.

Sen. Harris, party chairman, has ignored the internal complaints and seems determined to remake the Democrats into a "party of youth."

Sen. McGovern the same...he's one of Harris' hand-picked aides.

Together they are trying to unify the party under their banner, but few except like-minded young liberals show signs of getting in line.

They now control the party machinery...they and others like them. Hence, a swing to the left...away from the moderates and conservatives, who grumble that the Democrats will soon represent a "gang of dissidents."

The old-line party wheel-horses are angry and won't kick in money either to pay off past debts or get geared up for the coming elections.

This chills Democrats who have to run next year, and they plan to raise their own campaign funds. Also to avoid tying up with policies of the national party organization where those policies are not popular. In the Deep South and in parts of the Midwest, Southwest and Far West, the new direction is "bad." But party leaders seem willing to go ahead.

Better start thinking about Christmas mail...the crush is coming. The PO plans a barrage of ads begging people to mail early, use ZIP codes, even to type return addresses..."no longer bad etiquette," says the PO.

On your business mail, put it out early...much earlier than usual, if possible. It's good insurance against delays as Christmas approaches.

Note deadlines on parcels...to distant states, mail BEFORE Dec. 1. Nearby states and local delivery, before Dec. 13. And on greeting cards, distant states before Dec. 10. Nearby states and local, before Dec. 15. To be sure of overseas delivery, you will have to allow even more time.

Freight rates, up again...rails first, perhaps in a month or so. Originally asked for 6% but probably will have to settle for a bit less.

Trucks, rate boosts may come even before labor pacts in spring.

Air freight, up 5% in '70...pending legislation will add a tax. It's part of the new airport bill now under consideration in Congress.

Note that aerospace firms are in a dry spell...hurt by cutbacks in space and military contracts and lagging orders for jets by airlines. Important from an investment standpoint and to the communities dependent to a great extent on this type of activity...defense & civilian contracts.

These companies are trimming their budgets, affecting suppliers and subcontractors...a widening circle of impact over next few months.

Workers are being laid off...and this will continue to year end. (Employers in other lines might want to pick up some of these workers... many of them highly skilled. Get in touch with aerospace firms directly.)

Industry men see the slowdown as temporary, running into 1970... and then a pick-up, with fresh orders from defense, space and airlines.

Revaluation of the German mark is imminent...boost of 7%-8%... official recognition of what already has been happening unofficially.

Won't be enough to calm money jitters for more than a few months. Germany still will outcompete most others, making the mark surge again.

Practical effect here...small price rise in most German goods.

Questions about franchising continue to roll in...readers asking about the good and the bad, about the potential of this-or-that business. In turn, we asked the experts, and here is a summary of what they say:

There's no get-rich-quick magic about franchising...work is hard, and owners sometimes struggle for years just to recoup initial investment. And a few fail, although guidance by franchisors keeps these to minimum.

Competition is rough...from other franchisees and independents. Be especially wary if you're thinking about a food line...or a motel.

You won't be entirely your own boss. Franchisor has a stake too, he is kind of a "silent partner," limiting what you can and can not do.

On plus side, franchising can pay well if you're cut out for it. And much growth is still ahead. In the 70's, we expect to see franchises in fields like real estate, advertising and finance...service-oriented.

Take plenty of time to get the facts before making a commitment. Talk with other franchisees of the same firm. Check financial statements of the franchisor to see whether his growth is real or just a reflection of invested capital taken in from franchisees. Be leery of the new firms fronted by nationally known people...many haven't yet shown staying power.

Your own personal traits will count most...tact, stamina, drive, ability to lead. But most of all, a willingness to work, work, work.

If you are in a mood to buy, take the time to shop & compare. This applies to almost everything...for home or personal use.

What's happening is this: Retail sales are slow. Not "bad"... most stores still expect to sell more goods this year than last year. But in recent months the gains have been shrinking, and when the volume is adjusted for price increases, the sales are running just about even.

Inventories are threatening to pile up, for stores bought ahead with the expectation that sales would be better than they actually are. And with the cost of credit so high, merchants can't afford to let things stay on the shelf in the hope that customers will come in on their own.

So prices are being cut, via "anniversary" and "birthday" sales, special events, promotions. Not just here & there, but often store-wide.

Advertising appeals will focus more on "value"...in all media.

What makes this so unusual is the timing. Fall selling season is usually strong enough to stand on its own without extra enticements to get people to buy. It's a busy time for all kinds of clothing... men, women and children. Plus new-model appliances, TV, new styling in furniture, carpets, housewares, china, silver. It's NOT the season when shoppers customarily look for bargains or the big clearance sales.

Competition among most stores is the hottest in many a season.

Good news for consumers but a caution sign for most businessmen.

Retailers will be ordering less, except for the very fast movers.

They will demand quick delivery, which means that manufacturers face the loss of orders unless they are willing to carry larger stocks.

And store men will press for special concessions, trying to put part of the burden of price cutting on the shoulders of their suppliers.

It all adds to the growing evidence that business is slowing down. Signs of this already have shown up in a trimming of many company plans to invest in plant & equipment, an increase in unemployment, a slight dip in factory output and a sharp decline in single-family housing starts.

Now consumers are joining in, holding back some on their buying, as indicated in retail sales volume. Many are balking at high prices, others are more uncertain about the future...for the economy as a whole and their personal prospects. This promises only a just-fair Christmas.

How long the slowdown? Through mid-1970 is the consensus now. Total activity is likely to rise a bit each quarter between now and then, but REAL growth after allowing for rising prices may actually inch down. Unemployment will be higher, incomes not up as much...a general softening. Suggests a belt-tightening by most companies, a careful review of costs, inventory buying, pricing and marketing practices, also hiring policies. But NOT a retrenchment or a retreat from any long-range investment plans based on future growth. The slowdown is merely a pause in the trend.

And what about inflation? It will taper off, too, but slowly. TWO years hence the rate may be down to 2½% from 5%-plus now...MAY be.

Keep this in mind also in your business and personal planning.

Yours very truly,

Oct. 17, 1969

THE KIPLINGER WASHINGTON EDITORS

Austen Kiplinger

* Dr. Drew, Dr. Moore and Mr. Kriegsman have been invited to join Mr. Whitehead in the initial 45-minute meeting with industry people -- prior to their meeting with Domsat Working Group

DOMESTIC SATELLITE MEETINGS
(with industry)

Friday, October 24, 1969

* 10:00 a.m. AT&T — Rm. 730, 1800 G St., N.W.

Ed Crosland, Vice President, Federal Relations
Dean Gillete
Ken McKay, Vice President for Engineering
William Stump
Charles McWhorter, Executive Assistant

10:30 a.m. All will be joined by Domsat Working Group

Tuesday, November 4, 1969

* 10:00 a.m. COMSAT — Rm. 110

Joseph Charyk, President
Gen. James McCormack, Chairman

10:45 a.m. All will be joined by Domsat Working Group and others from Comsat — Rm. 208

* 2:00 p.m. COLUMBIA BROADCASTING SYSTEM — Rm. 110

William Lodge, Vice President for Affiliate Relations and Networking
Dr. David Blank, Vice President for Economics and Research

2:45 p.m. All will be joined by Domsat Working Group — Rm. 272

* 4:00 p.m. MAXIMUM SERVICE TELECASTERS — Rm. 110

Roy Easley, Assistant Executive Director
Lester Lindow, Executive Director
Howard Head, Engineering Counsel
Henry Goldberg, one of their legal counsel (Covington & Burling)

No meeting with Domsat Working Group

Wednesday, November 5, 1969

* 10:00 a.m. COMMUNICATIONS WORKERS OF AMERICA Rm. 110

Joseph Beirne, President
John Morgan, Administrative Assistant
George Miller

10:45 a.m. All will be joined by Domsat Working Group Rm. 272

Thursday, November 6, 1969

UNIVERSITY COMPUTING COMPANY

* 2:00 p.m. Martin Hoffman, Assistant General Counsel Rm. 110
Seymour Joffee
David Foster
Ed Berg

2:45 p.m. All will be joined by Domsat Working Group Rm. 272

Friday, November 7, 1969

2:00 p.m. Windup meeting of the Domsat Working Group Rm. 272

David Acheson
Dr. James Armstrong
Donald Baker
Lucius Battle
Richard Beam
Dean Burch
Robert Button
Asher Ende
Jerome Freibaum
George Haydon
Dr. Richard Marsten
Dr. Boyd Nelson
Robert Powers
Dr. Walter Radius
Siegfried Reiger
John Richardson
Abbott Roseman
Gen. George Sampson
Robert Scherr
Wilbur Serwat
Willis Shapley
Bernard Strassburg
Dr. Myron Tribus
William Watkins

Meetings with Industry on Domestic Satellite Communications

	Date of Meeting	Representatives	Telephone Number
AT&T	10/24/69 10:00 a.m.	Ed Crosland, V.P., Federal Relations, N.Y. 195 Broadway, NYC 10007 Dean Gillete Ken McKay, V.P. for Engineering, N.Y. 195 Broadway, NYC 10007 William Stump Charles McWhorter, Executive Assistant, N.Y. Working Group representatives	(212) 393-1000 (212) 393-4459
COMSAT	11/4/69 10:00 a.m.	General James McCormack, Chairman Joseph Charyk, President 950 L'Enfant Plaza, Wash., D. C. 20024 Working Group representatives	(202) 554-6020
Columbia Broadcasting System	11/4/69 2:00 p.m.	Dr. David Blank, V.P. for Economics and Research William Lodge, V.P. for Affiliate Relations and Networking 51 West 52nd Street, NYC 10019 Working Group representatives	(212) 765-4321, x 3561 (212) 765-4321, x 3541
Maximum Service Telecasters	11/4/69 4:00 p.m.	Roy Easley, Asst. Exec. Director Lester Lindow, Exec, Director Howard Head, Engineering Counsel Henry Goldberg, one of their legal counsel (Covington and Burling) 1735 DeSales Street, N.W., Wash., D.C.	(202) DI7-5412

Meetings with Industry on Domestic Satellite Communications

	Date of Meeting	Representatives	Telephone Number
Communication Workers of America	11/5/69 10:00 a.m.	Joseph Beirne, President John Morgan, Administrative Assistant George Miller 1925 K Street, N. W., Wash., D. C. Working Group representatives	(202) FE7-7711
University Computing Co.	11/6/69 2:00 p.m.	Martin Hoffman, Asst. General Counsel 1300 Frito-Lay Tower, Dallas, Tex. 75235 Seymour Joffee Ed Berg David Foster Working Group representatives	(214) 350-1211
Windup meeting	11/7/69 2:00 p.m.	Domsat Satellite Working Group	

Mr. David Acheson

Mr. William Anders — 3300
National Aeronautics and Space Council
New Executive Office Building
Washington, D. C. 20502

Dr. James Armstrong — (177) 7442 — 961-7442
Post Office Department
Room 7119 New Post Office Bldg.
Washington, D. C.

Mr. Donald Baker — (187) 2411
Chief of Evaluation Section
Antitrust Division
Room 3115 Justice Department
10th and Constitution Avenue, N. W.
Washington, D. C.

Mr. Richard Beam — (13) 34313 — 963-4313
Director, Office of Telecommunications
Department of Transportation
Room 834 West
800 Independence Avenue, S. W.
Washington, D. C. 20590

Dr. Russell Drew — (103) 3570 — 395-3570
Office of Science and Technology
Room 285 - EOB
Washington, D. C.

Mr. Asher Ende

Mr. Peter Flanigan — 2361
Assistant to the President
White House
Washington, D. C.

Mr. Richard Gabel

Mr. Larry Gatterer
Department of Commerce

Mr. Walter Hinchman
Room 493 - EOB
Washington, D. C.

Chairman Rosel Hyde — 632-6336
Federal Communications Commission
Room 814
1919 M Street, N. W.
Washington, D. C. 20554

Mr. Will Kriegsman

Dr. Richard Marsten — (13) 20888 — 962-0888
National Aeronautics and Space Administration
Room 5081 - FOB 6
400 Maryland Avenue, S.W.
Washington, D. C.

Dr. Thomas Moore — (103) 5080 — 395-5080
Council of Economic Advisers
Room 327 EOB
Washington, D. C.

Mr. William Morrill — (103) 4684 — 395-4684
Bureau of the Budget
Room 10009 New EOB
Washington, D. C.

Col. Ward Olsson — 5190 — 395-5190
Office of Telecommunications Management
Room 750
1800 G Street, N. W.
Washington, D. C.

Mr. Robert Powers

Dr. Walter A. Radius — (13) 24583 — 962-4583
National Aeronautics and Space Administration
Room 7101 - FOB 6
400 Maryland Avenue, S. W.
Washington, D. C.

Mr. John Richardson

Mr. Jonathan Rose — 2514
Administrative Assistant
White House
Washington, D. C.

Mr. Robert Scherr — (177) 7472 — 961-7472
Room 4226 New Post Office Building
12th and Pennsylvania Avenue, N. W.
Washington, D. C.

Mr. Wilbur Serwat — (177) 8687 — 961-8687
Post Office Department
Room 306 Safeway Building
Washington, D. C.

Mr. Willis Shapley (13) 24715 962-4715
Associate Deputy Administrator
National Aeronautics and Space Administration
Room 7137 - FOB 6
400 Maryland Avenue, S. W.
Washington, D. C.

Mr. Bernard Strassburg 632-6910
Federal Communications Commission
Room 514
1919 M Street, N. W.
Washington, D. C.

Dr. Myron Tribus (189) 3111
Asst. Secy. of Commerce for
Science and Technology
Room 5884 Commerce Dept.
14th and Constitution Ave., N. W.
Washington, D. C.

Mr. William Watkins 632-7060
Federal Communications Commission
Room 714
1919 M Street, N. W.
Washington, D. C.

THE WHITE HOUSE

WASHINGTON

October 31, 1969

Memorandum for the Domestic Satellite
Working Group Members

The following meetings have been scheduled in Room 272, Executive Office Building. Would you please let my office know who will be attending.

Tuesday, November 4

10:45 a.m.	COMSAT
2:45 p.m.	Columbia Broadcasting System

Wednesday, November 5

10:45 a.m.	Communication Workers of America
~~2:45 p.m.~~	~~University Computing Company~~

Thursday, November 6

~~2:45 pm~~ University Computing Company
~~2:00 p.m.~~ Working group meeting to wind up ~~the report~~

Friday, Nov. 7

2:00 pm. Working Group meeting to wind up report.

Clay T. Whitehead
Staff Assistant

Attached is the list
of those who
responded to your
August 19 letter.

(International Brotherhood
(of Electrical Workers
(and
(National Assoc. of
(Broadcasters did not
(send in a reply.

Those unmarked sent in
statements without your
request.

Leonard H. Goldenson
President
American Broadcasting Companies, Inc.
1330 Avenue of the Americas
New York, N. Y. 10019

Julian Goodman
President
National Broadcasting Company, Inc.
Thirty Rockefeller Plaza
New York, N. Y. 10020

ITT World Communications, Inc.
J. R. McNitt (James)
President
67 Broad Street
New York, N. y. 10004

Charles J. Wyly, Jr.
President
University Computing Company
1300 Frito-Lay Tower
Dallas, Texas 75235

Joseph A. Beirne
President
Communications Workers of America
1925 K Street, N. W.
Washington, D. C. 20006

George D. Butler
President
Electronic Industries Association
2001 Eye Street, N. W.
Washington, D. C. 20006

Richard D. DeLauer
Vice President & General Manager
TRW Systems Group, TRW Inc.
One Space Park
Redondo Beach, California 90278

Edward B. Crosland
Vice President
American Telephone and Telegraph Company
195 Broadway
New York, New York 10007

S. G. Lutz
Chief Scientist
Hughes Research Laboratories
3011 Malibu Canyon Road
Malibu, California

T. Vincent Learson (President - ?)
International Business Machines
Corporation
Armonk, New York 10504

L. B. Davis
Vice President
General Electric Company
777 Fourteenth Street, N. W.
Washington, D. C. 20005

James J. Clerkin, Jr.
Executive Vice President-Telephon
Operations
General Telephone & Electronics
Corporation
730 Third Avenue
New York N. Y. 10017

Earl D. Hilburn
Executive Vice President
Western Union
60 Hudson Street
New York, N. Y. 10013

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

Frank W. Norwood
Executive Secretary
Joint Council on Educational
Telecommunications
1126 Sixteenth Street, N. W.
Washington, D. C. 20036

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

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

Howard R. Hawkins
President
X RCA Global Communications, Inc.
60 Broad Street
New York. N.Y. 10004

E. A. Gallagher
X President
Western Union International, Inc.
26 Broadway
New York, N.Y. 10004

Frank Stanton
X President
Columbia Broadcasting System, Inc.
51 West 52 Street
New York, N.Y. 10019

The Ford Foundation
McGeorge Bundy
X President
320 East 43rd Street
New York, N. Y. 10017

Richard S. Mann
President
The RME Group of Communocations
Companies
100 East Broad Street (Suite 1302)
Columbus, Ohio 43215

M. G. Robertson
President
Christian Broadcasting Network, Inc.
P. O. Box 111
1318 Spratley Street
Portsmouth, Va. 23705

National Cable Television Association
Inc.
X Frederick W. Ford
President
1634 Eye Street, N. W.
Washington, D.C. 20006

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

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

NATIONAL CABLE TELEVISION ASSOCIATION
INCORPORATED
1634 EYE STREET, N. W. WASHINGTON, D. C. 20006

FREDERICK W. FORD
PRESIDENT

(202) 347-3440

Donnat
(contacts
interest)

October 24, 1969

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

Dear General McCormack:

The New York Times for October 19 carried an article by Jack Gould in which he states that you will probably discuss with the presidents of the three networks the details of a domestic satellite plan for use by television. This appears to have been brought to a head by Dr. Frank Stanton's recent speech making such a proposal.

During our convention in San Francisco last June, I participated in a panel and proposed six channels of domestic satellite communications for use by CATV. I have enclosed a copy of my remarks.

Your staff was kind enough to cooperate with a presentation on this subject at the convention, and I am hopeful that any discussion you may have with the three networks does not in any way foreclose the full development of the program with which we are pressing forward.

We are anxious that the cable television industry be given an opportunity to participate in any plans

developed. We would, therefore, appreciate an opportunity to be completely informed on the results of any meetings with the networks.

Sincerely,

Frederick W. Ford

Frederick W. Ford
President

Enclosure

cc: Mr. Leonard H. Goldenson
Dr. Frank Stanton
Mr. Robert W. Sarnoff
Dr. Clay T. Whitehead

FOR RELEASE ON DELIVERY

REMARKS OF

FREDERICK W. FORD, PRESIDENT
NATIONAL CABLE TELEVISION ASSOCIATION, INC.

BEFORE THE
GENERAL MANAGEMENT AND ENGINEERING SESSION
OF THE
EIGHTEENTH ANNUAL CONVENTION
OF THE
NATIONAL CABLE TELEVISION ASSOCIATION, INC.

SAN FRANCISCO HILTON
SAN FRANCISCO, CALIFORNIA

JUNE 23, 1969

PANEL ON
CATV VIA SATELLITE

I will make a very important proposal during the course of my remarks today. This proposal is for the use of space satellites for the purpose of transporting non-entertainment programs on an interconnected basis to CATV systems throughout the country. This proposal is in complete compliance with the joint proposals of the staffs of the National Cable Television Association and the National Association of Broadcasters. Those proposals provide that there shall be no interconnection for entertainment type programs.

Representatives of the Communications Satellite Corporation have accepted our invitation to come here today to hear this proposal, and to help us understand the technical and economic problems involved no matter what the information transported may be.

Space communications via satellites has been a fact since the early bird satellite began relaying signals from space in April 1965. This date marked the beginning of a new era in communications.

The Communications Satellite Corporation (COMSAT) is now entering its fifth year of satellite operation, and in this short span of time we have seen this technology leap ahead to the point where the fourth generation satellite is about to be launched. It will provide a five-fold increase in circuit capacity.

These are our questions: How does the satellite communications technology relate to the CATV industry? Is there a future for CATV

in this exploding communications technology?

I began wrestling with these questions some years ago. At our Financial Seminar in New York in February of 1966 I stated, "To the extent that the Commission obtains authority and may require the industry to exhibit an interest in the origination of programming or limit the bringing in of distant independent signals it may force the CATV industry perhaps to a nationwide cable network." Later that same year, at our Annual Convention in Miami, Florida, I urged each of you, if it were at all technically and economically feasible, to immidiately institute on one channel programs to serve the needs, desires and interests of the community of which you are a part. It now appears that each of these predictions for our industry may, in fact, be realized.

The answers to these questions are of concern to every CATV operator and to all potential investors in this industry. We are proposing today that the CATV industry take immediate advantage of this new technology -- that the CATV industry become involved in the satelite technology by participating with the existing framework of authorizations. The communications Satelite Corporation is presently authorized to be a carrier's carrier. In other words, it is authorized to receive and deliver signals from other authorized carriers. We are proposing that the CATV industry become one of the prime users of the satellite capability in order to bring more program options and a diversity of service to the television homes of the United States. We are proposing that we contract for part of the domestic satellite service to the extent that it would provide the backbone of a trunking system that would eventually interconnect several million CATV subscribers to provide a selection of program options that only CATV is designed to fulfill.

The NCTA staff began working on this project several months ago. It was our aim to develop a method whereby a CATV system could be built and operated profitably in the major television markets of the Nation. The concept would be to provide subscribers all local signals plus something else. The "something else" would not likely be a distant signal -- based on a presumption that we would be held to the rules of the Second Report and Order.

The "something else" should be a package of programming available only on CATV that would in the aggregate, be interesting enough to the potential television viewer that he would buy the service on the basis of the appeal of one or more of the program options in the total package. Perhaps no one program channel would be appealing

enough by itself to stimulate the homeowner to buy, but the aggregate appeal of several channels -- providing a diversity of minority interests, that would be largely unavailable on broadcast stations, would be enough to stimulate a television homeowner to subscribe to the system.

This, then, is a proposal that will make major markets a viable CATV enterprise and the technology exists today to put the programming package and the interconnect system together, and make subscription to systems in smaller markets more attractive than ever.

We are proposing a service of 6 channels -- 6 additional channels of programming that would be designed primarily for CATV subscribers -- that would be available only as a package of programming -- that is, a system would not be able to pick and choose a channel or two of this service, but would make it all available to his subscribers. This is a necessary caveat on the proposal that the economics of the package, the monthly cost to the subscriber can be kept at a nominal level. The interconnection is necessary because of the live coverage of much of the programming that is contemplated and because of the perishability of programming that covers news, current events and public issues.

I would like to draw heavily upon the recommendations of the Carnegie Commission for the development of a national television system that will better serve the public and cultural needs of our people.

The cable industry can better serve the goals of this Commission because of the additional dimension of time availability. The cable technology offers much greater programming flexibility than broadcast television because of the extensive excess channel capacity of cable.

A broadcaster must appeal to a mass audience with almost every program he presents. This is an inherent flaw in the present broadcast system -- since it forces the broadcast program to appeal to a mass audience -- or the greatest common denominator of interests among the people. Minority interests are subordinated to the interests of the majority.

But this need not be true in a system that has excess channel capacity. There are literally hundreds of activities that people are interested in enjoying, or learning about, or in teaching others. A service with excess channel capacity can devote time at leisure to exploring new or different subject matter such as new science, mathematics, religion, discussion of public issues, education, and so on, almost without limit.

To begin with, we propose to make two of these 6 channels available on a full-time basis to the Corporation for Public Broadcasting -- to be used to fulfill the original intent of the Carnegie Commission. Their stated intent was to program a public television channel directed toward general public and cultural interests and program in addition, instructional television dealing primarily with formal education.

The Corporation for Public Broadcasting could now fulfill the promise held forth in the Carnegie Report by providing a public channel, that we would interconnect to several million CATV homes and the public would be better served with programming that would be free from the constraints of commercial television; the doors could be opened to greater expression and cultural richness; we could be exposed to new domains of learning, emotions, skills, human expressiveness, and physical phenomena that might otherwise be outside our ken.

The availability of a nationwide interconnect would spur both Congress and the Corporation for Public Broadcasting to an early implementation of the Commission's goals on this subject.

The other channel to be made available for CPB would be dedicated to full-time use in instructional television.

It is ironic that in this Nation so well endowed with natural resources such as oil, land, timber, minerals and so forth, that we have overlooked, or at least slighted, that most important and most basic of any Nation's natural resources, the people.

Every new invention, concept, innovation, philosophy of analysis has its roots in the educational development of the mind that brought it forth. How obvious it should be then, that every mind be developed to the maximum potential through exposure to as much education, formal or otherwise, that it can assimilate.

Education is basically nothing more than information transfer. One generation transfers information to the next. Naturally the more efficient the information transfer process becomes, the more efficient and better is the education al system.

Transfer of information by speaking to one another (aural transmission) has been with us for thousands of years -- but it is not a

particularly efficient way to transfer information. The recipient has to accept the pace of the speaker.

Reading is a more efficient information transfer mechanism. One can read at his own pace which can often be many times faster than speaking. Speedreaders sometimes read as fast as 3,000 words per minute. Even so, the English language is not very well constructed to maximize information transfer -- it is very redundant and often ambiguous.

One glance at a picture and your mind, through your eyes, will assimilate more information than can normally be transferred in several pages of English text. There can be a lot of information in a picture -- and it can be transferred very rapidly.

When one realizes that in the television system we change the picture 30 times a second we have the capability to transfer information at a truly fantastic rate.

We, therefore, have the technical capability to educate at fantastic rates, provided we use the medium correctly. One channel devoted to instructional television can help solve the problem of getting formal education course exposure to the many persons and families who otherwise would not have the opportunity to gain such an education.

This channel should be programmed with a set of common denominator program courses such that the viewer could matriculate in college level education almost entirely via television. The home-viewer should be able to take all courses that would lead to a baccalaureate degree in, for example, liberal arts, or general education.

The typical degree work would require 120 credit hours; about 15 credit hours per semester. Thus an 18-hour daily schedule maintained from 6:00 a. m. until midnight would allow time for all the course work for all the courses for each of the four years to be presented twice per week. If the student missed the first presentation he could keep on schedule by viewing the second showing which would be programmed at a different hour the following day. The summer months of May through September would be fully available for special or vocational instruction.

The third channel would be a full-time, 24-hour weather service. There is a need for good weather information to be available at all

times, rather than just at the times the broadcast stations present their weather summaries. We, as individuals, cannot always program our time so that we are available to watch the local broadcaster or network weathercaster present his summary. We need a channel of this kind of service that would be available at any time we wanted to be brought up to date on the latest weather.

Everyone is always interested in the weather -- and as mobile as our people have become we find ourselves interested in the weather back home -- or the weather at the vacation spot we're going to next week -- and so forth.

We propose a professional group of meterologists that would put together a network quality weather summary, devoting about 10 to 15 minutes per time zone, thus covering the entire United States in an hour or less. The program would then be repeated and updated as necessary to keep the weather information as current as possible.

A centrally located service of this sort could use satellite weather pictures to best advantage. The weather stations across the Nation also provide video radar data that could be used to better display local weather movements.

Commercial and private pilots have long had available to them a continual broadcast weather service, broadcast from several hundred stations throughout the country. The Environmental Sciences Service Administration (ESSA) has recently inaugurated a series of coastal VHF broadcast stations that repeat weather information for marine use. There is no reason that the general public should be denied a similar service that would be designed to meet the needs and interests of the general public. Commercial broadcast stations obviously cannot dedicate their channel to full-time weather such as this, but the excess capacity of the cable technology makes it entirely practicable and desirable.

A weather channel such as this would allow everyone to follow the important weather movements that affect large sectors of the country. In the winter time, the weather service could be augmented with special reports on skiing and snow condition reports at the Nation's ski resorts. In the summer time, special advisories on beach and coastal weather would be required. Aviators and marine operators might even find themselves viewing such a channel for background information on weather movements prior to their departures.

The fourth channel would be made up of medical and health information of interest to the general public, and special programming for the medical and hospital professionals. It is becoming increasingly obvious that a serious doctor shortage is developing in this Nation -- and there is no short term solution to this problem on the horizon. This creates the need for dissemination of health and medical information to the family unit. The more familiar the family unit is with proper medical care the less drain on the doctors time.

Part of the problem is the distribution of the doctors that are currently available. The Sunday, June 15 edition of the Baltimore Sun reported, for example, that in the inner city there is one doctor for every 6,600 people. The national average is critical enough -- and that is one doctor for every 1,000 persons. The lack of available professional medical personnel in such city core areas means interminable waiting periods in doctors' offices, and in hospital corridors. Discouraged by these obstacles to medical care the poor often do without. A national medical service channel could do much to lighten the doctors load by informing the family unit on how to best treat minor medical problems -- on how to distinguish between a minor or major medical problem and so forth.

On top of all of these demands on the doctors time, many states are now requiring the doctor to maintain continuing education credits in order to keep his license current. The problem is that most doctors work so hard during the day and night it is hard to schedule time for formal course work.

To make this continuing education chore somewhat easier, the doctors in the Washington, D. C. area, for example, are participating in an experiment designed to further their medical education with the least possible disruption. The local educational television station broadcasts instructional material in scrambled form during the late evening hours and the doctor's sets are equipped with an unscrambling device so they may view the program. But there are many problems associated with the scrambling process. Special sets are required to pickup the extremely low frequency heart sounds, for example. The excess capacity of the cable technology could do this job more easily and with existing receiving equipment since we could augment the video channel with high fidelity wideband FM for audio.

The cable technology has more time options available to it also and we are not constrained to broadcast only in the late evening hours. Many repeat plays could be made of each doctors or nurses instructional

program to allow the individual to program his or her own time more conveniently.

The fifth channel is to be devoted to full-time coverage of congressional "Capitol Hill" activities. The basic ingredient to a well functioning democratic society is an informed electorate -- the people must know and have a right to know about all the congressional activities in which their elected representatives are involved. Complete and live coverage of congressional activities, important committee hearings and discussions should not be denied the voting public. Broadcast stations and networks must necessarily edit all congressional coverage to the constraints of their limited time news programs. A cable television channel completely dedicated to this kind of coverage can carry live and/or via tape replay all of the important congressional floor discussions and committee hearings. In this manner, the viewer becomes his own editor, and does not have to rely upon the network or the broadcast station to edit the material to what is usually on a capsul report of the event

On some days when Congress is particularly active there may be as many as 10-15 concurrent committee hearings in process. To the extent feasible such hearings should be made available to that part of the public that is directly involved in the legislation under consideration. For the most part, material of this kind would be of minority interest -- but the minority group affected by such legislative activities would find such proceedings of extremely high value -- the overall social and political value of such a public congressional coverage channel is obvious. The information disseminated would be an essential element of an informed and modern participatory democracy.

Besides the live coverage such a channel could devote much time to video tape replays of hearings and events that could not be covered live because of a more important event that was being presented live. Early morning and evening hours would be programmed with such material and even replays of some of the more important congressional activities. Such a channel would provide a nationwide forum for individual congressional discussion of critical legislation.

The costs of programming such a channel would not be as great as might be expected since the expensive element of editing content down to a few minutes of newscast time, as is done by the networks and the broadcasters, would not be required. It would cost less to present much of this kind of material live. Even so considerable staff talent

would be required to man the technical crews necessary to assure program viewability and interest. Additional video staff would be necessary to cover simultaneous events. A large reliance upon video tape and playback facilities would be in order. We estimate a hard core staff of about 80 technical persons would be required to maintain such a facility and to operate the camera taking and video playback facilities necessary to provide all day coverage every day.

The economics of such an undertaking are, nevertheless, within easy reach of the CATV industry when we relate the cost involved to the several million viewers that would be interested in subscribing to a new program package such as we are proposing.

The sixth channel of this package would consist of selected re-runs satisfactory to the owners of those programs. The networks have produced a large quantity of non-mass-entertainment programming that is of very high quality and worthy of more than just one showing. This material could be made available through multiple exposure so that a wider audience could experience the stimulation of some of this programming.

We propose to replay much of this kind of material, if possible -- the white papers, the specials that address themselves to current events, and so forth. There is much of this programming that does not get sufficient exposure simply because it is not always available in time slots suitable for everyone.

The American Broadcasting Company did a masterful performance in its coverage of the winter olympics in Mexico City, but how much of that did each of us have an opportunity to view? Think how many more people could be accommodated, if all of that material could be made available for several repeat showings at different program times so that everyone would get more than one chance to view it.

One might think that the networks object to repeating programs more than once, but the precedent of syndication is already part of our system. Repeat showings of "McHales Navy," "I Love Lucy," etc. are common place.

I have never understood why some of the excellent documentaries that have been carefully prepared by the networks which are highly informative and educational are only shown once.

Broadcasters apparently conform to this type of program presentation because they are operating in a medium of scarcity. They have

but one channel through which to funnel all of their program material -- each program must compete for a mass audience. In the event no mass audience is possible because of the time slot, minority interest programming is sometimes provided. The minority must view such programming at this time or not at all.

Cable technology does not have this limitation. It has excess channel capacity to offer. It would really be in the public interest to allow and coordinate rebroadcasts of all such material at several different times so that maximum exposure could be gained for some of the better cultural and documentary programs. In the event programming of this nature is unavailable other types of public service programs will undoubtedly be found.

I have outlined the details of an exclusive CATV service that would provide 6 channels of simultaneous programming. The interests that would be presented on these 6 channels would, in the aggregate, be of sufficient diversity and value that we believe the metropolitan television viewer would be prompted to buy the CATV service for the combined service of off-the-air local signals and the CATV 6 channel service.

To further the educational requirements of the Nation and to augment the programming of the educational television community we would further propose that any non-commercial local educational channel would be able to use one or more of these program services at his option, paying the distribution and switching costs only to the nearest CATV outlet. Thus, a means is provided to get more of this valuable programming to more remote and rural areas of the country that are for the time being beyond the reach of economical CATV operation.

The program outlined today offers the promise of fulfilling the Carnegie Commission's Report on Public Television. This proposal may not come into being precisely as I have proposed it, but there is no doubt in my mind that the accomplishment of its broad outline is inevitable.

# # # #

Dorsat (outside interests)

November 5, 1969

Dear Andy:

Thank you for the copy of the book "The Radio Spectrum, Its Use and Regulation." I have previously read through many of the articles in this book and in particular the one by William K. Jones, to which you refer.

I regret that I cannot offer any specific advice on how you might further dramatize the plight of the land mobile services. I am afraid that we simply have to resort to a number of ad hoc improvisations until we have a better handle on the whole subject of spectrum allocation. We recognize that this is an important matter, as we discussed, and are continuing to give the matter considerable consideration.

Sincerely,

Clay T. Whitehead
Staff Assistant

Mr. Andrew R. Paul
Public Affairs
Motorola Communications and
Electronics Inc.
Washington Liaison Office
Suite 810
2000 L Street, N. W.
Washington, D. C. 20036

cc: Mr. Whitehead
Central Files

CTWhitehead:ed

MOTOROLA Communications and Electronics Inc.

ADDRESS REPLY TO:
Washington Liasion Office
Suite 810
2000 L Street, N.W.
Washington, D. C. 20036

October 31, 1969

Mr. Clay T. Whitehead
Executive Office of the President
The White House
Washington, D.C.

Dear Tom:

I want to thank you again for the meeting you had with Len Kolsky and myself a few weeks ago. We understand your concern with the entire matter of spectrum utilization and allocation, and we appreciated your awareness of the land mobile problem.

You referred to the potential necessity of a new agency, possibly representing the Executive Branch, to determine priorities for access to the scarce radio spectrum. This is an extremely difficult problem. Efforts to arrive at priorities among the various land mobile services were undertaken by the Land Mobile Advisory Committee, but that group was unable to do so. Such questions as to whether the use of radio by a plumber as opposed to a towing service presented LMAC with an insoluble problem.

As I recall, you suggested that one basis for such a priority determination might lie in the sale of spectrum. While this may have meaningful merit in determining which of two broadcasters should be granted a channel, or whether a wire line common carrier should prevail over a broadcaster, this approach presents a rather unique problem where the contest might be between land mobile and non-land mobile parties. This whole subject was pursued in a conference held at Airlie House and a report on this meeting by William K. Jones is in the enclosed book, The Radio Spectrum, Its Use and Regulation.

On the land mobile spectrum specifically, we were interested in your remarks regarding the possible availability of obtaining relief in the 420-450 MHz band presently allocated to the Fed-

eral Government. To the extent that this band is also contiguous to existing land mobile space, it is an appealing alternative in that land mobile equipment could be readily developed to operate on these frequencies.

In either event, we are concerned that the "clout" of land mobile services would be insufficient to compete with our more politically potent opponents. We believe that the facts are on our side, and we would be glad to provide you with any additional data you might wish. Frankly, however, our more pressing need may well be some objective advice as to how we can better dramatize the plight of the land mobile services. We would be most grateful for any guidance you could offer in this regard.

Sincerely yours,

Andrew R. Paul
Public Affairs

AP/pg

Encl.

RADIO SPECTRUM REGULATION: THE ADMINISTRATIVE PROCESS AND THE PROBLEMS OF INSTITUTIONAL REFORM

GLEN O. ROBINSON

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Radio Spectrum Regulation: The Administrative Process and the Problems of Institutional Reform

Glen O. Robinson*

As the use for radio frequencies expands, criticism of the present system of allocating this scarce natural resource has mounted. Professor Robinson reviews the institutions and administrative processes of radio frequency allocation and evaluates the case for administrative reform, including the proposals for adoption of a pricing mechanism. He concludes that this critical problem will not be resolved by major institutional change, but only by the improvement of internal administrative operations.

I. INTRODUCTION

Marie Antoinette's milliner is reported to have observed that "nothing is new but what has been forgotten." Whether the comment is accurately attributed I cannot pretend to know, but it is an enduring thought, and one singularly pertinent to the subject of this article: the use and regulation of the radio frequency spectrum. In more than 40 years of radio regulation there have been countless studies, reports and commentaries on the problems of radio frequency allocation, use and regulation. There have been an equal number of recommendations and proposals for changing the regulatory system to create more efficient and effective spectrum utilization. It is necessary, therefore, to make more than the usual obeisances to the work of others. Indeed, for the most part I have not tried to go beyond them, but

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This article is an outgrowth of a study conducted for the National Association of Broadcasters, and their assistance and cooperation is gratefully acknowledged. The study was, however, an independent one and neither its conclusions nor those of this article necessarily represent the views of the NAB or of the broadcasting industry. Any biases which may appear are those which have been indulgently nurtured by the author alone. I also acknowledge with thanks the cooperation and assistance of the current Director of the Office of Telecommunications Management, General James D. O'Connell, as well as that of FCC Chairman Rosel H. Hyde, Commissioner Kenneth A. Cox and FCC staff members in providing material and information on the respective functions and responsibilities of the executive and FCC in regard to radio spectrum regulation. Needless to say they are not responsible for any errors which may appear or for any of the opinions given herein.

have been content with the far more modest aim of reviewing and appraising what already has been said—and in many cases forgotten.

It is a commonplace that the radio frequency spectrum —the backbone of modern telecommunications—is an extremely scarce natural resource which is becoming relatively more so as the types of uses and number of users expand. The variety of uses of radio spectrum is legion. Though radio and television broadcasting are most familiar, the frequency spectrum is also used for military purposes, private and common carrier land mobile communications, maritime and aviation communications, long distance radio relay, space communications, radio navigation, and amateur radio.

A general idea of the current magnitude of radio frequency spectrum use can be acquired from current licensing statistics. At the close of fiscal year 1967, some 9,811 broadcast stations, 11,545 common carrier stations, and 1,640,371 safety and special radio services stations—essentially land mobile, aviation, maritime, citizens radio and amateur radio—were authorized. This is apart from federal government stations not licensed by the FCC, which use over 30 per cent of the spectrum between 30 and 960 mc and over 70 per cent of the spectrum between 960 and 10,000 mc either exclusively or on a shared basis.[1]

In addition, the number of uses and users continues to expand at an accelerating rate, particularly in the field of private land mobile and other safety and special radio services, where the number of authorized stations increased by more than 100,000 between 1966 and 1967.[2] Given the current limitation on the number of frequencies available, this growing demand for new and expanded uses of radio frequencies has resulted in mounting

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1. For statistics on FCC licensed stations see 33 FCC ANN. REP. 160, 213, 216 (1967); for statistics on Government use see OFFICE OF TELECOMMUNICATIONS MANAGEMENT, REPORT ON FREQUENCY MANAGEMENT WITHIN THE EXECUTIVE BRANCH OF THE GOVERNMENT 10, App. 2 (1966). *See also* text accompanying note 97 *infra*.

"Government," when capitalized, is used throughout to refer to the federal government. State and local government users, who are licensed by the FCC, are referred to as non-Government or private users. This article adheres to the old style classifications for radio frequencies—kilocycles per second (hereinafter "kc"); megacycles per second (hereinafter "mc")—in lieu of the now accepted terms "khz" for kilohertz and "mhz" for megahertz. The older terms are still more widely used and are used by the FCC. The terms are, in any event, interchangeable: one megacycle per second equals one megahertz, etc.

2. 33 FCC ANN. REP. 216 (1967).

concern from both Government and private sectors that the spectrum may soon be saturated. The result of this "silent crisis," as one recent report has (somewhat overdramatically) described it,[3] has been to bring renewed attention to a problem which has been studied and restudied since radio regulation was inaugurated over 40 years ago: how to allocate the spectrum to achieve optimum use of and social benefit from radio. More specifically, how can the conflicting interests and competing demands for the spectrum—both Governmental and private—be reconciled? What priorities must be established among competing uses? What institutional organization and administrative processes are required to deal adequately with the problem?[4]

II. HISTORICAL PREFACE

The history of radio spectrum management has been extensively explored by others.[5] However, a brief outline of the history of the present regulatory institutions and a review of the

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3. U.S. DEP'T OF COMMERCE, TELECOMMUNICATIONS SCIENCE PANEL, ELECTROMAGNETIC SPECTRUM UTILIZATION—THE SILENT CRISIS (1966).

4. In August, 1967, the President appointed a Task Force to make a comprehensive study of telecommunications policy, including the allocation and use of the spectrum. The Task Force reported its findings in December, 1968. BROADCASTING MAGAZINE, Dec. 16, 1968, at 30. As this goes to print, the official report of the Task Force to the President has not been made public. There are, however, a number of summaries of its findings and proposals purportedly based on final drafts shown to the news media. *See, e.g.*, INDUSTRIAL COMMUNICATIONS, Dec. 13, 1968, at 3-9; *id.*, at 30-38; N.Y. Times, Dec. 10, 1968, at 41. Although these contain only a bare outline of a 450 page report, it is believed that the basic conclusions and proposals of the Task Force are accurately reported. Some of these basic conclusions, as reported, will be discussed in this article.

As will be made apparent below, the Task Force is not breaking new ground. Studies have been conducted repeatedly under either executive or congressional auspices since at least 1944. The present study is, however, the most ambitious since 1951, when a similar investigation was made by a presidential "Communications Policy Board."

5. A valuable resume of important events up to 1959 by the former Office of Civil Defense Mobilization, on which the following discussion relies for many events not elsewhere chronicled, is contained in *Hearings on Spectrum Allocation Before the Sub-Comm. on Communications and Power of the House Comm. on Interstate and Foreign Commerce*, 86th Cong., 1st Sess. 130-44 (1959) [hereinafter cited as 1959 Hearings on Spectrum Allocation]. A recent study of radio spectrum allocations also contains a chronicle of events to the present time. *See* Metzger & Burrus, *Radio Frequency Allocation in the Public Interest: Federal Government and Civilian Use*, 4 DUQUESNE L. REV. 1-47 (1965) [hereinafter cited as Metzger & Burrus].

major past studies and proposals for institutional reform is a necessary preface to an analysis of the current administrative processes of radio spectrum allocation and management.

A. Creation of the Regulatory Framework

Although the history of radio communications regulation dates back at least to 1912, when the first federal law regulating radio communication was enacted,[6] the first attempt at comprehensive regulation was the Radio Act of 1927.[7] This was primarily an attempt to solve the interference crisis which had resulted from the failure of prior efforts at regulation.[8] The Act established the Federal Radio Commission (FRC) with comprehensive regulatory powers, including the power to classify radio stations, to assign frequencies to various classes of and individual stations, and to determine hours of operation, power, and geographical service areas. However, the 1927 Act was concerned only with allocation and use of frequencies by non-Government users. Radio stations "belonging to and operated by the United States" were exempted from regulation.[9] These were to operate on frequencies assigned pursuant to presidential authority, actual assignments being made by coordination of user agencies through the Interdepartment Radio Advisory Committee (IRAC), a group comprised of the various federal government users.[10]

In 1928 the FRC was granted membership on IRAC.[11] But as a mere member of IRAC, the FRC could exercise no more control over Government frequency use than IRAC or the President

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6. 37 Stat. 302 (1912). The Act of 1912 had been preceded by the Wireless Ship Act of 1910, 36 Stat. 629 (1910), but the 1910 Act did not regulate radio communications; it only required ocean vessels to be equipped with radio.

7. 44 Stat. 1162 (1927).

8. For a discussion of the events leading up to the 1927 Act, see J. Herring & G. Gross, Telecommunications 242-45 (1936).

9. 44 Stat. 1162, 1165 (1927).

10. IRAC was formed in 1922 with the primary purpose of advising the Secretary of Commerce on various radio matters of common interest to users. However, it soon became involved in the assignment of frequencies to Government stations which were also exempt under the Act of 1912, this becoming its primary function. This role was formalized shortly after the 1927 Act when the President advised the Secretary of Commerce that he wished to have all radio frequency applications from Government agencies submitted to IRAC. 1959 Hearings on Spectrum Allocation at 130. For a history of IRAC, see *id.* at 106-08; Coase, *The Interdepartment Radio Advisory Committee*, 5 J. Law & Econ. 17-20 (1962) [hereinafter cited as Coase].

11. 1959 Hearings on Spectrum Allocation at 106.

could exercise over private allocations and use.[12] And, since the Act drew no distinctions between Government and non-Government use, the dual jurisdiction created an obvious potential conflict between the FRC and IRAC over Government and non-Government allocations—a conflict for which no means of resolution other than compromise had been provided. This potential conflict now seems so evident that it might be wondered why so little attention was given to creation of a unified authority. However, the War and Navy Departments were particularly apprehensive about giving control to an independent outside agency such as the FRC, which might not adequately consider military needs.[13] Also, at this time the supply of frequencies was considered sufficient to accommodate all users—Government and non-Government—so that the occasion for serious conflict between the FRC and IRAC presumably was not foreseen.

In January, 1934, the Interdepartmental Committee on Communications recommended to the Senate Commerce Committee that a single agency be formed to regulate all radio communications.[14] In June, 1934, the Communications Act of 1934 was enacted.[15] The substance of the Radio Act of 1927 was retained with relatively little change since the primary purpose of the new Act was not to modify the structure of radio regulation but to create a single permanent, independent agency to regulate all forms of electrical communication whether by telephone, telegraph, cable or radio. Thus, the Federal Communication Commission was created to take over the functions previously exercised by the FRC and the Interstate Commerce Commission,[16] which then had jurisdiction over telephone and telegraph.

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12. *Id.* at 136.

13. *See* 67 CONG. REC. 12497, 12631 (1926); *Hearings Before the House Comm. on Merchant Marine and Fisheries*, 69th Cong., 1st Sess. 92-93 (1926).

14. *Message by Franklin D. Roosevelt*, in STUDY OF COMMUNICATIONS, S. Doc. No. 144, 73d Cong., 2d Sess. (Comm. Print 1934).

15. 48 Stat. 1064 *passim* (1934), as amended, 47 U.S.C. § 1 *passim* (1964). For a history of the various bills leading to the Act of 1934, see H. WARNER, RADIO AND TELEVISION LAW 783-88 (1948).

16. The FCC was also given certain rate regulation authority over telegraph companies previously exercised by the Postmaster General. S. REP. No. 781, 73d Cong., 2d Sess. 1 (1934).

It is apparent that a major motive for the consolidation of functions, particularly in the Senate, was not unification for its own sake so much as it was a concern that telephone and telegraph regulation under the jurisdiction of the ICC was not adequate. *See id.* at 2. Indeed, the Senate bill called for organization of the FCC into two divisions, one for telephone and telegraph and one for radio (principally broadcasting), the effect of which would have been similar to creation of two separate

The provisions of the Radio Act exempting federal government stations from FRC regulation—and authorizing the President to take over radio communications facilities in time of national emergency—were carried over into sections 305(a) and 606(a), (c), (d) of the 1934 Act respectively.[17] Even at this early date there was dissatisfaction with the failure to coordinate the needs of Government and private stations, and there existed the feeling on the part of some that there had been excessive demands on behalf of some Government departments.[18] Despite all this, it does not appear that any extended consideration was given to a possible alteration of the administrative structure for frequency allocation or bestowing authority over both Government and non-Government users on a single administrative body.[19]

B. The Emerging Problem

Through the 1930's, dual jurisdiction over the radio spectrum seems not to have created serious impediments to effective management. If there was conflict between the demands of the private and Government sectors, it appears to have been more a theoretical than an actual problem. The FCC succeeded to the FRC's membership on IRAC and the coordination between the two bodies appears to have been adequate at this time. In part, the successful coordination in the early management of the spec-

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agencies. This was rejected by the House, which merely permitted such a division by the Commission if it deemed it appropriate. *See* H.R. Rep. No. 1850, 73d Cong., 2d Sess. 2-3 (1934). The House version was enacted. *See* notes 219-20 *infra*, and accompanying text for further discussion.

17. To those radio facilities which the President was authorized to take over were added wire facilities. 48 Stat. 1064, 1083, 1104 (1934), *as amended*, 47 U.S.C. §§ 305(a), 606(a), (c) & (d) (1964).

18. *Hearings on S. 6 Before the Senate Comm. on Interstate Commerce*, 71st Cong., 1st Sess. 52 (1929) (testimony of Louis Caldwell, former General Counsel to the Radio Commission).

19. In the Senate hearings on one of the principal forerunners of the 1934 Act, Louis Caldwell made the rather vague suggestion that "Government departments . . . handle Government stations, and the Federal Radio Commission will handle private stations with a common authority to which their conflicting demands may be submitted, say, to the President." *Id.* at 53. This was not pursued by Caldwell or the Senate Committee. A few other scattered references to the question of allocations and allocations authority appear in the hearings on the earlier bill, but there is no significant discussion of the problem. *Id.* at 204-05, 254, 1067. No references were found in the hearings on the House Rayburn bill which subsequently became the Act of 1934. *See Hearings on H.R. 8301 Before the House Interstate and Foreign Commerce Comm.*, 73d Cong., 2d Sess. (1934)

trum can be attributed to the fact that radio communications was still in its infancy and frequency demands for new and expanded radio uses had not yet begun to press against the supply which a maturing technology was able to make available. However, this favorable balance of supply and demand was to change with the great expansion of private and Government radio uses during the 1940's.

Given the increased demand for frequencies, particularly by the military during World War II, the problem of effective management and coordination between the FCC and IRAC became a matter for concern. In 1943 Congress appointed a select committee to investigate the FCC.[20] Although it was not primarily concerned with spectrum allocation, the committee did inquire into the problem. Because of the growing competition between Government and non-Government use, the committee sought to discover whether the FCC and IRAC:

> worked together satisfactorily as two agencies with complementing jurisdiction in the matter of making assignments and whether or not they were making wise and equitable divisions of the limited available radio spectrum among the services under their respective jurisdictions.[21]

It is apparent, however, that the committee was less concerned with whether the system was producing equitable allocations than with whether the federal government users, particularly the military, were getting what they wanted—an entirely natural concern given the paramount concern for meeting wartime needs. During the committee hearings it was proposed that IRAC be made an "independent agency," though the proposal was evidently premised not on the belief that IRAC should be free of the executive, but that since the Chairman of the FCC was also serving as the Chairman of IRAC, it was necessary that the Commission be prevented from "dominating" IRAC.[22] However, efforts to bring about a reorganization of IRAC by executive order were tabled and not revived.[23]

The fear of possible "dominance" by the FCC—a curious contrast to later complaints that the FCC is too subservient to

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20. *See* H.R. REP. No. 2095, 78th Cong., 2d Sess. 1-2 (1945).
21. *Id.* at 13.
22. *Id.* at 14. The term "independent" was not defined, but it appears that what was intended was an agency with some formal status within the executive branch rather than an independent agency such as the FCC.
23. *Id.*

the demands of federal government users[24]—was clearly groundless, as the select committee's report indicates. The committee concluded that the system "seems to have functioned with reasonable satisfaction" and that the broad division of jurisdiction between the FCC and IRAC "seems to be a logical one."[25] There continued to be dissatisfaction with the system, however, particularly with what was regarded as a failure to establish broad policy objectives of telecommunications. To assist in the formulation of policies and the development of plans for the most effective use of wire and radio, the Telecommunications Coordinating Committee (TCC) was established under the sponsorship of the State Department in 1946. The Committee was comprised of the FCC, the Departments of State, Treasury, War, Navy, Commerce, and later the Air Force.[26] Although the TCC still exists, it has not developed into the high level policy planning organization that was anticipated. It has become in fact little more than an advisor to the State Department.[27]

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24. *See, e.g.*, Coase at 29; 1959 Hearings on Spectrum Allocation at 87-88.

25. H.R. REP. No. 2095, *supra* note 20, at 13-14.

26. 1959 Hearings on Spectrum Allocation at 132.

27. *Id. See also* the analysis of the failure of the TCC by the President's Communications Policy Board which affords an insight not only into the problems of the TCC but the entire problem of joint planning and coordination:

> At the outset it was thought this committee [the TCC] could formulate policies and develop plans and programs which would promote the most effective use of wire and radio facilities. The FCC, however, pointed to its statutory responsibility for policy formulation and advice to Congress on such matters, and stated that its participation in any group such as TCC could not relieve it of these obligations or bind it in any way. The State Department reiterated its initial view that the TCC could work only by unanimity, and that there must be no intrusion on the statutory or other authorized responsibilities of any of the component agencies. . . . TCC is weighted with representatives of military interests and functions, who besides are chiefs of the communications services of the three departments—that is, users and operators of specialized services rather than officials charged with agency-wide responsibilities. . . . The difficulty here arose from the fact that much of telecommunications policy formation has to do with dividing scarce resources among military claimants, other Federal Government claimants, and non-Government claimants. Officials heading extensive service agencies, with larger potential demands on their services than they can expect to meet, can hardly be expected to take an impartial view of such questions as the national requirement for a share of the world's frequencies, or division of the national share among all claimants.

PRESIDENT'S COMMUNICATIONS POLICY BOARD, TELECOMMUNICATIONS: A PROGRAM FOR PROGRESS 201-03 (1951) [hereinafter cited as TELECOMMUNICATIONS: A PROGRAM FOR PROGRESS].

In the same year in which the TCC was created the Bureau of the Budget released the report of a study on allocation of radio frequencies to Government agencies.[28] The study rejected the possibility of vesting the authority to assign radio frequencies to Government users in the FCC or in any single executive department. It concluded: (1) If the FCC was charged with making all frequency assignments, it would be subject to much greater political pressure and to accusations of bias from both sides. As a result, its regulation of private radio would be made more difficult. (2) Creation of a Department of Communications was not feasible: "the regulation of one department by another generally has been quite unsuccessful" since executive agencies will not permit a co-equal agency to control their internal operations.[29] In lieu of these alternatives the study recommended executive establishment of an office of Coordinator of Government Radio to advise the President in telecommunications matters and to coordinate Government allocations.

Despite the Budget Bureau study's rejection of major institutional change, dissatisfaction with the handling of Government allocations and the belief that federal users were getting more than their fair and necessary share of frequencies continued. This led to a 1950 legislative proposal for fundamental reorganization of allocations authority, introduced by Representative Sadowski, Chairman of the Radio Subcommittee of the House Committee on Interstate and Foreign Commerce.[30] In addition to proposing certain changes in FCC broadcasting regulation,[31] the Sadowski bill proposed to deal with the problem of allocations by creating a five man independent executive agency known as the "Frequency Control Board." The Board would have had authority to: (1) allocate, cancel, and modify frequencies; (2) assign, cancel and modify federal government station frequencies; and (3) prescribe regulations to govern FCC assignment of frequencies to non-Government stations. The Board would have been directed to

28. SEIDMAN & MOORE, ALLOCATION OF RADIO FREQUENCIES TO GOVERNMENT AGENCIES, BUREAU OF BUDGET PROJECT 46-40, *cited in* 1959 Hearings on Spectrum Allocation at 132.

29. *Id.*

30. H.R. 6949, 81st Cong., 2d Sess. (1950); *see* 96 CONG. REC. 838-40 (1950).

31. The Sadowski bill would have (1) given the FCC additional administrative sanctions with respect to radio station licensees and permittees, (2) rendered licensees immune from criminal or civil actions as a result of statements made in the course of political broadcasts and (3) broadened section 315 to include not only political candidates themselves but their designated spokesmen.

disapprove proposed FCC assignment of any frequency to non-Government stations, if such assignment would (a) cause harmful interference with any federal government use of radio, or (b) violate any regulation of the Board with respect to assignments by the FCC. Finally, the bill would have authorized a "Military Liaison Committee" to advise the Board. On any matter involving national defense, this Committee would be authorized to refer the question to the Secretary of Defense, who in turn could appeal to the President, who would then make the final decision.

That the provisions of the bill would have given control over *all* allocations to the executive—principally to the military[32]—seems somewhat incongruous in view of Sadowski's evident concern that the federal government was getting more than its share of allocations due to the inadequacy of the existing structure to control Government demands.[33] The ostensible reason for not vesting this allocation authority in the FCC, a logical alternative given the concern over federal-user dominance, was that the Commission was already overburdened and that the proposal to create a separate agency would hopefully "so lighten the workload of the Commission that the . . . backlog can be eliminated and that the Commission can become current in its work."[34] Given the attacks on the Commission at that time for its backlog of work,[35] this explanation may offer a plausible reason for not giving the FCC complete allocation authority, but

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32. The OCDM later commented on this proposal that:

> By virtue of right of appeal to the President through the Secretary of Defense, the [Military Liaison] Committee, in matters of national defense, would have a virtual veto power over the Board.

1959 Hearings on Spectrum Allocation at 133.

33. Introducing his bill in the House, Sadowski stated:

> [T]he charge has been made that, as a result of the inadequacy of this machinery, private applicants for space in the spectrum have come out second best. It has been contended that the Federal Communications Commission has been given, to distribute among private applicants, that portion of the spectrum that has been left over after the Federal Government agencies took the space that they desired. . . . [I]t is poor business to leave the apportionment of an important natural resource like the radio spectrum . . . to a planless system of compromises between two public bodies, each sovereign in its own field, neither of which is responsible to the people for the apportionment that results from their respective actions.

96 CONG. REC. 839 (1950).

34. *Id.*

35. The McFarland Bill, S. 1973, 81st Cong., 1st Sess. (1949), proposing a number of basic reorganizations in the FCC, its staff and its procedure, was motivated in part by the delays and backlog of work. *See Hearings on S. 1973 Before a Subcomm. of the Senate Comm. on Interstate and Foreign Commerce*, 81st Cong., 1st Sess. *passim* (1949).

it does not explain why the authority should be given to the federal executive if the concern was with inadequate controls on federal use of frequencies. It is more probable that this was the only way the proposal to create a single authority could be made palatable to the military establishment and executive.

Sadowski's proposal failed for a number of reasons. First, there was general industry opposition to the bill.[36] Second, the bill's nonallocation features overlapped and competed for attention with the McFarland reorganization bill which had already passed the Senate.[37] Third, the subsequent establishment of the President's Communications Policy Board pre-empted the allocation proposals.[38]

C. The President's Communications Policy Board

The President's Policy Board, headed by a former FCC Commissioner, Dr. Irvin Stewart, was created in 1950 for the broad purpose of studying the present and potential use of radio and wire communications by Government and non-Government users and to make policy and implementation recommendations.[39] Among the central issues with which the study dealt was that of formulating policies and/or changing or strengthening existing organizations to deal with the "conflicting interests and needs of Government and private users of the spectrum space."[40]

In 1951 the Policy Board released its report.[41] Regarding the current organizational structures for dealing with the problem of spectrum allocation and management, the Board concluded that the "whole Government telecommunications structure is an uncoordinated one" and that "there is need for a better determination of the division in the national interest of frequency space between Government and non-Government users."[42]

See also Committee on Interstate and Foreign Commerce, Special Subcommittee on Legislative Oversight, 85th Cong., 2d Sess., Regulation of Broadcasting 116-21 (Subcomm. Print 1958).

36. Industry opposition was aimed at both the Frequency Control Board proposal and the bill's non-allocation features. Committee on Interstate and Foreign Commerce, *supra* note 35, at 126.

37. *See id.* at 122, 126-38. The McFarland bill with some modifications was enacted into law as the Communications Act Amendments of 1952, 66 Stat. 711.

38. *See* 1959 Hearings on Spectrum Allocation at 133.

39. Telecommunications: A Program for Progress at 2-3.

40. *Id.* at 8-9.

41. The report is often referred to as the "Stewart Report," and that title is sometimes used in this article.

42. Telecommunications: A Program for Progress at 18.

The Policy Board's dissatisfaction with the present administrative structure was directed principally at the inadequacies of IRAC and the lack of effective control over federal government and private use.[43] However, the Board rejected sweeping institutional change. Believing that the problems of spectrum management could be solved within the framework of the existing dual allocations authority,[44] it rejected as unwise the unification of allocations control by vesting full authority in either the FCC or an executive agency.[45] The Board concluded that a simpler and better solution—at least one which should be attempted before more drastic reorganization was undertaken—was for the federal government to "bring its house in order and then try to match its needs with those of the Federal Communications Commission."[46]

To accomplish these goals, the Stewart Report recommended the creation, by executive order, of a three-man "Telecommunications Advisory Board" whose primary responsibility would be to carry out the planning and executive functions of the President with respect to assignment of frequencies, to advise the President of Telecommunications policy, and particularly to:

> establish and monitor a system of adequate initial justification and periodic rejustification and reassignment of frequencies assigned to Federal Government users, and, in cooperation with the Federal Communications Commission, supervise the division

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43. *Id.* at 183-206.

44. 1959 Hearings on Spectrum Allocation at 78 (testimony of Dr. Stewart).

45. TELECOMMUNICATIONS: A PROGRAM FOR PROGRESS at 216. Elsewhere in its report the Board further elaborated on its objections to vesting of authority in the FCC:

> The two most important considerations against placing new functions in [the] FCC, and in our opinion the conclusive ones, are these: First, the FCC in its capacity as representative of the interest of non-Federal communications agencies, is in effect a user. As such, it would never be accepted as an impartial arbiter by other Federal users. Second, it would be unwise and improper to give to the FCC the power to make decisions which affect the administration of executive agencies, or which relate closely both to foreign relations and to national defense.

Id. at 197. Also mentioned was the FCC's existing workload and its hesitancy about acquiring this additional responsibility. *Id.* at 196. The Board's report does not elaborate on its objections to vesting allocations authority in an executive agency under the control of the President, but implicit is the same reasoning as that which underlies its rejection of FCC control: it would involve a serious conflict of interest. An independent "super board" was rejected for reasons similar to the rejection of FCC control: it would interfere with executive prerogative. *Id.* at 208.

46. 1959 Hearings on Spectrum Allocation at 78 (testimony of Dr. Stewart).

> of frequency spectrum space between Government and non-Government users.[47]

IRAC would continue as "a specialized agency to perform the detailed work of assigning frequencies to federal government users but under [the policies and supervision of the Telecommunications Advisory Board]."[48]

In April, 1951, shortly after the release of the Stewart Report, Senator Johnson introduced a bill which would have given the FCC authority to assign frequencies to federal government users in accordance with regulations approved by the President.[49] Coming on the heels of the Board's study which not only had recommended a different solution but had strongly rejected the idea of giving the FCC such allocations authority, it is not surprising that the Johnson proposal enjoyed no success. The FCC was not eager to take on this responsibility and pointed to the contrary recommendations of the Stewart Report, stating that it would be preferable to wait until its recommendations could be implemented.[50]

D. Attempts at Reform After the Stewart Report

1. *The Telecommunications Advisor*

At least partially to implement the Stewart Report's recommendations, President Truman established the position of Telecommunications Advisor in October of 1951. The Advisor was to "assist and advise" the President in "coordinating the development of telecommunications policies and standards applying to the executive branch of the Government" with respect to the assignment of radio frequencies to Government users; in "establishing policies and procedures governing such assignments and their continued use;" and finally in "developing U.S. Government frequency requirements."[51] He was directed to "perform his functions with the aid, or through the facilities, or appropriate departments and agencies of the Government," IRAC being specifically directed to report to and assist the advisor.[52]

The Telecommunications Advisor effected a number of reorganizational changes in IRAC. Among the most important was the establishment in 1952 of a Frequency Assignment Sub-

47. Telecommunications: A Program for Progress at 18-19.
48. *Id.* at 207.
49. S. 1378, 81st Cong., 2d Sess. (1951).
50. 1959 Hearings on Spectrum Allocation at 135.
51. Exec. Order No. 10297, 3 C.F.R. § 828 (1951).
52. *Id.*

committee (FAS) comprised of representatives of IRAC members and the FCC to handle all routine frequency assignments to federal users.[53] The purpose was to free IRAC itself for higher level policy planning. Although it was reported that the new Telecommunications Advisor was making "real progress" towards improving federal frequency allocations and overall policy planning, the position was abolished by President Eisenhower only two years after its creation. In June, 1953, the functions and responsibilities of the former advisor were transferred to the Director of the Office of Defense Mobilization (ODM), and in turn subdelegated to an ODM Assistant Director for Telecommunications.[54] Although the responsibilities were unchanged, the position and authority were downgraded. A further downgrading of the position and functions of the Telecommunications Advisor came with the 1958 merger of ODM and the Federal Civil Defense Agency into the Office of Civil and Defense Mobilization (OCDM). The telecommunications functions were assigned to the Director of the OCDM but delegated to an Assistant Director for Resources and Production and further delegated to a Deputy Assistant Director for Telecommunications.[55]

2. *The Potter and Bowles Recommendations*

The failure to establish effective control over spectrum use by federal agencies as had been urged by the Stewart Report resulted in other proposals for reform.[56] In 1957 Senator Potter introduced a resolution in the Senate proposing to establish a special commission to investigate federal government use of the spectrum.[57] The resolution was approved by the Senate. How-

53. 1959 Hearings on Spectrum Allocation at 109.

54. Exec. Order No. 10460, 3 C.F.R. § 947 (1953). *See also* 1959 Hearings on Spectrum Allocation at 134, 136. The responsibilities of the ODM were expanded in 1957 by delegating to it full presidential authority under sections 305(a) and 606(a), (c) & (d) of the Communications Act. However, this delegated authority was to be exercised only in time of war. *See* Exec. Order No. 10705, 3 C.F.R. § 363 (1957).

55. 1959 Hearings on Spectrum Allocation at 105, 134, 142.

56. One proposal in 1953 warrants passing mention. In August, 1953, Representative Wolverton introduced a bill in the House proposing to establish a Telecommunications Policy Committee consisting of representatives of the FCC and the Departments of State, Defense and Commerce. The purpose of the proposed Committee was to coordinate the development of telecommunications policy and formulate plans with respect to the best utilization of the spectrum. Not surprisingly, nothing came of the proposal which, as later described by the OCDM, would have done no more than "to establish a high level IRAC." 1959 Hearings on Spectrum Allocation at 136.

57. *Id.* at 139.

ever, acting on the suggestion of the ODM, the House reported out the resolution with an amendment calling for an investigation of the use of the spectrum by federal and nonfederal users alike. The amended resolution, although concurred in by the FCC, was opposed by the broadcast industry as well as Senator Potter himself and subsequently failed.[58]

In 1955 the Senate Commerce Committee, motivated principally by the UHF/VHF television difficulties,[59] convened an ad hoc Advisory Committee headed by Edward Bowles to make a survey and reappraisal of television allocations. For the most part the Bowles study is only tangentially relevant to the general allocations problem. Its principal concern was with the specific regulatory policies of the FCC, ranging from deintermixture of UHF and VHF channels problems to the problems of color television, educational television, and the exercise of licensing power by the Commission. The Committee's report also gives a lengthy and detailed analysis of the multiple functions, problems and failure of the FCC.[60]

Pertinent to the allocations problem, however, was a recommendation to establish a communications authority as part of the executive structure.[61] The proposal was intended to reinstate the recommendations of the President's Policy Board in 1951. As the Bowles committee concluded:

> The Stewart report was an enlightening contribution by competent authorities. If one is to judge from the results, the report was irresponsibly handled at the Executive level and ignored at the Congressional level. The record shows there is a legislative job yet to be done.[62]

3. *Cooley Committee Study*

In November, 1958, the Director of OCDM appointed a Spe-

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58. 1959 Hearings on Spectrum Allocation at 140. An editorial in BROADCASTING MAGAZINE, Aug. 18, 1958, at 34, explained the reason for the broadcasters' opposition:

> The . . . bill was killed because broadcasters felt, in their battle for self preservation, that they had no alternative. . . . More had to be known about the reason for shift in emphasis from military to broadcast use of the spectrum.

59. The story of these difficulties is now well known. For a history of the problem prior to 1962, see Note, *The Darkened Channels: UHF Television and the FCC*, 75 HARV. L. REV. 1578 (1962). *See also Hearings on Television Allocations Before the Senate Comm. on Interstate and Foreign Commerce*, 86th Cong., 2d Sess. 4585-4601 (1960).

60. AD HOC ADVISORY COMMITTEE ON ALLOCATIONS TO THE SENATE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE, 85th Cong., 2d Sess., ALLOCATION OF TV CHANNELS (Comm. Print 1958).

61. *Id.* at 256.

62. *Id.*

cial Advisory Committee on Telecommunications, chaired by Victor E. Cooley, a past Deputy Director of OCDM. The Committee was to review the current administrative organization and procedures for dealing with day-to-day matters relating to telecommunications management within the executive branch, analyze the growing demands for frequency assignments by both Government and non-Government users, and make recommendations for change. On December 29, 1958, the Cooley Committee submitted its report to the Director of OCDM.[63]

The central problem discovered by the Committee was virtually the same as that identified by the President's Communications Policy Board in 1951: inadequate control of federal government use of the spectrum.[64] The Committee concluded that an extensive study of the current uses of the spectrum—particularly Government uses—was necessary before consideration of any sweeping change in the regulation and control of telecommunications by the Government. In advance of such a study, however, it recommended congressional creation of a three-man National Telecommunications Board within the Executive Office of the President, having direct access to the President and the heads of Government agencies using telecommunications. The Board's function would have been to formulate telecommunication policies and standards designed to assure efficient telecommunication management, including formulation of criteria, engineering standards, and procedures for allocation of frequencies to various Government agencies. As part of its "special duties" the Board was also to (1) review the national table of frequency allocations employed by Government and non-Government users, and (2) study the role of the FCC and the executive agencies in telecommunications management. The Board was to

63. The report is printed in 1959 Hearings on Spectrum Allocation at 40-49.

64. In reviewing the structure as it has evolved, the Committee was continuously struck by the absence of adequate provision for high-level consideration on the Government side of a variety of matters of vital national importance in the area of telecommunications. The Federal Communications Commission provides a vehicle for adequate consideration in the non-Government area. In sharp contrast, as indicated earlier, decisions in the area of Government use or of conflict between Government and non-Government use, are often made by compromises at the operational level by staff members, who though competent in their fields, do not necessarily have the total picture of national interest. There is also an unfortunate absence at present of anyone in the executive branch with adequate knowledge, experience, and stature to act for the President in these matters . . . .

Id. at 42.

report its findings and recommendations, including any recommendations for changes in existing administrative organization.[65]

The proposed Board would not have had authority over non-Government allocations; the jurisdiction and functions of the FCC was to be unaffected. Although the whole question of the dual, FCC-executive control of allocations was to be studied by the Board, the Cooley Committee was not primarily occupied with that problem. The primary concern of the proposed Board was to put the executive's house in order.[66] The purpose was thus to substitute a framework in which two agencies, the FCC and the Board, could effectively work together, in lieu of the FCC and a host of "independent" executive agency-users who could not.[67]

It is evident that the Board would not have had *final* authority over those Government allocation matters which would have continued to lie with the President.[68] While the question whether there should be an "overriding board" to rule on *all* Government allocations was one of the questions to be studied by the Board,[69] the Committee evidently felt that even without formal, overriding authority the Board would be able to control Government allocations and consolidate Government needs.[70]

The Cooley Committee's approach of attempting to consolidate Government allocations into one executive body acting under the President, while leaving intact the dual FCC-executive jurisdiction over the spectrum generally, was thus virtually the same approach taken by the President's Policy Board in its 1951 report. The only notable difference, as explained by the head of the 1951 Board—who was also a member of the Cooley committee—was that the Policy Board would have left the creation of the executive board to the President rather than Congress.[71]

In May, 1959, Oren Harris, Chairman of the House Interstate and Foreign Commerce Committee, introduced a bill[72] recommended by the Cooley Committee to implement its proposals. Though hearings were held on the bill and on the problem of allo-

65. *Id.* at 43-44.
66. *See id.* at 50.
67. *See id.* at 54-55.
68. *Id.* at 54.
69. *Id.* at 44, 53.
70. *Id.* at 50, 55, 78.
71. *Id.* at 78.
72. H.R. 7057, 86th Cong., 1st Sess. (1959).

cations generally,[73] the only result was the introduction of another bill by Harris in July.[74]

Harris' second bill would have created a so-called "Government Frequency Administrator" with authority similar to that of the so-called "National Telecommunications Board" proposed earlier. However, the second Harris bill went beyond the earlier bill and the Cooley Committee's recommendations. In addition to creating the Government Frequency Administrator it would have created a three man "Frequency Allocation Board" in the executive branch to: (1) conduct continuing investigation of, and develop long-range plans for, the utilization of the spectrum; (2) allocate, modify or cancel on its own initiative—or on application by the FCC or the Frequency Administrator—radio frequencies for federal and non-federal government use "as the Board deems appropriate;" and (3) advise the President on foreign relations matters concerning use and division of the spectrum. Finally, in cases involving "questions of national security or foreign relations" the President would have express power of review, including the power to modify or completely override an order of the Board.

In its essential terms, the second Harris bill was little more than a revival of the Sadowski bill of 1950. Both bills would have unified final allocations authority in a so-called "independent" agency in the executive branch, something of a contradiction in terms. Harris' proposed creation of a Government Frequency Administrator to handle directly the allocations among Government users—evidently replacing IRAC— is a refinement of the earlier Sadowski bill, but apart from this the thrust of the proposals seems pretty much the same. Like the Sadowski bill, the Harris bill was never reported out of committee.

4. *1960 and After: The Continued Pursuit of Reform*

In 1960, prompted by the continuing concern over the growing need for more effective radio frequency control, the Senate Committee on Aeronautical and Space Sciences issued a staff report on "Policy Planning for Space Telecommunications."[75] Although primarily concerned with problems of space communications, the report's conclusions and recommendations were

73. 1959 Hearings on Spectrum Allocation.
74. H.R. 8426, 86th Cong., 1st Sess. (1959).
75. POLICY PLANNING FOR SPACE TELECOMMUNICATIONS, REPORT TO THE SENATE COMMITTEE ON AERONAUTICAL AND SPACE SCIENCES, 86th Cong., 2d Sess. (Comm. Print Dec., 1960).

broader. It concluded that there was no effective coordination of spectrum management nor any developed policy regarding spectrum use. It recommended a comprehensive study of telecommunications policy, including a study of the mechanisms of policy formulation and coordination between the Departments of State and Defense, NASA, the FCC, the OCDM (OEP) and the Bureau of the Budget.[76]

These conclusions were reinforced by those of James Landis in his report on regulatory agencies to the President-elect in December, 1960, which concluded that there was an urgent need for greater coordination among the various agencies concerned with radio frequency allocation and management.[77] Although Landis' evaluation suggested rather pervasive weaknesses throughout the system, his proposal for institutional reform was a relatively modest and simple one. Landis proposed the creation of an Office for the Coordination and Development of Communications Policy within the Executive Office of the President, and the transfer to this office of all of the powers vested in the OCDM.[78]

Acting partially on these recommendations, President Kennedy in 1962 established the Office of Telecommunications Management (OTM) within the Office of Emergency Planning (OEP). The OTM was responsible for coordinating the telecommunications activities of the executive branch, promoting uniform policies and standards, developing data with regard to frequency requirements, encouraging research and development activities, and contracting for studies and reports related to these responsibilities. The President's authority under section 305(a) of the Communications Act to assign, amend, modify or revoke frequencies was delegated to the Director of the OEP with specific authority to redelegate to the OTM.[79] The Director of the OEP did redelegate this authority to the OTM to be exercised with the assistance of IRAC.[80] The responsibilities and functioning of the OTM and the extent to which this reorganization has altered frequency allocation and management in the federal sec-

76. *Id.* at 76.

77. J. LANDIS, REPORT ON REGULATORY AGENCIES TO THE PRESIDENT-ELECT, 86th Cong., 2d Sess. 26-28 (1960) (printed for the Senate Judiciary Committee).

78. *Id.* at 86.

79. Exec. Order No. 10995, 3 C.F.R. § 535, 47 U.S.C. § 305 (1962).

80. MILITARY OPERATIONS SUBCOMMITTEE OF THE HOUSE COMMITTEE ON GOVERNMENT OPERATIONS, 88th Cong., 2d Sess., SATELLITE COMMUNICATIONS 80 (Comm. Print 1964).

tor will be discussed in greater detail below. Of course, the authority of the FCC over allocations to nonfederal users and the absence of any control over the division of the spectrum between federal and nonfederal users were unchanged by the Presidential reorganization of 1962.

Notwithstanding the persistence of criticism, and a growing number of private studies urging institutional reform,[81] the basic regulatory structure and administrative processes of spectrum allocation have not changed since 1962. A closer look at this structure and process of regulation is now necessary.

III. THE ADMINISTRATIVE PROCESSES OF SPECTRUM MANAGEMENT

At the outset brief mention should be made of the basic international framework within which both federal government and nonfederal government allocations are made. The current framework is that established in Geneva by the 1959 International Telecommunication Convention[82] and supplemental regula-regulations,[83] as modified in 1963.[84] The radio spectrum is allocated on a world-wide basis[85] among broad service classes such as "broadcasting," "land mobile" and "radionavigation." Although some service allocations are exclusive, many frequency bands are allocated for shared use by several services. For non-exclusive allocations, three priorities are established: "primary," "permitted" and "secondary." The first two have equal status except that in the preparation of frequency plans the "primary" service has priority. Stations of "secondary" service are required to protect "primary" or "permitted" stations against harmful interference. In addition, the Convention establishes certain minimum technical standards and provides methods for eliminating or minimizing interference and for registration of fre-

81. *E.g.*, Coase; Metzger & Burrus; Rosenblum, *Low Visibility Decision Making by Administrative Agencies: The Problem of Radio Spectrum Allocation*, 18 AD. L. REV. 19 (1965) [hereinafter cited as Rosenblum].

82. Radio Regulations, Dec. 21, 1959, 12 U.S.T. 1761, T.I.A.S. No. 4892.

83. Radio Regulations, Dec. 21, 1959, 12 U.S.T. 2377, T.I.A.S. No. 4893.

84. Partial Revision of Radio Regulations, Geneva 1959, and Additional Protocol, Nov. 8, 1963, 15 U.S.T. 887, T.I.A.S. No. 5603.

85. For purposes of allocation the world is divided into three regions which *very* roughly are: region 1—Europe and Africa; region 2—Asia and Australia; and region 3—North and South America. Article 5, nos. 125-36.

quencies with the International Frequency Registration Board, an organ of the International Telecommunications Union, which in turn is an organ of the United Nations.

The Geneva Convention makes provision for regional and bilateral agreements among members so long as such agreements are consistent with the Convention. The United States is a party to many such agreements,[86] some of the more noteworthy being the North American Regional Broadcasting Agreement between the United States, Canada, Cuba, Dominican Republic and the United Kingdom on behalf of Jamaica and the Bahama Islands;[87] the United States-Mexico Agreement on Radio Broadcasting;[88] the Canadian-United States Television Allocations Agreement;[89] and the United States-Mexico UHF and VHF television allocations agreements.[90]

Within this international framework, domestic frequency allocations and management are subject to the dual authority of the FCC and the OTM. The discussion which follows describes briefly the basic allocations process with respect to the private sector and the federal sector, as well as the coordination between the two. No attempt will be made to go into extensive detail with respect to the particular procedures and operational policies relevant to the allocations process. Even to list all of the pertinent regulations, manuals, and policy directives would be an exhaustive task—and largely a fruitless one from the standpoint of examining the basic institutional structure and processes.

A. Spectrum Management in the Private Sector

Three very broad classifications of services have been established for purposes of allocating frequencies among nonfederal users as well as for regulating and licensing: (1) Common Carrier, (2) Safety and Special Services and (3) Broadcast. Each of these broad classifications is in turn broken down into more specific categories of services. For example, the Safety and Special Radio Services includes: (1) Industrial Radio Services, (2) Public Safety Radio Services, (3) Land Transportation Radio

86. For a current list see 47 C.F.R. § 2.603 (1968).
87. Nov. 15, 1950, 11 U.S.T. 413, T.I.A.S. No. 4460.
88. Jan. 29, 1957, 12 U.S.T. 734, T.I.A.S. No. 4777.
89. June 23, 1952, 3 U.S.T. 4443, T.I.A.S. No. 2594.
90. Ultra High Frequency Channel Allocation Agreement with Mexico, July 16, 1958, 9 U.S.T. 1091, T.I.A.S. No. 4089; Border Television Assignment Agreement with Mexico, April 18, 1962, 13 U.S.T. 997, T.I.A.S. No. 5043.

Services, (4) Marine Radio Services, (5) Aviation Radio Services, (6) Citizens Radio Services, and (7) Amateur Radio and Disaster Communications Service.[91] Finally, each of the Safety and Special Services is further subdivided. For example, the Industrial Radio Service includes some 10 services: (1) Petroleum Radio Service, (2) Forest Products Radio Service, (3) Special Industrial Radio Service, (4) Manufacturing Radio Service, (5) Power Radio Service, (6) Business Radio Service, (7) Motion Picture Radio Service, (8) Relay Press Radio Service, (9) Industrial Relocation Service, and (10) Telephone Maintenance Radio Service.[92]

1. *Service Allocations*

Allocations planning, development of technical allocation standards, consideration of international treaty matters, and coordination with the executive are all a part of the initial responsibility of the Frequency Allocation and Treaty Division of the Office of the Chief Engineer. Allocations among the various services and among classes of users within each service are handled through administrative rule-making proceedings. The rule-making procedures, conducted in conformance with section 4 of the Administrative Procedure Act,[93] characteristically entail widespread participation by members of the industry with some limited participation by members of the public. Although participation is in many cases confined to submission of written comments, oral argument is frequently permitted in major proceedings. Also, since rule-making proceedings are not generally "restricted" proceedings within the meaning of the Commission's *ex parte* communications rules,[94] direct, off-the-record contact with the Commission by interested persons may be permissible. However, rule-making proceedings may be subject to the prohibition against *ex parte* contracts where (1) the proceeding involves a particular contest of issues among parties or between interested parties and the Commission, or (2) the Commission in its notice of rule-making has expressly restricted the proceeding, requiring all communications to be made on the record.[95]

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91. *See* 33 FCC ANN. REP. 88-105 (1967).
92. 47 C.F.R. §§ 91.251-.755 (1968).
93. 5 U.S.C. § 553 (1964).
94. *See* 47 C.F.R. §§ 1.1201-.1251 (1968). *See generally Ex Parte Presentations*, 1 F.C.C. 2d 49, 5 P & F RADIO REG. 2d 1681 (1965).
95. Sangamon Valley Television Corp. v. United States, 269 F.2d 221 (D.C. Cir. 1959). The Commission has not promulgated rules applicable to rule-making proceedings generally, but has indicated its intention to specify on an ad hoc basis those rule-making proceedings

The basic structure of allocations and the division of the spectrum among the different services in the private sector has been largely fixed since 1949.[96] Very broadly, the spectrum, from .01 to 90,000 mc, is divided as follows:[97]

Allocation	*Frequencies* (mc)	*Percentage of total spectrum*
Government	17,667.3	19.6
Non-Government	11,485.3	12.8
Broadcasting	517.0	0.6
Land Mobile	42.7	0.1
Others (miscellaneous; *e.g.*, aeronautical, maritime, amateur, citizens radio astronomy)	10,874.6	12.1
Nonallocated	26.0	0.03
Shared (Government and non-Government)	60,872.4	67.6

The controversy with respect to private user allocation—principally that of accommodating the growth of the land mobile users—has focused primarily on the portion of the spectrum between 30 and 960 mc,[98] particularly on the 470-890 mc band which is currently allocated exclusively to UHF television. The nonbroadcast users—chiefly land mobile—have fought vigorously for reallocation of a major segment of this band to nonbroadcast use.

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to which *ex parte* prohibitions will be applied. *Rule Making Procedures*, 30 Fed. Reg. 9277, 5 P & F RADIO REG. 2d 1701 (1965). Some rule-making proceedings such as those establishing rates are required by statute to be decided on the record after notice and hearing. These are, of course, subject to the *ex parte* rules. 47 C.F.R. § 1.1207 (1968).

96. 32 FCC ANN. REP. 48-49 (1966); General Mobile Radio Service, 13 F.C.C. 1190 (1949).

97. Derived from 47 C.F.R. § 2.106 (1968). Frequencies are given to the nearest tenth of a megacycle and percentages to the nearest tenth percentile.

All frequencies below 25 mc are included within the "shared" category. Most of these are shared by Government and non-Government users, although this is not specifically indicated in the rules. It should be noted that although these figures include all frequencies up to 90,000 mc, all frequencies above 40,000 mc, except for a two mc band assigned for radio astronomy, are used only for amateur or experimental purposes. The 50,000 mc above 40,000 are included in the "shared" category.

98. Broadcasting and Government users have 55.3 per cent and 25.8 per cent of this portion of the spectrum respectively. Some 8.2 per cent is shared use; 4.4 per cent is allocated to land mobile; 3.5 per cent to "other" (mostly aeronautical and maritime) and 2.8 per cent is not allocated. *See* OFFICE OF TELECOMMUNICATIONS MANAGEMENT, REPORT ON FREQUENCY MANAGEMENT WITHIN THE EXECUTIVE BRANCH OF THE GOVERNMENT 10, App. 2 (1966) (The OTM figures have been adjusted to reflect the recent transfer of 26 mc from Government to private use).

In its 25 to 890 mc proceeding in 1964[99] the Commission declined to do so but proposed instead to meet the immediate needs of land mobile users by "channel splitting" in one important band of frequencies already allocated, a measure recently put into effect,[100] and to continue to study other possible measures including shared use of some television channels. However, more recently the Commission has instituted rule-making proceedings to investigate possible reallocation of the upper UHF TV band to land mobile use in part as a consequence of the Government's relinquishing some 26 mc above 890 mc from Government allocated frequencies to private use.[101] It has instituted similar proceedings to investigate the possibility of land mobile sharing of certain lower UHF frequencies as a "short term" measure.[102]

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99. *Report and Order, Allocation of Frequencies Between 25 and 890 mc*, 29 Fed. Reg. 4820, 2 P & F RADIO REG. 2d 1513 (1964). This proceeding was instituted in 1957 to review existing allocations policies and to examine all allocations made in this band. The Commission found that the land mobile services were not only making full utilization of their frequencies for a variety of important uses, but that they were looking forward to continuation and expansion of such uses. But the problem of finding spectrum space was not as easily resolved as that of identifying the need for it. There was only one existing source of additional usable but unused space—those frequencies between 470 and 890 mc allocated to UHF television. However, the Commission in 1964 concluded that, while reallocation of UHF television channels was "worthy of consideration" in 1957, since there was (a) uncertainty as to the viability of UHF television and (b) some possibility of expansion of the number of VHF channels available, subsequent developments were considered to have changed both of these circumstances. The OCDM had closed the door to any possibility of obtaining additional VHF channels, and the passage of the all-channel receiver law in 1962, 47 U.S.C. § 330 (1964), had made possible a viable VHF-UHF television system. These considerations, coupled with increased need for additional television services—commercial and educational—led the Commission to conclude that the 82-channel television system should be retained "as against usage of this frequency space for the other various purposes considered in this proceeding." 28 Fed. Reg. 4830, 2 P & F RADIO REG. 2d at 1541.

100. *Report and Order, Frequencies in 450-470 mc Band*, 13 F.C.C. 2d 866, 12 P & F RADIO REG. 2d 1556 (1968).

101. *Notice of Inquiry and Notice of Proposed Rule Making*, 33 Fed. Reg. 10807 (1968). The proposal, if adopted, would result in the reallocation of 40 mc for private land mobile use and 75 mc for common carrier use in the 806-960 mc band (some 26 mc remains allocated to the Government and the remainder of the frequencies now allocated to private use would not be modified). This would involve reallocation of UHF TV channels 70-83 to land mobile uses to be shared with television translators.

102. *Notice of Proposed Rule Making*, Dkt. No. 18261, F.C.C. 68-743 (July 17, 1968). The Commission's proposal is to study the possibility of shared use of certain of the lowest seven UHF frequencies in the

Once allocations are made among the various services, assignment of frequencies to individual users is made through licensing.[103] The processing of licenses is initially the responsibility of three service bureaus. Though detailed analysis of the licensing processes for the various services is beyond the scope of this article, a brief survey of broadcast and private land mobile services licensing may be helpful.

(a) Assignment to Broadcast Users

Licenses in the broadcast services are issued for a three year term, but are renewable, and generally renewed, over an indefinite number of terms. Applicants must satisfy a variety of nontechnical qualifications regarding citizenship, character (absence of some past misconduct such as violation of antitrust laws), financial matters (ability to construct and operate station), legality of operation (conformance with multiple ownership rules) and program proposals. If these qualifications are satisfied and the license application meets all technical specifications a license is normally issued unless the application is protested or a competing, mutually exclusive application is filed. In that case an adjudicative hearing may be required.[104]

Broadcast licenses confer exclusive use of the assigned frequencies within a specified area with the corresponding protection against co-channel and adjacent channel stations. Technical standards for frequency assignment and use vary greatly among the three broadcast services. The AM radio band—535-1605 kc—

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largest 25 urbanized areas where demands upon the spectrum are greatest. The Commission regards this proposal as a short term approach on the assumption that there is an immediate need for spectrum space for land mobile use and that the equipment changes by land mobile users to use these frequencies could be made easily.

103. An excellent general summary of the structure of broadcast licensing is set forth in W. JONES, CASES ON REGULATED INDUSTRIES 1050-76 (1967). A more detailed outline of the technical aspects of licensing on which the following discussion draws substantially is FCC OFFICE OF THE CHIEF ENGINEER, REPORT NO. F-6601, TECHNICAL ASPECTS OF CONSIDERATIONS OF FREQUENCY ASSIGNMENTS 9-20 (1965) [hereinafter cited as FCC REP. NO. F-6601]. The licensing standards, procedures and requirements for the Broadcast Service are set forth in 47 C.F.R. pt. 73 (1968).

104. On the requirement of hearing, see, *e.g.*, Ashbacker Radio Corp. v. FCC, 326 U.S. 327 (1945) (mutually exclusive applications); FCC v. NBC (KOA), 319 U.S. 239 (1943) (hearing on protest of electrical interference); Office of Communication of United Church of Christ v. FCC, 359 F.2d 994 (D.C. Cir. 1966) (hearing on public protest to program practices); Carroll Broadcasting Co. v. FCC, 258 F.2d 440 (D.C. Cir. 1958) (hearing on protest of economic injury).

is divided into 107 channels with 10 kc separation between assignable frequencies.[105] The channels are divided into three general classes: (a) clear channels for high-powered stations (Classes I & II) intended to provide primary (groundwave) and secondary (nighttime, skywave) service over an extended area; (b) regional channels for medium-powered stations (Class III) intended to provide primary service to larger cities and contiguous rural areas; and (c) local channels for low-powered stations (Class IV) intended to provide primary service only to a city or town and contiguous area. Each class of stations has well defined protected contours within which its signal is intended to be free of "objectionable interference"—as defined by the Commission's rules —from co-channel and adjacent channel stations. The degree of protection also varies depending on the class of station.

The FM band—88-108 mc—is divided into 100 assignable channels, each 200 kc in width. The first 20 channels are reserved for use by noncommercial, educational stations, the remaining 80 for regular commercial use. Somewhat analogous to the AM structure, commercial FM channels are divided into three classes, A, B, and C. Class A channels are designed for low-power stations intended to serve relatively small communities and surrounding area. Class B channels are designed for medium-power stations intended to serve a sizeable city or town or the principal city of an urbanized area. Class C channels are for high-power stations intended to serve a community or city and large surrounding areas. Noncommercial, educational FM stations operate with very low power on a fourth class of channel, Class D. Unlike the AM allocation scheme, however, commercial FM channels are assigned through rule-making proceedings to

105. The Commission has recently implemented a "freeze" on the filings of further applications for AM stations pending a study to determine whether:

> (i) a significant national need for new AM stations or major changes in existing stations which would not serve underserved areas still exists; (ii) presently available frequency space should be conserved for future use in developing areas and to eradicate what "white" area remains; (iii) any future allocation system should view AM and FM as a single aural service; and (iv) further AM assignments on a demand basis constitute unwise use of valuable spectrum space.

Report and Order, Freeze on AM Applications, 13 F.C.C. 2d 866, 867-68, 13 P & F RADIO REG. 2d 1667, 1669 (1968). The freeze is the second in recent years to be put on AM applications. The earlier freeze resulted in a tightening of technical and service needs criteria for AM licensing, *see Report and Order, AM Assignment Standards*, 2 Fed. Reg. 9492, 2 P & F RADIO REG. 2d 1658 (1964), but the number of AM stations has continued to expand greatly without, however, meeting the needs of populations in unserved ("white") or underserved ("grey") areas.

specific communities and can only be used in that community or within a 25 mile radius. The table of assignments is based on a system of minimum mileage separations between co-channel and adjacent channel stations. Protection against interference derives solely from these minimum mileage separations and from the specification of maximum power and antenna height for stations of the various classes. For assignment purposes the county is divided into three zones, I, I-A and II. Class A low-power stations operate solely on Class A channels in all three zones. Class B medium-power stations may operate on either Class B or Class C channels, but only in Zones I (roughly the northeast quarter of the country) and I-A (most of California). Class C stations may use either B or C channels, but only in Zone II, which is that portion of the country not in the other two zones. The mileage separation varies depending on the class of stations involved so that, for example, the co-channel separation between two A stations is 65 miles, and between a Class A and Class B it is 150 miles.

In television, there are 82 channels of 6 mc each. Channels two to four occupy 54-72 mc; channels five and six, 76-88 mc; channels seven to 13, 174-216 mc. The 70 UHF channels occupy a single band, 470-890 mc. As in the case of FM, television channels are assigned by rule-making to specific communities. The system of assignments is based on a plan of minimum mileage separation requirements similar to that for FM, but there is only a single class of service. As in the case of FM, television licensees are protected from interference solely by means of the minimum mileage separation requirements[106] and the specification of maximum powers and antenna heights. These three specifications—mileage separation, power, antenna height—vary depending on the channel involved and on the zone of the country. For television the country is divided into three zones, analogous to but not entirely identical with those for FM.

(b) Assignment to Private Land Mobile Users[107]

The licensing of private land mobile users varies consider-

106. In some exceptional cases the mileage separation requirements have been waived and "equivalent protection" provided by means of directionalization. *See generally Interim Policy on VHF TV Channel Assignments*, 29 Fed. Reg. 9942, 21 P & F Radio Reg. 1695 (1961).

107. On the technical standards and requirements for private land mobile licensing see FCC Rep. No. F-6601; 47 C.F.R. pts. 89 (public safety), 91 (industrial radio), and 93 (land transportation). No attempt has been made to describe the licensing of common carrier services, the

ably from the licensing of broadcasters. Licenses are generally issued for five year terms, but are renewable an indefinite number of times. Nontechnical qualifications, apart from that of citizenship, are virtually nonexistent and technical requirements are generally not exacting. If minimal technical requirements are met, a license is generally issued as a matter of course.

The principal bands allocated to non-Government land mobile use are 30-50 mc (alternate one megacycle segments are assigned to Government and non-Government respectively), 150.8-162 and 450-470 mc. As technology has progressed, the separation between channels has been reduced. The spacing varies, some services in the 150.8 mc band using frequencies separated by 15 kc, others by 30 kc. In the 30-50 mc band, 20 kc is the standard separation while in the 450-470 kc band, separation has now been cut to 25 kc.

Unlike broadcast and common carrier licensees, private land mobile frequencies are licensed on a nonprotected, nonexclusive basis. Thus individual users within a particular service and in a particular area share the frequencies on a "party line" basis. Also, some frequencies are assigned to two or more different services where the services tend to operate in different geographical locations.

Although individual users are not protected against interference, some measures are taken to minimize it. License applicants seeking assignment of a frequency must file a statement that existing licensees operating on the same or adjacent channels within a specified area have been notified of the application. Additionally, the applicant must submit a report based on a field study of the same area indicating the probability of interference to existing users. As an alternative, however, an applicant may submit a statement from a frequency advisory committee comprised of other users in the same service area which contains the opinion of the committee as to the most desirable assignment. Because of the expense of notification and engineering studies, the latter alternative is the prevailing method of frequency coordination. Although neither the applicant nor the Commission is bound by the recommendations of the coordinating committee, in practice the recommendations are accepted.

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standards for which are more akin to those for broadcast stations than private land mobile stations. *See generally* FCC REP. No. F-6601; 47 C.F.R. pt. 21 (1968).

In addition to user coordination, the Commission in some instances makes service assignments on a geographical basis. For example, the 30-50 mc band provides longer range communication for a given combination of power and antenna height than do higher bands. Accordingly, it is highly suitable to services requiring coverage over larger areas, such as police, highway maintenance or forestry-conservation. However, the band is also subject to long distance interference during periods of high solar activity. To prevent this effect, the Commission assigns one of these frequencies to a limited number of adjoining states and does not assign it again except to another group of states approximately 2,500 miles away.

2. *Supervision of Use*

Supervision of use and compliance with Commission regulations, licensing standards and policies are the initial responsibility of three major bureaus—the Broadcast Bureau, the Safety and Special Services Bureau and the Common Carrier Bureau—correspoinding to the three major services. In the Broadcast Service probably the most important method of supervision is the process of renewal by which the licensee has at least the burden of demonstrating compliance with regulations and regulatory policy.[108] However, renewal of individual licenses is the norm from which there are infrequent deviations.

License renewal is not the only means of ensuring compliance and, outside the Broadcast Service, is probably not even the most important means. The Commission's Field Engineering Bureau maintains a system of monitoring, inspecting and investigation of both broadcast and nonbroadcast stations, principally to detect unlicensed stations and to ensure compliance with noninterference and other technical regulations.[109] Where enforcement action may be warranted, the information gathered by the monitoring or inspection is forwarded to the bureau having primary responsibility for the service.[110] Violations are punishable by a variety of formal sanctions, including cease and desist orders for nonlicensed stations, license revocation, forfeiture, and even criminal penalties.[111] The FCC's monitoring capa-

108. *E.g.*, Office of Communication of United Church of Christ v. FCC, 359 F.2d 994 (D.C. Cir. 1966).

109. *See* 33 FCC ANN. REP. 106-16 (1967).

110. *Id.* at 110.

111. 47 U.S.C. § 312(a) (1964) (revocation); 47 U.S.C. §§ 312(b) & (c) (1964) (cease and desist order); 47 U.S.C. §§ 501, 502 (1964) (criminal penalties); 47 U.S.C. § 503(b) (1964) (forfeiture).

bility, however, is far from complete, particularly in the Safety and Special Services area where the number of users is vast and the nature of the use varied. Thus the Commission does not now have adequate information on frequency loads and utilization in the land mobilization services, although it has contracted for a partial study of the problem by the Stanford Research Institute.[112] It is understood, however, that this study is limited to quantitative loading and does not entail investigation into the manner in which frequencies are being used.

B. Spectrum Management in the Federal Sector

From 1922 to 1951, the President's powers over allocation and use of frequencies by the federal government under section 305[113] were implemented solely through IRAC, a committee comprised of the principal Government users, which assigned frequencies chiefly through coordination, negotiation and compromise among the users themselves. In 1951 IRAC was nominally placed under the direction of the Telecommunications Advisor, subsequently coming within the authority of the ODM, and still later the OCDM. Essentially, however, the process of allocation remained unchanged through these various reorganizations.[114] As earlier noted, in 1962 the President's authority under section 305 was delegated to the Director of the Office of Emergency Planning (now the Office of Emergency Preparedness). Also delegated to the Director were the telecommunications functions and responsibilities previously vested in the OCDM, including those contingent on a declaration of emergency by the President.[115] At the same time the position of Director

112. *See Notice of Proposed Rule Making*, Dkt. No. 18261, FCC 68-743 (1968). The Commission has undertaken some special monitoring studies of utilization. *E.g.*, FCC Office of the Chief Engineer, Report No. F-6701, Report and Analysis of New York City Monitoring Survey of 150.8-162.0 Megacycle Land Mobile Band (1967). Also some private studies have been made of frequency usage in certain cities and areas.

113. 47 U.S.C. § 305(a) (1964). Under § 305(d), the President also has authority to authorize use of low power radio by foreign governments at their embassy or legation in Washington, D.C. In addition, he has emergency powers to control all communications in the event of war or national emergency under § 606. *See* 47 U.S.C. §§ 606(a), (c), (d) (1964).

114. For a description of IRAC and its processes under the OCDM, see 1959 Hearings on Spectrum Allocation at 144-65.

115. Exec. Order No. 10995, §§ 3, 4, 3 C.F.R. § 535, 47 U.S.C. § 305 (1962). Later in 1962 subsection (d) was added to section 305 to give the President authority to license foreign governments to operate low

of the Office of Telecommunications Management (OTM) was created within the OEP, with a general mandate to:

> (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. (b) Develop data with regard to United States Government frequency requirements. . . . (d) Contract for studies and reports related to any aspect of his responsibilities.[116]

The Director was instructed to establish interagency advisory committees and working groups composed of representatives of interested agencies and consult with them as necessary. IRAC was directed to serve the Director in an "advisory capacity" as he "deems it necessary."[117] The order further expressly authorized the Director of OEP to redelegate to the OTM the responsibility for frequency assignments and the authority under section 606. This redelegation followed.[118]

Subsequent responsibilities delegated to the OTM include "policy direction of the development and operation" of the National Communications System which President Kennedy in 1963 ordered to be established to link together the communications facilities and components of the various federal agencies.[119] The Director is, in addition, an advisor and liaison between the President and Comsat.[120] Finally, he is the Special Advisor to the President on Telecommunications.[121]

As presently organized,[122] the Office of Telecommunications Management is comprised of five principal staff assistants and a

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power radio stations at their legations or embassies in Washington. This authority was subsequently delegated to the OEP by Exec. Order No. 11084, 3 C.F.R. § 719, 47 U.S.C. § 305 (1963) and redelegated in turn to the OTM.

116. Exec. Order No. 10995, § 2, 3 C.F.R. § 535, 47 U.S.C. § 305 (1962).

117. *Id.* § 5.

118. OEP Order No. 1100.

119. *White House Memorandum*, Aug. 21, 1963, 28 Fed. Reg. 9413 (1963). The directive grew out of the Cuban missile crisis when President Kennedy found he was unable to contact U.S. ambassadors and other U.S. representatives abroad.

120. Exec. Order No. 11191, § 2(b)(4), 3 C.F.R. § 273 (1965).

121. *White House Memorandum, supra* note 119.

122. For a current organization chart see *Hearings on Government Use of Satellite Communications Before the Military Operations Sub-*

legal counsel; three "directorates" which handle (a) national communications, (b) research and technology, and (c) frequency management; and two major committees, a Frequency Management Advisory Council and IRAC. As of August, 1968, the staff numbered less than 70 persons, of whom about half are clerical.

IRAC, subject to the direction and authority of the OTM Director, remains the primary organ for making routine frequency assignments. IRAC is presently comprised of representatives of the Departments of State, Treasury, Army, Navy, Air Force, Interior, Agriculture, Justice, Commerce, Transportation (U.S. Coast Guard and the FAA), the AEC, USIA, NASA and GSA. Though these are the principal Government users of the spectrum, they are not the only users. Others, such as the Federal Reserve Board, obtain representation on the Committee when applying for an assignment.[123] The officers and subcommittee members of IRAC are chosen by the OTM Director from the staff of the Frequency Management Directorate.

The IRAC substructure consists of the FAS, the Technical Subcommittee, the Spectrum Planning Subcommittee, the International Notification Group, the Secretariat, two special groups—the Aeronautical Assignment Group and the Military Assignment Group—and ad hoc groups established as needed.

The detailed processes of frequency assignment are not as easily described as the institutional structure. In marked contrast to the processes of the FCC, which are open to public notice and, in some measure, to participation by "interested" members of the industry and even the general public, those of IRAC/OTM are not open to public view or public participation. In 1965 the OTM did issue a "Manual of Regulations and Procedures for Radio Frequency Management," a codification of the regulations, procedures and policy guidelines for the assignment and use of frequencies. However, except for a few excerpts of very general import, the manual is classified.

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comm. of the House Comm. on Government Operations, 89th Cong., 2d Sess. 265 (1966). The discussion of the OTM and IRAC organization and functions which follows is based principally on a memorandum furnished by the OTM and draws also upon discussions with the Director and staff members and with the FCC liaison representative.

123. The FCC has not been a member of IRAC since 1952, but the FCC is represented on the full committee by a liaison. *See* text accompanying notes 128-29 *infra*. Also, somewhat curiously, the FCC does have membership on the Frequency Assignment Subcommittee (FAS) since its monitoring activities give it the status of a frequency user.

Within the limits set by this classification the process is described generally by the OTM as follows:

> [T]he Government agency analyzes its mission to determine communications-electronics requirements. Next, the agency frequency manager examines applicable policies, rules, regulations, frequency allocations, available equipment, frequencies already available to the agency, and determines that frequency support is possible before obligating funds for development or procurement of communication-electronic equipment or station sites. When it is evident that frequency support is not available without an impact on existing operations, the IRAC and/or the DTM are consulted. When new types of communications-electronics equipments are required an electromagnetic compatibility analysis is made . . . to determine whether there will be an adverse impact upon existing operations. . . .
>
> In cases where frequency support is considered possible without any electromagnetic incompatibility, the agency frequency manager consults frequency assignment usage records, makes the necessary technical studies, selects possible frequencies, makes any required engineering evaluations, coordinates the selection with the other agencies involved at the local and headquarters level, and files an application with the Executive Secretary of the IRAC. If the proposal is not technically compatible with existing authorizations, adjustments are made or the process is repeated until a solution is found.
>
> The FCC Liaison Representative to the IRAC submits memoranda requests for coordination on non-Government use of frequencies in shared frequency bands, and in other bands where he considers that there might be incompatibility with Government operations.
>
> The IRAC Secretariat screens the applications for accuracy, completeness, and compliance with procedures; assigns a docket number for identification; includes the particulars on the Agenda of the IRAC Frequency Assignment Subcommittee (FAS), including an ADP interference analysis for high frequency use when appropriate; and distributes a copy of the Agenda to each agency and the FCC for study.
>
> The Frequency Management Directorate, OTM, meanwhile reviews the Government applications to ensure adequate justification, compliance with policy and regulations, technical appropriateness, probability of major problems, and whether there is a technical conflict with assignments of non-members of the IRAC.
>
> Each month the FAS . . . considers pending items and takes agreed action within policy guidance. When policy guidance is needed [or] agreement cannot be reached [or] the IRAC has so directed, or an agency so requests, applications are referred to the IRAC. . . . Matters which cannot be resolved within the IRAC . . . or when so directed by the DTM, or (when) requested by an agency, are referred to the Frequency Management Directorate where they are resolved or referred to the DTM. Matters of considerable importance, such as changes to the Table of Frequency Allocations, significant Government use of non-Government frequency bands, and advice to the Department of State, are recommended to the DTM for consultation with the Commission or other appropriate agencies. . . .

> As soon as possible after each FAS/FCC meeting, the IRAC Secretariat enters the action into the Master Record, prepares, has printed, and submits the list of Frequency Assignments to Government Radio Stations to the DTM for consideration for approval. Following DTM approval, distribution of the list is made to the agencies.[124]

It should be noted that if a Government agency is greatly dissatisfied with a decision of the OTM Director it can take the matter to the President. This would be an extreme situation, however, and the present Director has indicated that no such appeal to the President has been made since he took office in 1964.[125]

As the individual assignment proceedings are classified, so, of course, are the specific assignments themselves. However, a general listing of the number of frequency assignments, as of January, 1968, is given by the OTM as follows:[126]

Department or Agency	Frequency Assignments		
	Number*	%*	Rank
Agriculture	4,345	3.7	7
Air Force	24,916	21.2	1
Army	19,927	16.9	4
Atomic Energy Commission	2,763	2.4	8
Coast Guard, DOT	(5,868)	(5.0)	
Commerce	2,595	2.2	9
Federal Aviation Administration, DOT	(17,688)	(15.0)	
Federal Communications Commission	706	0.6	
Federal Reserve System	22	0.02	
General Services Administration	50	0.04	
Health, Education & Welfare	250	0.21	
Housing & Urban Development	1	0.001	
Interior	6,943	5.9	5
International Boundary & Water Commission	19	0.016	
Justice	5,209	4.4	6
Library of Congress	1	0.001	
National Science Foundation	68	0.06	
National Aeronautics and Space Administration	895	0.76	
Navy	22,083	18.7	3
Office of Economic Opportunity	11	0.009	
Post Office	99	0.084	
Smithsonian Institution	15	0.013	
State	58	0.05	
Tennessee Valley Authority	488	0.42	
Transportation	23,675	20.1	2

124. OTM memorandum, *supra* note 122. The process appears to be basically similar to that under the OCDM. *See* 1959 Hearings on Spectrum Allocation at 144-65. For a description of the typical clearance procedures within user agencies, see Coase at 22.

125. It is not known how many occasions there have been when IRAC could not resolve an assignment matter creating the necessity for a personal decision by the Director himself, or even by the Associate Director. Reportedly there have been few such occasions.

126. OTM memorandum, *supra* note 122.

(other than USCG & FAA)	(119)	(0.1)	
Treasury	1,142	0.97	
U.S. Capitol Police	3	0.003	
United States Information Agency	1,162	0.99	10
Veterans Administration	138	0.117	
Architect of the Capitol	1	0.001	
Dual Listings (Q & W)	272	0.27	
All Government Agencies	16	0.013	
Other	100	0.085	
Totals * (exclude figures in parentheses)	117,973	100	

Formerly, once assignments were made there was no system for monitoring or periodic review to ascertain frequency load or utilization. Indeed, there was no monitoring capability for even the detection of interference. Such monitoring as was done was by the FCC. The present Director has undertaken to correct this. Contracts have been let for private interference monitoring in selected locations. More important from the standpoint of general spectrum management, the OTM has undertaken a program of inspecting Government stations and reviewing frequency utilization with a view to making a complete review of frequency usage every five years.[127] The effectiveness of this program and the sufficiency of OTM resources to carry it out successfully have yet to be established.

C. Coordination Between FCC and OTM/IRAC

Since the FCC and OTM have independent jurisdiction over the same radio spectrum, obviously it has been necessary to establish means of coordinating their respective allocations activities. From 1928 to 1952 such coordination was effected through FRC/FCC membership on, and subsequent chairmanship of, IRAC, despite some hostility on the part of federal agency members to the FCC's role.[128] After 1952, the FCC established liaison with IRAC which continues today. Liaison is the responsibility of the Frequency Allocation and Treaty Division of the Office of the Chief Engineer. The Assistant Chief Engineer and other representatives of the Division sit on IRAC and on each of its subcommittees, including the important FAS. FCC representatives also attend meetings of the OTM's Frequency Management Advisory Council.[129]

127. *Id.* The present Government list is to be made "current" by 1972.
128. *See* note 22 *supra*, and accompanying text.
129. 33 FCC Ann. Rep. 126-27 (1967).

The need for coordination is more or less continuous. There are some bands above 25 mc which have been allocated for exclusive federal or nonfederal use by FCC-IRAC agreement;[130] these do not necessitate routine coordination. However, all of the bands below 25 mc and a large number of those above are allocated for shared use. Prior to making allocations in these bands, the FCC notifies the FAS to such effect. Similarly, federal agencies requesting frequencies in the shared bands notify the FCC. The FCC also receives notification through its FAS liaison representative. The FCC has no vote on executive assignments and vice versa, but a negative reaction apparently does result in the assignment being reviewed by the OTM Director.

In addition to routine allocations matters, coordination is also necessary to resolve interference problems between private and federal stations. These problems are resolved by liaison at the subcommittee level.[131] At the policy level the FCC maintains liaison directly with the Director of the OTM[132] and it is at this level that major allocations planning, such as adjustments in the allocations for exclusive federal or nonfederal use, is considered.

IV. THE SYSTEM'S CRITICS AND THE CASE FOR ADMINISTRATIVE REFORM

As evidenced in the earlier resumé of past critical studies and reform proposals, the most enduring feature of radio spectrum regulation has been criticism of the regulatory processes and an insistent call for reform. The following discussion is an attempt to evaluate some of the central criticisms and the case for administrative reform.

A. Dual Versus Unified Control of Spectrum Allocations

To most critics, the central flaw of the regulatory system has been the division of allocations authority between the FCC and the executive, which allegedly is administratively inefficient insofar as it requires continuous coordination, results in at least partially overlapping functions and creates a potential for conflict between two agencies exercising "coequal" jurisdiction. In

130. The establishment of exclusive bands goes back to a 1940 FCC-IRAC agreement (still in force), set forth in 1959 Hearings on Spectrum Allocation at 124.

131. 33 FCC Ann. Rep. 126 (1967).

132. *Id.* at 127.

the judgment of a number of the critics, this division of authority is conducive to the dominance of executive interests over private interests in the use of the spectrum.[133] These criticisms have furnished the basic rationale for proposals to eliminate the division of authority and unify authority and responsibility in a single agency, department, board or other form of "spectrum czar."

1. *Executive Control*

Most advocates of unified authority have urged a single executive agency or department. Various approaches have been suggested. One possibility is simply to expand the present office of telecommunication management to give it central authority to allocate frequencies within both the private and federal government sectors. Alternatively, a separate office within the Executive Office of the President could be established with similar authority and responsibility.[134]

The proposal most frequently urged is the creation of an "independent" executive "super board" or agency outside the Executive Office of the President—again with authority to allocate frequencies to federal and nonfederal users. Both the Sadowski proposal in 1950 and the Harris proposal in July, 1959, would have substantially adopted such a scheme.[135] This is also the evident thrust of the President's Task Force proposal. It would establish a single "spectrum manager" in the executive branch which would have full allocations authority and other telecommunications policy and planning responsibilities.[136]

An alternative to the "super board" is the creation of a cabinet-level "Department of Telecommunications" to take over the allocation, policy and planning functions of the FCC, the Di-

133. *See* critical studies reviewed in pt. 1, 1215-23. *See also* MILITARY OPERATIONS SUBCOMM. OF THE HOUSE COMM. ON GOVERNMENT OPERATIONS, 88th Cong., 2d Sess. 86, SATELLITE COMMUNICATIONS (1964); Coase at 20-40; Metzger & Burrus at 79-83; Rosenblum at 49, 53. The President's Task Force draws similar conclusions as to the inefficiency of dual jurisdiction although not apparently as to executive dominance. *See* the summary of its findings in BROADCASTING MAGAZINE, Dec. 16, 1968, at 30-38.

134. Compare Statement of the present OTM Director in *Hearings on Government Use of Satellite Communications Before the Military Operations Subcomm. of the House Comm. on Government Operations*, 90th Cong., 1st Sess. 72 (1967).

135. *See* notes 30 & 74 *supra*, and accompanying text.

136. *See* BROADCASTING MAGAZINE, Dec. 16, 1968, at 36, 38.

rector of the Telecommunications Management and IRAC.[137] These allocation and planning functions might also be vested in an existing department such as the Department of Transportation.[138] Proponents of these plans generally assume, however, that the regulatory and licensing functions would remain with the FCC or another independent agency.

To date, proposals to unify authority and responsibility for private and Government frequency use within the executive have not attracted widespread support. However, the recent endorsement by the President's Task Force of the idea of unifying all allocations authority in a single "spectrum manager" promises to stimulate renewed study of such proposals. Since only brief summaries of the Task Force report are now available it is not possible here to discuss its findings in full detail, but the general case which has been advanced for such a reorganization can be examined.

(a) Administrative Efficiency

As a theoretical matter, I cannot disagree with those who criticize the system of divided authority and responsibility on grounds of inefficiency, since there are burdens of continuous coordination and waste of manpower and agency resources inherent in the overlapping and duplication of functions.

However, the problem of administrative efficiency can be exaggerated. If one examines the respective staffs and activities of the FCC and the OTM, it is not evident that consolidation would substantially reduce the effort currently required to make allocations decisions. Because of the disparate interests and problems reflected in allocations to Government agencies and private users, apart from housekeeping details, there is little promise of meaningful economy of effort—particularly when one

137. This appears to be the thrust of the proposal by Doyle, but the discussion is too general to know precisely what is proposed. Doyle, *Do We Really Need a Federal Department of Telecommunications?* 21 FED. COM. B.J. 3, 14-16 (1967).

138. Compare suggestions of the present Director in *Hearings on Government Use of Satellite Communications*, *supra* note 134, at 72-73. The proposal is to make the OTM, but not the FCC, a part of the Department of Transportation, presumably assimilating both into DOT. Congressman Dingell, Chairman of the Subcommittee on Regulatory Agencies of the House Select Committee on Small Business, has recently proposed legislation to transfer all allocations authority to the Secretary of Commerce. BROADCASTING MAGAZINE, Jan. 13, 1969, at 36. An alternative Dingell proposal would retain the dual jurisdiction but reorganize regulation in the private sector. *See* note 229 *infra*.

considers the already meagre staffs and resources committed to spectrum management in these two agencies.[139]

At the policy level some economies might be achieved by the elimination of the need for interagency policy coordination. Yet, although some policy matters obviously affect both the Government and private sectors, there are many which do not. In such cases any attempt to unify all policy judgment might result in positive diseconomies. As pointed out by one observer:

> If central control is instituted, the necessity of referring all questions to the center involves expense in compiling and transmitting information and delay before decisions can be made.[140]

The problem here is not merely a problem of institutional size—which in itself should probably not be a major concern—[141] but is rather the problem of effective, efficient central control over the diversified interests reflected by all frequency users.

Finally, if one looks at the size of the FCC and the OTM, whose *combined* appropriations in fiscal 1968 were only slightly more than $21 million,[142] it must be asked whether administrative efficiency is not a distinctly minor problem. For anyone really concerned about efficiency and economy in government, surely there are fatter fish to fry.

(b) Effective Overall Spectrum Management

A far more credible argument for unified authority is that divided jurisdiction does not ensure adequate supervision over spectrum utilization generally because there are no effective means of ensuring fair, efficient, socially desirable division of frequencies between Government and private use.[143] According to some critics this has resulted in the Government—particularly the military—taking too much for itself. Occurrences such as the Bendix incident,[144] where the FCC was "persuaded"

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139. *See* note 243 *infra*.

140. Coase at 39. Coase evidently believes this true not only of central authority over all federal and private users, but also of central control over federal users alone.

141. Doyle, *supra* note 137, at 3, 15.

142. BUREAU OF THE BUDGET, BUDGET OF THE UNITED STATES GOVERNMENT 216, 420 (1968).

143. This is one of the basic conclusions of the President's Task Force. *See* BROADCASTING MAGAZINE, Dec. 16, 1968, at 36. *See also* TELECOMMUNICATIONS: A PROGRAM FOR PROGRESS at 204-06; Coase at 37; Metzger & Burrus at 78-84; 1959 Hearings on Spectrum Allocation at 34.

144. *See* Bendix Aviation Corp., Bendix Radio Div. v. FCC, 272 F.2d 533 (D.C. Cir. 1959), *cert. denied*, 361 U.S. 965 (1960). *Bendix* involved the reallocation of two frequency bands, 420-50 mc and 8500-9000 mc, previously shared by private aviation and Government users. In April,

to relinquish private frequencies to exclusive Government users, is an often cited[145] example which tends to support the conclusion that the present system is, in practical effect, biased towards the Government. On the other hand, FCC requests for Government frequencies have been rejected.[146] The recent action of the OTM in releasing to the FCC for private use 26 mc previously allocated exclusively to the Government[147] suggests the possibility of a more enlightened cooperative arrangement between the FCC and the executive than has prevailed heretofore. But this unprecedented generosity does not alter the teaching of the past: the system tends to favor Government users without assuring that Government need is paramount to private need.

However, insofar as unreasonable discrimination against private use has resulted from the present structure, it seems naive to suppose that establishing central authority *in the executive* will alleviate the problem. It is far more likely that this

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1958, the Office of Defense Mobilization, acting on behalf of the executive, urgently "requested" that the FCC withdraw these bands from private use, thereby permitting exclusive Governmental use for "vital defense" needs—"radiopositioning." The FCC granted the request and issued an order withdrawing the frequencies from private use. Bendix and others challenged the order on several grounds, including failure to comply with the public notice provisions of the Administrative Procedure Act, failure to grant a hearing, and on the ground that the Commission's reallocation of the frequencies was arbitrary. All of the challenges were rejected, and the court upheld the Commission's actions as reasonable:

> We are satisfied that the Commission, confronted by the demands of the Executive for exclusive use of the frequency in question, had thus undertaken to do whatever was reasonably open to it in the light of national defense needs. . . . [T]he Commission possesses the authority to . . . accommodate the requirements of the Government itself.

Id. at 542.

The principal criticism of the Commission's action in the *Bendix* controversy is not that it acceded to the interests of national defense, but rather that it appeared not to give any close scrutiny to the basis for or validity of the defense claims asserted. *See* 1959 Hearings on Spectrum Allocation at 87-88. Insofar as this may carry the implication that the FCC did not know to what use the frequencies were to be put or the general need for the frequencies, this criticism is probably unjustified. In fact the Commission has access to information regarding executive use and is not without some capability for ascertaining need. Whether it might have been a little too "compliant" with executive wishes in this case is another matter, but it is unknown since the court honored the privilege asserted by the OCDM and held all particulars to be secret information affecting national defense.

145. *E.g.*, Coase at 29-30; Metzger & Burrus at 75-77.

146. A Commission request for VHF channels was turned down in 1956, *see* 1959 Hearings on Spectrum Allocation at 138, and again in 1960, 26 FCC ANN. REP. 44 (1960).

147. *See* note 101 *supra.*

will only exacerbate it. First, even though the executive agency having control would presumably not be a user, there would likely be strong, continuous pressure by sister agencies and departments to give them priority over competing private uses. And in cases where the demand is represented to be of vital importance to the federal government—particularly to national security or foreign policy or other comparable high aims—it strains belief to suppose that the allocation agency would presume to examine the demand with complete objectivity. There is likely to be no more critically objective or carefully balanced judgment than the FCC has rendered in acquiescing to the frequency demands of the Government. Nor would the judgment be any more subject to public scrutiny. Indeed, it could be less so. In the *Bendix* case at least the existence of the conflict—if not the particulars of the Government demands—was made public. It is doubtful that even this would have been known had the decision been made within a single, executive agency with indisputable jurisdiction. Second, even if such an agency attempted to be completely objective and independent and gave federal user demands the same critical, detached analysis that it gave competing private users, the fact remains that the pretense of independence would in the final accounting be largely just a pretense, *i.e.*, subject to presidential control, and dealing with such giant users as the military, Department of State or NASA, even a *cabinet-level* department of telecommunications would not be complete master of its own house.

Apart from the possibility of achieving a more equitable distribution between Government and private users of those frequency bands which are allocated on an exclusive-use basis, it has been contended that unifying allocations authority in a single executive agency would facilitate cooperative sharing of bands between executive users and private users. The President's Task Force study notes, for example, that certain Government frequencies go largely unused in areas where private needs are greatest; in such areas a sharing arrangement between Government and private users might alleviate the scarcity problem. However, it also notes there is at present no *single* agency which can make a decision implementing such a solution, and therefore all allocations authority should be unified in a single executive agency.[148]

Without disputing the Task Force findings as to the need and feasibility of such sharings, I do not see how they lead to the

148. *See* BROADCASTING MAGAZINE, Dec. 16, 1968, at 36.

remedy proposed. The Task Force recommendation must rest on two assumptions: (a) that the present system of divided authority either precludes or hinders such a sharing arrangement, and (b) that the creation of unified authority in the executive would overcome whatever obstacles presently stand in the way of such a sharing arrangement. Either of these assumptions would seem difficult to substantiate. If such sharing is technically feasible, there is no reason to believe that private users would object to sharing what are now exclusively Government frequencies; nor does it seem probable that the FCC would interpose any objection. The only source of objection would seem to be the Government users and/or the OTM, which now has full authority over Government allocations. The option would thus seem to lie entirely with the executive even under the present system of divided jurisdiction. It is thus difficult to see what obstacle to a solution is presented by the present institutional structure, and it is equally difficult to see how giving the *executive* control over private allocations would remove whatever obstacles may presently exist. Arguably, unified authority in a single agency might facilitate the formulation and implementation of the technical and other conditions and requirements of such a sharing arrangement. But, why unify control in the executive branch? Why not in an *independent* agency free of the serious conflict-of-interest problems inherent in granting the executive unqualified authority to manage the entire spectrum?

(c) Improved Allocations Within Private and Federal Sectors

If it is unlikely that unified executive allocations control would bring about a better allocation of the spectrum between federal and nonfederal users, it is even less likely that allocations among federal or nonfederal users as a class would be improved over the present system of divided FCC-executive authority. The same considerations which lead to the expectation of continued dominance of major federal users over nonfederal users leads equally to the conclusion that among federal agencies, the major agencies would predominate over those with less exalted missions but with perhaps equally important frequency needs. If the Department of the Army, for example, made a demand for a frequency band "in the interest of national security," it seems highly improbable that a demand by the General Services Administration for the same frequencies would fare any better under such a system than would that of the VHF broadcasters or private land mobile users.

It has also been argued that the vesting of authority in an executive agency would improve allocations among nonfederal users. Although the Cooley Committee in 1959 concluded that the FCC's allocations responsibilities were "well carried out,"[149] this is disputed by many of the FCC's critics. But whether one accepts the Cooley Committee's judgment or that of FCC critics, the FCC's performance seems of doubtful relevance to the present issue.

Consider first the charge of bias. Nonbroadcast users in particular have long felt that the FCC has been too broadcast oriented[150] and have accordingly favored proposals to transfer the FCC's allocations authority to an executive department. Whether this criticism of FCC allocations policy is justified is beyond the concern of this article. The point here is simply that if such deficiencies do exist they can be altered within the existing institutional framework. That a policy may be deficient—even if it reflects a basic bias of the agency's members—scarcely warrants reorganization unless it can be demonstrated that the agency's performance is somehow the product of a defective administrative form. This has not been demonstrated. It is noteworthy that the Hoover Commission Task Force on Regulatory Commissions, although critical of the FCC's performance in a number of areas, concluded that these failures did not reflect a flaw in the administrative form, and recommended retention of the independent commission in its present form as the appropriate agency for regulation in the field.[151] This conclusion seems no less correct as applied to the Commission's handling of frequency allocations than it is as applied to its

149. 1959 Hearings on Spectrum Allocations at 50.

150. *See, e.g.*, the criticism by one of the principal advocates for the land mobile users:

> In the band 25 - 890 megacycles (mc) . . . we find less than 41 mc available for land mobile operations, 492 mc allocated to TV, and 20 mc allocated to FM broadcasting. This allocation—41 mc versus 512 mc—is regarded by the mobile radio services as grossly unsatisfactory and unfair and is, in the legal sense, arbitrary, unreasonable and discriminatory.

Courtney, *The Double Standard*, 20 FED. COM. B.J. 152-53 (1966). *See also* Courtney & Blooston, *Development of Mobile Radio Communications—The "Work-Horse" Radio Services*, 22 LAW & CONTEMP. PROB. 626 (1957), criticizing the FCC's allocations policies and also its policy of licensing land mobile users on a nonprotected, party-line basis.

151. COMMISSION ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT COMMITTEE ON INDEPENDENT REGULATORY COMMISSIONS, TASK FORCE REPORT 96 (1949). *See also* the supporting STAFF REPORT ON THE FCC 22 (1948), which concluded that the defects which it found "do not appear to be inherent in the Commission form."

regulatory responsibilities in general. If, as sometimes charged, the Commission is "biased" toward broadcasters, I cannot understand how the Commission's particular form or organization has contributed to it. Certainly the FCC's status as an independent agency does not *inherently* incline it to one particular group or another or immunize it from legal or political change. If Congress or the courts directed the Commission to give higher priority to nonbroadcast users, surely it would be done. There has been no such directive despite occasional statements of dissatisfaction by some Congressmen. Indeed, it seems fair to say that Congress has been no less preoccupied with broadcasting than has the FCC.

Further, and most important, insofar as it reflects an attempt to purge the FCC of bias, elimination of the FCC's independent status and reconstitution of its allocations functions and responsibilities within the executive is not likely to result in any real purification of the administrative process. It may be noted that the criticism of special interest bias is not one uniquely directed at the FCC; it is a criticism which has been leveled at the independent regulatory agencies generally, and urged as a reason for abolishing them and revesting their authority in the executive, where it will not be dominated by special interest groups.[152] However, Professor Jaffe seems entirely correct in his statement that this sweeping attack "transcend[s] analysis."[153] It is more ideological than analytical. Jaffe notes:

> [I]ndustry representation is not peculiar to the agencies. It is to my mind not a little curious that the critics limit their examination of this phenomenon to the independent agency. I would suppose that it was necessary first to establish the executive agencies as the norm and then to show how the independent agencies tend to depart from that norm. Yet anyone who follows the activities of the Department of Agriculture, for example, comes to feel (though this too is no doubt an exaggeration) that the Department is a glorified farmer's lobby.[154]

Other examples might be added to Jaffe's. Few would suppose that the Commerce Department is other than strongly loyal to, if not an apologist for, business, or that the Labor Department is other than pro-labor or that the Highway Administration is not warmly responsive to highway interests. Moreover, such loyalties are not confined to executive agencies with largely "pro-

152. *E.g.*, M. BERNSTEIN, REGULATING BUSINESS BY INDEPENDENT COMMISSION (1955).

153. Jaffe, Book Review, 65 YALE L.J. 1068, 1076 (1956).

154. *Id.* at 1071.

motional" responsibilities. Consider, for example, the Department of Health, Education and Welfare's Food and Drug Administration, whose empathy with the drug industry has been the subject of intensive criticism by many, including Congress.[155]

It is possible, moreover, that placing full authority in the executive might have the effect of enhancing special interest bias and making it less observable and less subject to public or Congressional correction. This possibility is suggested by experience with the process of executive decisions in the international air carrier field.[156] Indeed, the susceptibility of the executive to the same pressures, influences and biases to which the FCC is subject is compounded by the fact that, as a user of frequencies, the executive has its own inherent bias favoring federal uses over nonfederal users.

2. *Independent Agency Control*

Many of the conflict-of-interest problems which militate against unifying authority in the executive might be eliminated by vesting unified authority in the FCC. This possibility was considered in the Stewart Report in 1951, but was rejected on the grounds that the FCC would not be accepted as an impartial arbiter, and that such a scheme would improperly intrude upon executive power, particularly in the fields of foreign relations and national defense.[157]

(a) The Objections on Principle

Analytically, the objections to unified FCC authority are not entirely convincing. First, contrary to the suggestion that the FCC might not be accommodating to federal users, the history of FCC-executive relations suggests that the FCC may have been *too* accommodating to federal users.[158] However, the Stewart Report suggests that whether or not the FCC would be an "ob-

155. *See* M. MINTZ, THE THERAPEUTIC NIGHTMARE 93-146 (1965). One critic succinctly characterized the attitude of the FDA under former Commissioner George Larrick as "one of sweetness and light, togetherness, of loving one's neighbor [industry and Congress] as one's self." *Quoted id.* at 95.

156. *See* notes 167-72 *infra*, and accompanying text.

157. TELECOMMUNICATIONS: A PROGRAM FOR PROGRESS at 196-97. Following release of the Board's Report, a bill to vest full allocations authority in the FCC was introduced in the House but seems to have gone nowhere. *See* 1959 Hearings on Spectrum Allocation at 135.

158. The classic example is the *Bendix* litigation. *See* note 144 *supra*.

jective" arbiter, it would *not be accepted* as such. This seems an inadequate basis for rejecting control by an independent agency. It is clear that the establishment of *any effective* control on executive uses would not be warmly greeted by those whose interests are adversely affected.

In any event, there are executive controls. First, a measure of control is inherent in the presidential nomination of FCC members. While this is not an effective means of ensuring day-to-day control, it does seem adequate to assure that FCC members are receptive and responsive to federal government needs in the long run. Second, it is assumed that the presidential emergency powers as set forth in section 606 of the Communications Act would be retained.

The objection that unified FCC authority would constitute an unwise intrusion upon presidential prerogatives with respect to national defense and foreign policy is also unconvincing. Radio frequencies are, of course, vital to the military, and frequency allocations decisions are therefore obviously important to national defense. But this is true of countless other activities—for example, the manufacture of steel—which are not committed to the exclusive control of the executive as matters of presidential prerogative. Similarly the need for international agreement on radio frequency allocations ties such allocations to foreign affairs, but no more so than international trade, which is not committed to presidential prerogative.

It has even been suggested that the allocation and control of frequencies to federal users, at least insofar as national defense and foreign policy is concerned, is *constitutionally* vested in the President, that the Act of 1934 and its predecessors merely recognized this authority.[159] Whatever the ambit of the intrinsic constitutional powers of the President, it would scarcely appear this broad.[160] It is difficult to take seriously the suggestion that Congress could not exercise its own constitutional prerogatives to dispose of and control federal resources or otherwise regulate interstate commerce, or to delegate it to an agency of its choice, thereby divesting the President of authority.[161] In any event,

159. 1959 Hearings on Spectrum Allocation at 59, 61 (statements of Mr. Everitt).

160. *See* Youngstown Sheet & Tube Co. v. Sawyer, 343 U.S. 579 (1952).

161. *See id.* at 593, 602 (concurring opinion of Justice Frankfurter); *id.* at 655, 660 (concurring opinion of Justice Burton).

any possible constitutional necessity for giving the President authority is satisfied by his emergency powers under section 606 of the Act.

Wholly apart from these separation-of-powers considerations, it has been contended by one critic of the FCC that although unified allocations authority is desirable and should be separated from presidential direction, the FCC is not a fitting repository in view of its poor performance in exercising its existing regulatory authority. Accordingly, a new independent agency should be established to exercise FCC and executive allocations.[162] Concededly, the FCC's performance has in many areas been deficient, but as pointed out above,[163] the deficiencies have not demonstrated any fatal institutional flaw, and there is no reason to suppose that a newly created agency—within or without the executive branch—will be any less susceptible to the ills that have beset the FCC.

(b) Practical Problems

Although the objections to vesting full allocations authority in the FCC are analytically unconvincing, a sense of the practical indicates that they nevertheless would certainly prevail to defeat any such proposal. Given the present system of military and foreign policy priorities and the executive prerogatives of implementation, it is unreal to expect that the FCC, or any independent agency, would be given the proposed authority.[164] Indeed, to divest the executive of powers which are asserted to be vital to national defense, foreign policy and other important executive functions would, I think, require nothing less than heroic effort by Congress, even were the spirit willing.

Although a vesting of complete and final allocations authority in the FCC might be precluded by practical politics, a recent proposal by Professors Metzger and Burrus might be politically

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162. Rosenblum at 53-54. Compare the recent proposal by FCC Commissioner Bartley to create a "Telecommunications Resources Authority" within the Legislative Branch. "Let's Abolish the FCC," Address by Commissioner Robert Bartley before the Illinois Broadcaster's Association, May 23, 1968, FCC Release No. 17280. *See* notes 228-41 *infra*, and accompanying text.

163. *See* notes 150-56 *supra*, and accompanying text.

164. It is probable that the FCC would not welcome such authority. The Commission opposed such a bill in 1951. 1959 Hearings on Spectrum Allocation at 135.

acceptable. Concluding that unified FCC authority would be preferable to the other unification proposals, they support vesting initial authority in the FCC. But, in order to assure that "security considerations have a 'proper voice' in the determination of frequency allocations," this authority would be subject to review and final decision by the President at the request of the Director of Telecommunications Management.[165]

While this proposal might make FCC authority politically acceptable, it does so by extracting from the FCC the very independence the need for which precipitated the placement of this authority somewhere other than in the executive in the first place. In effect the executive would be left with full control—a control which could only have the result of continuing the preferred status of federal users. Metzger and Burrus concede this might be a possibility but dismiss it as an insignificant problem:

> For if Congress were to legislate the changes in the Federal Communications Act which would be necessary to create the system herein recommended, it would be making it quite clear to all agencies and to the President that it expected the FCC's frequency allocation determination to be the final decision except in the unusual case where the President, upon the carefully considered advice of his DTM, was convinced that an important national interest urgently demanded that the FCC be overridden. In consequence it is very doubtful that the DTM would seek to have the President overturn every FCC determination which might be less than satisfactory to the requesting federal agency, and still more unlikely that the President would do so even were he so advised.[166]

This conclusion seems rather overidealized in its assumptions regarding the workings of the executive in general and the anticipated presidential deference to vague congressional restrictions on executive prerogative in particular. To suggest that the President would override an FCC decision only when some "important national interest" was at stake is simply to hide behind a phrase. "Important national interest" is as flexible as "public interest, convenience and necessity;" who can say what it encompasses? Of course, one would not expect every frustrated federal user automatically to seek White House review. But any user agency which believes strongly in the importance of its frequency application will find little in the phrase "important national interest" to deter it from pressing its claim as far as possible. Nor is it likely that channeling such appeals through the OTM will

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165. Metzger & Burrus at 92-94.
166. *Id.* at 94.

greatly alter the situation. If the Department of the Army, for example, strongly desired review of an adverse FCC decision, it seems naive to suppose that the OTM would oppose review, or could in any event preclude it. And if the Secretary of the Army, through the OTM or over its opposition, seeks reversal of an FCC allocation I would not look for the FCC to emerge victorious whatever the merits of the case from an objective viewpoint. In short, it seems improbable that this scheme would prove any different in ultimate effect than giving full authority to the executive in the first instance.

The Metzger-Burrus proposal might well produce a situation similar to that in the certification of overseas and foreign air transport. Under the Federal Aviation Act such functions as the issuance, denial, transfer, amendment, and suspension of certificates for overseas or foreign air transport are subject to the approval of the President.[167] The presidential authority is paramount; his decision is absolute and immune from judicial review.[168] With such powers the White House[169] has become in effect a decision-maker rather than a reviewer. Moreover, the White House has not been reluctant to exercise its authority, and from a number of notable instances it is evident that the White House decisions, which need not be explained or justified, are often made on grounds unrelated to foreign policy or other "national interest" considerations which provided the basis for granting this power to the President.[170]

Perhaps the most significant aspect of this scheme is that there is no effective restraint on the exercise of the White House authority. No matter how demonstrably wrong the decision—

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167. 49 U.S.C. § 1461 (1964).

168. Chicago & Southern Airlines, Inc. v. Waterman S.S. Corp., 333 U.S. 103 (1948). The Board's action was held similarly unreviewable in *Waterman* on the ground that otherwise, until the President acted, there could be no final order. *Id.* at 112-13. However, recent lower court decisions have created an exception to this rule of nonreviewability when the Board is found to have acted outside its statutory authority. *E.g.*, Pan American World Airways, Inc. v. CAB, 380 F.2d 770 (2d Cir. 1967); American Airlines, Inc. v. CAB, 348 F.2d 349 (D.C. Cir. 1965).

169. "White House" more properly defines the repository of the authority, since the President personally is not commonly involved in the decisions. H. FRIENDLY, THE FEDERAL ADMINISTRATIVE AGENCIES 154 (1962).

170. *See* Landis, *Meddling From the White House*, N.Y. Herald-Tribune, March 20, 1958, at 18, *excerpted in* W. GELLHORN & C. BYSE, CASES ON ADMINISTRATIVE LAW 996-99 (4th ed. 1960).

indeed, no matter how palpable an abuse of authority—there is no review[171] and in most cases not even public scrutiny. Not only has this power of White House "approval" been used to substitute secret, executive fiat for open, reasoned decision-making in the matter of international air routes, it has provided a basis for White House meddling in domestic air routes as well, even though the White House lacks statutory authority in this latter area.[172]

The case for unification is not made stronger by the analogies which Metzger and Burrus invoke. They point out that prior to the Federal Aviation Act,[173] responsibility for air safety was divided between the executive and the CAB in much the same manner that frequency allocations authority is now divided.[174] This bifurcated authority proved inadequate to assure air safety and this led to the vesting of unified air safety control in a single independent agency, the FAA. The successful unification of authority in the FAA might appear to offer support for the soundness of their proposal.[175] The crucial difference,

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171. *See* TWA v. CAB, 184 F.2d 66 (2d Cir. 1950).

172. *See* Landis, *supra* note 170. Such White House intermeddling is suggested in Western Airlines, Inc. v. CAB, 351 F.2d 778 (D.C. Cir. 1965). The Board, in an airline route proceeding to consider additional trans-Pacific service to Hawaii and beyond, released two decisions. One related to service to Hawaii—a domestic route not subject to presidential approval—and a second to service beyond Hawaii—an international route subject to presidential approval. The Board awarded new domestic route authority and recommended to the President the award of new international routes. The White House rejected the Board's recommendation regarding the International routes and, in its notification to the Board, expressed the "hope" that the additional authority between the mainland and Hawaii would be reconsidered. The Board thereupon terminated the domestic route proceeding and Western's award was not allowed to become effective. The only explanation was that the domestic and international aspects were "intimately intertwined"—a fact not supported by the record and which apparently went unnoticed until the White House expressed its "hope" for a termination of the route award. Although the court of appeals fortunately reversed the Board's termination order, the case remains as an example of the dangers inherent in the vesting of regulatory authority in the White House when such authority is subject to rules other than its own sense of propriety.

173. 72 Stat. 731 (1958), *as amended*, 49 U.S.C. § 1301-1657 (Supp. 1968).

174. Metzger & Burrus at 86-89.

175. The control of air safety by the FAA does, of course, entail a degree of control over private and federal use, but it does not entail the granting or denial of use itself. A communications analogy would not be the power to allocate frequencies, but rather, for example, the power to impose regulations concerning type of transmitters or regulations governing operation of transmitters to curb interference.

however, is that when unified authority was vested in the FAA, it was not subject to presidential review or approval as proposed for frequency allocations.[176] The appointment of a military man as Deputy Administrator to represent the military establishment does not change the fact that the "military representative" had no independent authority, no right to appeal to the President and, indeed, was expected to have first loyalty to the agency.[177] Of course, with the reorganization of the FAA into the Department of Transportation, unified control has now shifted to the executive[178]—a shift which Metzger and Burrus themselves would evidently agree would not be wise in the case of frequency allocations for reasons discussed earlier.

The second analogy which Metzger and Burrus draw in support of their proposal is the regulation of the Atomic Energy Commission (AEC). Under the Atomic Energy Act of 1954,[179] the AEC has broad regulatory and licensing powers over virtually all activity relating to the development, use and control of atomic energy. Because of the obvious importance of atomic energy to the military, the Act provides that:

> The Commission shall advise and consult with the Department of Defense. . . . If the Department of Defense at any time concludes that any request, action, proposed action, or failure to act on the part of the Commission is adverse to the responsibilities of the Department of Defense, the Secretary of Defense shall refer the matter to the President whose decision shall be final.[180]

The control of atomic energy is not, however, analogous to the present problem. First, the authority to refer AEC decisions to the President for final decision is limited to decisions which are adverse to the responsibilities of the Department of Defense. Those matters to be considered Defense responsibilities are limited to:

> military applications of atomic weapons or atomic energy including the development, manufacture, use, and storage of atomic weapons, the allocation of special nuclear material for military research, and the control of information relating to the

176. Also, it should be emphasized that the actions of the FAA continue to be subject to judicial review and control, 49 U.S.C. § 1655 (c) (Supp. 1968), which would not evidently be the case under the Metzger and Burrus proposal giving the President final decisional authority.

177. *See* 49 U.S.C. § 1343(a)(2) (1964). *See also* H.R. REP. No. 2360, 85th Cong., 2d Sess. 9 (1958).

178. 49 U.S.C. § 1655(c) (Supp. 1968). Executive control is not complete, however. *See* 49 U.S.C. § 1654(f) (Supp. 1968).

179. 42 U.S.C. §§ 2011-2296 (1964).

180. 42 U.S.C. § 2037 (1964).

> manufacture or utilization of atomic weapons. . . .[181]

Second, the mere fact that the military and the President possess certain prerogatives with respect to atomic energy development means little. It is necessary to know something about the success of this system. Unfortunately, Metzger and Burrus do not inform us how the Presidential prerogative in the AEC example has worked: whether it has, for example, resulted in giving the military an *undue* influence in atomic energy development, or whether—as they imply—it has not. Without attempting to explore this question here, two points might be noted: First, unlike the situation in the radio communications field there is no inherent conflict between civilian and military aims in the use and development of atomic energy. Indeed, in its early years the AEC's primary function was that of a "weaponer for the military."[182] While this narrow purpose has been expanded to include civilian use since 1954,[183] it has been said that "the weapons program remains the firm anchor which gives the Commission a sense of security concerning its role on the national scene."[184] Second, where conflicts have arisen between military and civilian atomic energy programs—as over the establishment of priorities—the military seems to have generally, if not invariably, prevailed.[185] I do not suggest here that either of the above are the results of presidential prerogative or undue subordination of civilian interests to military programs. But these considerations do indicate that the AEC example is not a persuasive precedent for executive review of FCC radio allocations.

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181. *Id.* The Senate Report on the Predecessor Act of 1946, substantially similar in this regard, indicates that referral was to be confined to these matters. *See* S. REP. No. 1211, 79th Cong., 2d Sess. 12 (1946).

182. H. ORLANS, CONTRACTING FOR ATOMS 4, 204 (1967).

183. H. GREEN & A. ROSENTHAL, GOVERNMENT OF THE ATOM: THE INTEGRATION OF POWERS 252-54 (1963).

184. *Quoted in* H. ORLANS, *supra* note 182, at 204. *See also* D. LILIENTHAL, CHANGE, HOPE AND THE BOMB 115-16 (1963) (emphasis added):

> The AEC functions chiefly as a designer, developer, maker, and tester of atomic weaponry. . . . [A]s the reason for a sharp separation between civilian and military atomic roles has faded, so the distinctive role of the AEC has changed. *The AEC as weaponer has in fact become very much a part of the military establishment*, serving the needs and goals of that military establishment *as defined by the* military . . . . Realistically, the AEC essentially is not too different from any major technical contractor to the Defense Department in the area of missiles . . . or some other weapons system.

185. *See* H. Orlans, *supra* note 182, at 175-78.

B. Reform Within the Present Institutional Framework of Dual FCC-Executive Authority

After a brief review of the frequency allocation problem, the Military Operations Subcommittee of the House Committee on Government Operations in 1964 concluded that "dual control . . . seems to be a permanent feature, and therefore the need is one of better coordination and administration."[186] Based on previously explored considerations, this conclusion seems correct not only as a practical assessment of political realities but also as a statement of normative principle. It remains therefore to consider the possibilities of institutional improvement within the present allocations framework.

1. *Reorganization of Executive Authority*

Finding that a central problem lay with the management of frequency allocations among federal users, the Stewart Report in 1951 concluded that the first necessary step in reform was the creation of a Telecommunications Advisory Board within the Executive Office of the President, which would exercise positive management over governmental allocations and use. The Advisory Board would then cooperate with the FCC in dividing the spectrum between Government and non-Government users and in planning general spectrum utilization.[187]

The Office of Telecommunications Advisor was subsequently created and given substantially the responsibilities outlined by the Stewart Report. Although the office showed early promise of improvement in executive management, the position was later downgraded by transfer of its functions to the ODM, and later to the OCDM.[188] That the impairment of the Telecommunications Advisor's effectiveness is attributable solely to these subsequent reorganizations seems doubtful. Rather, the reorganizations merely reflect a more basic problem—lack of real presidential concern over the need for strong, central management and control of executive frequency allocations and use. Congress proved to be no more responsive to this need. When the Bowles and Cooley Committees advocated stronger central management

186. Military Operations Subcommittee of the House Committee on Government Operations, 88th Cong., 2d Sess., Satellite Communications 86 (1964).

187. *See* notes 39-48 *supra*, and accompanying text.

188. *See* notes 54 & 55 *supra*, and accompanying text.

authority in accordance with the Stewart Report recommendations, the response was discussion without action.[189] In 1962, the present Office of Telecommunications Management was created in the Office of Emergency Planning. However, this has not appreciably quieted the critics who insist that little has changed.[190]

In terms of formal power, the delegation of frequency assignment authority to the OTM is somewhat broader than that delegated the Telecommunications Advisor, and subsequently to the OCDM, in 1951. Whereas the latter delegation is couched in terms of "advising and assisting" the President, the OTM is authorized to *act for* the President. In this respect the scope of the formal OTM delegation is at least as broad as that proposed by the Stewart Report, so often raised as the standard.[191] Practically, the difference between "advising and assisting" and acting for the President may seem a thin one.[192] However, it has been suggested that there is inadequate authority to control federal users effectively. If this ever was a problem, it scarcely seems a problem today, since the delegation of authority to the OTM under the 1962 reorganization clearly provides adequate authority.

But other factors have retarded the effectiveness of the OTM. The first Director, Dr. Stewart, resigned after a little more than a year in office because, it is said, "he couldn't convince anybody why he was at the White House,"[193] because he could not get the money he needed, and because of reported difficulties with the military.[194] For a year after Stewart's resignation the post remained vacant—a circumstance scarcely conducive to effective development of the OTM. In April, 1964, the present Director, Lieutenant General James D. O'Connell—retired head

189. *See* notes 60-74 *supra*, and accompanying text.

190. *See, e.g.*, Doyle, *Do We Really Need a Federal Department of Telecommunications?* 21 FED. COM. B.J. 3, 14 (1967); Metzger & Burrus at 45.

191. Stewart, *Telecommunications Management: The Strategy of Organizational Location*, 23 PUB. ADM. REV. 149, 151 (1963). Stewart states that in 1962 the delegation actually went beyond what was proposed in 1951, but a careful reading of the 1951 report of the Communications Policy Board indicates that the proposed advisor's formal authority and responsibilities would have been substantially similar.

192. However, Dr. Stewart mentioned the distinction. *Id.*

193. *Hearings Before the Subcomm. on Communications and Power of the Senate Comm. on Commerce*, 89th Cong., 2d Sess. 71 (1966) (remarks of Senator Pastore).

194. BROADCASTING MAGAZINE, April 22, 1963, at 5.

of the Army Signal Corps—was appointed.[195]

Whether there has now developed an adequate vehicle for effective spectrum management is an open question. Because of the record of executive frequency management one is inclined to view the OTM's own list of accomplishments and its future plans and programs[196] with some skepticism. Nevertheless, it is possible to be too cynical and thus ignore the existence of some important organizational improvements since 1964. These include tigher control over IRAC processes, increased control over assignments and technical standards and an ambitious program of reviewing agency utilization. Whether these and other measures will be permanently successful in achieving more effective executive spectrum management and use is uncertain. However, many of them are similar to those contemplated by the Stewart Report in 1951, and do represent important steps forward.

There is nevertheless a case for more basic reorganization of the executive management function. Several executive structures have been suggested by Director O'Connell which generally parallel the proposals for unifying FCC and executive authority, except that the dual FCC-executive jurisdiction would continue:

> One alternative is to leave the office as it is—which has certain disadvantages. . . . OEP is in a different line of work. They are concerned with emergency planning; accordingly, they have somewhat different interests and are guided by different priorities.
>
> Another alternative is to make the office a part of the Department of Transportation. This . . . presents a great many problems. There are bound to be difficulties in developing an overall set of national policies in a situation where one department is charged with coordinating the communications policy of others. Also there could be conflicts of interest if one user of the spectrum were in a position to exercise the President's authority over all of the other departments.
>
> The third alternative is to combine Telecommunications with the Office of Science and Technology in the Executive Office of the President. The two offices have similar responsibilities in considering the impact of research and the pace of technology on national policy. . . .
>
> The fourth alternative is to create a separate agency reporting directly to the President.[197]

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195. MILITARY OPERATIONS SUBCOMMITTEE, *supra* note 186, at 83.

196. *See* OFFICE OF TELECOMMUNICATIONS MANAGEMENT, REPORT ON FREQUENCY MANAGEMENT WITHIN THE EXECUTIVE BRANCH OF THE GOVERNMENT 16-17 (1966).

197. *Hearings on Government Use of Satellite Communications Before the Military Operations Subcomm. of the Comm. on Government Operations*, 90th Cong., 1st Sess. 72-73 (1967).

(a) The Need for Reorganization

With respect to the alternative of retaining the present OTM structure, General O'Connell's views on the tenuous relationship between OTM and OEP seem valid, although major change would probably not be warranted were it not for other, stronger considerations. First, there is the matter of budget and staffing. The current budget of less than $2 million and staff of less than 70 persons[198] seem woefully inadequate to achieve and maintain effective management of Government frequency assignments and use. In this vein it is noteworthy that the inability to obtain adequate funds was a major factor in Dr. Stewart's resignation as Director in 1963.[199] A significant contributing factor to this disability, according to Dr. Stewart, is the location of the OTM in the OEP with the result that "its financial support is affected by the Congressional response to the needs of the total OEP operation."[200] While it is true that the OTM budget is identified and justified independently of the OEP's,[201] as long as the OTM remains without a visible identify of its own, it can be expected that its budget will conform to that of the OEP generally; the total OEP appropriation for fiscal 1969, *including that of the OTM*, is less than $10 million.[202]

A second consideration underscoring the need for reorganization is the need to enhance the prestige and stature of the office and its functions. This need was viewed by the Stewart Report in 1951 as a central one: the aim was to provide a director who "was right next door to the President, [who] . . . had the ear of the President—nobody . . . between him and the President."[203] When the Office of Telecommunications Advisor was created in 1951 there was no intervening agency between it and the President. However, President Eisenhower felt that too many persons were reporting directly to the President, and shifted the Advisor's functions to the ODM, and later to the OCDM.[204] The obvious result was a reduction in the office's stature and importance. As Dr. Stewart has noted:

198. The staff figure includes clerical help.
199. Stewart, *supra* note 191, at 154.
200. *Id.*
201. *Hearings, supra* note 197, at 74.
202. Independent Offices and Department of Housing and Urban Development Appropriation Act of 1969, 82 Stat. 937. The OTM's 1969 appropriation is $1,675,000, of which $500,000 is earmarked for research.
203. 1959 Hearings on Spectrum Allocation at 78 (remarks of Dr. Stewart).
204. Stewart, *supra* note 191, at 151.

> [t]he direct contact with the President which was the source of strength for the office was lost and with it much of the benefit which had been sought by the Communications Policy Board.[205]

This prestige and stature must be re-established if the OTM is to function effectively, particularly in dealing with high level executive agencies such as the State and Treasury Departments, NASA and—most of all—the military establishment. So long as the OTM remains a mere adjunct of the OEP, with its responsibilities at least partially submerged in that office, the development of a strong, independent and prestigious body is jeopardized.

(b) The Reorganization Alternatives

What kind of reorganization is best suited to these aims? The present Director has suggested three other possible alternatives:[206] transferring the OTM to the Department of Transportation (DOT), merging the OTM and the Office of Science and Technology or creating a new office. These do not necessarily exhaust all of the possibilities, but they state the basic alternatives.

(1) OTM as Part of the Department of Transportation

A transfer of the OTM to DOT seems the least attractive possibility. The only discernible connection between telecommunications management and the functions of DOT is that DOT, particularly the FAA, is a major federal user of frequencies. But far from being a reason for assimilation of the OTM into DOT, this is one of the most persuasive reasons against it. As General O'Connell acknowledges, this would create a major conflict of interest. Even apart from this problem, however, it is difficult to envision how this scheme would serve the aims of establishing the independent identity and enhancing the prestige of the OTM. The assumption underlying such a proposed transfer appears to be that it would extend the prestige and importance of a cabinet-level position to the OTM, thereby further strengthening it. But this is highly questionable. Consider first the relationship between OTM and DOT in terms of present budget alone. The appropriation for DOT for fiscal 1969 exceeds *$6 billion*; OTM's is less than *$2 million*, less than half

205. *Id.*
206. *See* text accompanying note 197 *supra.*

the budget for one of DOT's smaller offices, the National Transportation Safety Board.[207] The transfer of the OTM to DOT is likely to result in little more than the creation of another bureau or office in an immense administrative superstructure. OTM would be placed on a par with such subordinate offices as the Safety Board, the Federal Railroad Administration, or at best the Highway Administration. Far from enhancing or establishing a visible identity for telecommunications management, such a transfer would probably bury that which now exists. If the present subordination of OTM to OEP has impaired its ability to attract needed budget support, only greater impairment can result from forcing the OTM to compete with such departments as the FAA or the Highway Administration, both of which possess strong political support.

Finally, even assuming that the OTM could maintain a substantial independent identity and importance within DOT, the assumption that it could effectively carry out its present responsibilities must be questioned. In 1946 a study conducted for the Bureau of the Budget discouraged the placing of allocations control in a single department because "the regulation of one department by another generally has been quite unsuccessful."[208] While there are no doubt exceptions, this appraisal seems valid insofar as it applies to the situation in which one "independent" executive agency or department has authority to regulate important functions of another. If so, an attempt to give DOT the responsibility of assigning and managing the use of radio frequencies by other agencies such as NASA, the State Department or the military service agencies, will not produce the kind of strong central management that is needed. More probably the "management" will degenerate into the type of "cooperative coordination" which has characterized the work of IRAC and resulted in a failure to bring about a more effective management of executive use of the spectrum. This problem does not necessarily exist, however, if the regulating agency is located in the Executive Office of the President and speaks with his direct authority and support. The authoritative influence wielded by the Bureau of the Budget is a case in point, and this is the rationale of the Stewart Report's recommendation for

207. Department of Transportation Appropriation Act of 1969, 82 Stat. 654; Independent Offices and Department of Housing and Urban Development Appropriation Act of 1969, 82 Stat. 937.

208. 1959 Hearings on Spectrum Allocation at 132.

locating the telecommunications advisor as close to the President as possible.

(2) Combining the OTM with the Office of Science and Technology

The merger of the OTM and the Office of Science and Technology (OST) offers some advantages: it would keep the OTM within the Executive Office of the President, and it would strengthen its technological research capability. However, such a merger seems ill-designed to meet the essential aims of reorganization. If the OTM is to accomplish more efficient, effective utilization of the spectrum by executive agencies, its primary function must be an operational, not a research, function. It must *manage* the use of the spectrum; it must be designed to facilitate and implement authoritative decision-making in the assignment of frequencies, and the establishment of use priorities. A merger with the OST might tend to obscure these management responsibilities through an excessive emphasis on technological research. Scientific research has not yet been able to eliminate the core problem of spectrum scarcity and seems unlikely to do so in the foreseeable future; also science cannot establish priorities among competing users with technologically equivalent claims.

Moreover, even conceding the need for more research as an adjunct of policy planning and use management, there is nothing uniquely important in the research capability of the OST. Since its concern goes far beyond telecommunication technology[209] only a portion of OST's capability would be useful to telecommunications. More important, however, in terms of money committed to telecommunications research, various other executive agencies already spend several times as much on telecommunications research as the OST spends on its entire research effort.[210] Thus, even if additional research capability is as important as seems to be implied in the proposal for merger with OST, one can think of better partners for the OTM than the Office of Science and Technology.

(3) Establishment of an Independent Office

The only satisfactory alternative to the present OTM struc-

209. *See Hearings, supra* note 197, at 74-75.
210. *Cf.* Stewart, *supra* note 191, at 154.

ture is the establishment of an independent office. Since the OTM is largely an autonomous entity within the OEP, such a reorganization need entail little if any additional overhead costs. Any additional costs would be due to increased operational and research capability, which would be the case under any reorganizational scheme.

In light of the previous discussion regarding regulation of one executive agency by another, it seems essential that the new agency be retained in the Executive Office of the President and have a direct presidential delegation of telecommunications responsibility and authority. The reorganization should be accomplished by executive order, thereby assuring maximum flexibility to make further organizational adjustments as required.

The extent to which the creation of an independent office outside the OEP should also call for internal reorganization of the present OTM processes and structure would necessarily be the subject of a full management study. There is, however, one extremely important facet of the existing process which cannot be ignored when contemplating OTM reorganization: the secrecy of the processes by which assignments are made and reviewed and the absence of any opportunity for participation by "interested parties." A major criticism of the existing process is what one commentator has called "low visibility decision-making."[211] Perhaps a more accurate characterization would be the *invisibility* of decision-making. Without question, an executive user's mission often prevents disclosure of particular information regarding its frequency. In such cases secrecy is essential and there is no way in which the assignment or utilization can be held open to public scrutiny. The suggestion that the handling of such assignments be subject to the formal requirements of the Administrative Procedure Act[212] can scarcely be taken seriously, since the requirement of nondisclosure of all essential facts concerning the assignment[213] would preclude any meaningful pub-

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211. Rosenblum at 19-21.

212. *Id.* at 53-54. In fairness to Professor Rosenblum, it should be noted that his proposal to apply APA requirements is meant to apply generally to all frequency assignments; perhaps he would acknowledge an exception in the case of the military and other "secret mission" users, although he does not do so in his article.

213. *See, e.g.*, United States v. Reynolds, 345 U.S. 1 (1953); Republic of China v. National Union Fire Ins. Co., 142 F. Supp. 551 (D. Md. 1956). These privileges are preserved by the "Freedom of Information Act," 5 U.S.C. § 552(b) (1) (Supp. 1968).

lic notice, participation or scrutiny. However, acknowledging the necessity for secrecy in the assignment of frequencies to some Government agencies, the pervasive secrecy which presently hides the allocation process and its results from public participation and scrutiny should not be condoned. One difficulty is that there has been no distinction between, for example, assignments to the Post Office and to the Air Force. Such distinctions need to be drawn to ensure, to the greatest possible degree, public participation in and scrutiny of the processes of frequency management where no claim for secrecy can reasonably be honored.[214]

2. *Reorganization of the FCC*

Few agencies of Government have been so doggedly pursued by critics as the FCC. Almost since its creation it has been a favorite whipping boy of Congress, the bar, the academe and the general public. Most of the criticism has been directed at its licensing and regulatory activities within the broadcast field. For example, its licensing procedures have been the subject of repeated and intensive criticism, as have been most of its related regulatory policies.[215] More generally, the Commission has been repeatedly attacked for its failure to formulate and implement policy planning. In 1949, the Hoover Commission Task Force on Regulatory Commissions concluded that "the Commission has . . . been found to have failed both to define its primary objectives and to make many policy determinations required for efficient

214. This would not necessarily entail the establishment of elaborate formal proceedings. Certainly there should not be any process of adjudication as is required in formal FCC licensing hearings. But in cases where there can be no valid claim of secrecy, public notification of assignment applications, together with opportunity of "interested parties" to file written comments or objections should be provided for. *Cf.* section 4 of the APA, 5 U.S.C. § 553 (Supp. 1968). In addition, information pertinent to such assignments should be subject to disclosure in accordance with the "Freedom of Information Act." 5 U.S.C. § 552 (Supp. 1968).

215. For a small sample of the critical literature covering a broad range of Commission activities, see H. FRIENDLY, THE FEDERAL ADMINISTRATIVE AGENCIES 53-73 (1962) (licensing; comparative criteria); AD HOC ADVISORY COMMITTEE ON ALLOCATIONS TO THE SENATE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE, 85th Cong., 2d Sess., ALLOCATION OF TV CHANNELS (Comm. Print 1958) (licensing policies; television allocations); Robinson, *The FCC and the First Amendment: Observations on 40 Years of Radio and Television Regulation*, 52 MINN. L. REV. 67 (1967) (program regulation); Note, *The Darkened Channels: UHF Television and the FCC*, 75 HARV. L. REV. 1578 (1962) (television allocations).

and expeditious administration."[216] In 1960, James Landis repeated the charge:

> The Commission has drifted, vacillated and stalled in almost every area. It seems incapable of policy planning, of disposing within a reasonable period of time the business before it, of fashioning procedures that are effective to deal with its problems.[217]

Though most of the criticism of the FCC's licensing and regulatory policies in the field of broadcasting would appear only indirectly relevant to the problem of interservice frequency allocations and spectrum management, there has been some tendency to apply the criticism of Landis, the Hoover Commission and others to the Commission's spectrum allocations.[218] This is rather undiscriminating, however, and it assumes findings and conclusions about the FCC's performance in the area of spectrum allocations which were not made. To the extent the FCC's performance is relevant at all here, the focus should not be on its general performance in licensing and regulating broadcast stations but on its actions and policies in specific regard to interservice frequency allocations and general spectrum management. However, even focusing specifically on problems of spectrum management policy it must again be emphasized that the pertinent question is not whether present policies are deficient, but whether the deficiency reflects the kind of basic institutional flaw for which administrative reorganization is appropriate.

(a) Past Reorganizations

For the most part the FCC has not been unresponsive to proposed reorganizations. After its creation in 1934, the Commission organized itself into three separate and integrated divisions for broadcast, telegraph and telephone regulation. However, in 1937, when it became apparent that the division plan had in practical effect divided the Commission into three separate agencies, the plan was abolished.[219] The Commission

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216. COMMISSION ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, COMMITTEE ON INDEPENDENT REGULATORY COMMISSIONS, TASK FORCE REPORT 95 (1949).

217. J. LANDIS, REPORT ON REGULATORY AGENCIES TO THE PRESIDENT-ELECT 53 (1960) (printed for the use of the Senate Committee on the Judiciary, 86th Cong., 2d Sess.).

218. *See* Coase at 36-37.

219. In abolishing the division plan in 1937, the Commission noted that:

> . . . it was found that to subdivide a small commission in such

was then organized into four professional units comprising the Engineering, Accounting, Law and Secretary Departments. Each department was subdivided into broadcast, common carrier, safety and special services and handled licensing and regulatory functions in these fields. The seven member Commission itself functioned as a single unit after 1937.[220] This proved to be inefficient. Following the recommendations of the Hoover Commission Task Force on Regulatory Commissions in 1948 and 1949,[221] the FCC reorganized its staff along functional instead of professional lines. This reorganization was paralleled by the 1952 McFarland amendments requiring functional reorganization of the Commission.[222]

In 1961 one further major reorganization plan was implemented. It originated as one of a series of executive plans for reorganization of the major independent agencies pursuant to the Reorganization Act of 1949.[223] Though the FCC opposed certain features of the reorganization and the plan was defeated, its basic features, which were supported by the Commission, were subsequently authorized by specific legislation.[224] The principal

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> a manner had a devisive effect and was not conducive to cooperation and mutual understanding among the members of the Commission . . . .
>
> The organization of the members of the Commission into divisions also prevented a rounded development of each Commissioner's knowledge and experience in the whole field of the Commission's activity.

4 FCC ANN. REP. 3 (1938). For a brief discussion of the legislative background and the Commission's reorganization, see H. WARNER, RADIO AND TELEVISION LAW 803-05 (1948).

220. *See* 5 FCC ANN. REP. 9 (1939). A fifth department, the "Examining Department," operating in 1938, *see* 4 FCC ANN. REP. 4 (1938), was eliminated after that year.

221. *See* HOOVER TASK FORCE REPORT, *supra* note 216, at 97. *See also* STAFF REPORT ON THE FCC (1948). These recommendations were supported by the President's Communications Policy Board in 1951, although its comments on FCC reorganization were little more than a note in passing that "the Commission's present efforts to reorganize itself as recommended by the Hoover Commission should be pressed" and that the Commission should have "more funds and a stronger staff." TELECOMMUNICATIONS: A PROGRAM FOR PROGRESS at 208.

222. 66 Stat. 711 (1952). *See Hearings on S. 1973 Before a Subcomm. of the Senate Comm. on Commerce*, 81st Cong., 1st Sess. (1949); *Hearings on S. 658 Before the House Comm. on Interstate and Foreign Commerce*, 82nd Cong., 1st Sess. (1951) (a later version of S. 1973).

223. Now 5 U.S.C. § 1332 (1964). For a history of the reorganization plans of 1961, see Note, *The Progress of Federal Agency Reorganization Under the Kennedy Administration*, 48 VA. L. REV. 300 (1962).

224. 47 U.S.C. § 155 (1964). For a comparison of the defeated executive plans and that subsequently adopted, see Note, *supra* note 223, at 321-34.

thrust of the 1961 reorganization plan was to permit delegation of Commission authority to an employee or employee board[225] in order to free agency members from such routine tasks as review of interlocutory and other routine adjudicatory decisions. Following enactment of legislative authorization for such delegation, the Commission in 1962 established a review board to carry out certain delegated functions including review of initial decisions and related orders.[226] Contemporaneous with the 1961 reorganization plan, the Bureau of the Budget commissioned an organization and management study of the Commission. Following the study's recommendations in substantial part, the Commission made a series of internal changes in its organization and procedures in 1962 and 1963.[227] Since 1963 there have been no other major changes.

Such internal changes by the FCC have not silenced those critics who have pressed for more fundamental reform. One of the most drastic reorganization proposals has been advanced by FCC Commissioner, Robert Bartley, who has advocated nothing less than the abolition of the FCC and a redistribution of its functions among two independent agencies, one legislative and one executive.[228] More recently, legislation has been proposed along the lines of the Bartley plan.[229]

(b) The Bartley Plan

In proposing what is essentially the abolition of the FCC, Commissioner Bartley has borrowed a page from former FCC Chairman Minow's recommendations for separating and reconstituting the FCC's "planning," "enforcement" and "quasi-judicial" functions.[230] Unlike Minow's proposal, however, Bartley's scheme of reorganization is not aimed at separation of the policy

225. The Commission already had authority to delegate authority to one or a panel of its members.

226. 28 FCC ANN. REP. 16 (1962).

227. The changes are detailed in the 29 FCC ANN. REP. 13-15 (1963).

228. Address by Commissioner Robert Bartley before the Illinois Broadcaster's Association, May 23, 1968, FCC Release No. 17280. Though the Bartley proposal is not evidently motivated by the problems of spectrum management, it does have clear and significant relevance, and therefore must be considered.

229. *See* BROADCASTING MAGAZINE, Jan. 13, 1969, at 36 (proposal by Congressman Dingell).

230. *See* N. MINOW, EQUAL TIME: THE PRIVATE BROADCASTER AND THE PUBLIC INTEREST 277-304 (1964).

planning, enforcement and adjudication functions. Also, in contrast to the Minow proposal which presumably would have resulted in unification in an executive agency, the Bartley proposal would retain the present dual jurisdiction with respect to Government and non-Government use of the spectrum.[231]

More specifically, the Bartley proposal would reconstitute the FCC's authority and functions as follows: First, there would be established a "Federal Broadcast Commission," an independent regulatory commission with five commissioners appointed by the President. The Commissioners would have staggered terms of 3, 6, 9, 12 and 15 years with only the 3 and 6 year appointees eligible for reappointment. Second, a similarly constituted "common carrier commission" would be established to regulate common carriers in the domestic and international telecommunications service. Third, the Safety and Special Radio Services Bureau functions of the FCC would be transferred to the Department of Transportation, since much of that bureau's work relates to mobile radio. Fourth, the spectrum allocations functions of the FCC, including treaty responsibilities, would be transferred to an office within the legislative branch, to be headed by a Director appointed by the President for a term of 15 years.[232]

Of his proposal Bartley believes:

> [T]here would be a more responsible administration of the differing functions now administered by the FCC if they were the responsibilities of separate agencies. I think they would each fare better in their appeals for manpower and money; they would each be able to concentrate more and become more expertise [*sic*] in their more specialized field; the members could give greater guidance to their staffs on policy planning and in supervision.[233]

Bartley's central premise that more effective regulation could be achieved by "more expertise" in a "more specialized field" must be challenged. Emphasis upon the importance of specialized expertise is by no means unique. One can scarcely pick up a

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231. First, let us face a few fundamentals. The Congress, especially in the field of communications, must not surrender its constitutional responsibilities for the regulation of commerce. Nor should the President surrender his responsibilities as Commander-in-Chief and over Foreign Affairs. So we must accept, without arguing interminably and unproductively, a dichotomy of control over the radio spectrum.

Bartley, *supra* note 228, at 8.

232. *Id.* at 14-18. This reorganization would not alter the present authority and functions of the OTM.

233. *Id.* at 6.

court opinion in the field of administrative law and not find therein some encomium on expertise and the necessity of entrusting administrative responsibilities to those who have it. No doubt expert judgment plays an important role in the administrative process. But it is doubtful that what the administrative process needs is more of it. Professor Louis Schwartz' observation that "expertness has been oversold in this country,"[234] seems closer to the point.

What is lacking in the FCC, as in many other agencies, is not specialized expertise, but quite the opposite: a broader vision, a wider perspective on the interrelationship of the functions regulated by the Commission with others in society. A major failing of the FCC has not been the failure of its members to give adequate guidance to the staff on matters requiring specialized knowledge, but rather the failure to provide a broad perspective within which specialized concerns can be judged. It is said that FCC members are preoccupied with minor concerns;[235] that they cannot "see the forest for the trees."[236] Bartley's plan seems ill-designed to correct this. It is true, as Bartley reasons, that narrowing the range of subjects of attention will allow agency members greater time for thoughtful reflection on both decisions and policy. But his proposal does so not by separating the trivial from the important; rather it simply reduces the number of matters to be considered. Instead of attempting to widen the vision of the forest, it simply reduces the forest to a single tree.[237] There are other more practical objections. Bartley assumes that the functions and responsibilities of the FCC's three operating bureaus and frequency allocation-treaty division are so disparate that their presence in a single agency is not only unnecessary but is an impediment to effective regulation and planning. In fact it appears that there is a close

234. Schwartz, *Legal Restrictions of Competition in the Regulated Industries: An Abdiction of Judicial Responsibility*, 67 HARV. L. REV. 436, 471 (1954).

235. This was, of course, a principal reason for the 1961 reorganization plan and the creation of the review board. *See* note 226 *supra*, and accompanying text. It is obvious, however, that while this has somewhat diminished the problem, it has not entirely eliminated it.

236. A variation on the simile has been offered by former FCC Chairman Newton Minow: "The Commission is a vast and sometimes dark forest, where FCC hunters are often required to spend weeks of our time shooting down mosquitoes with elephant guns." N. MINOW EQUAL TIME, THE PRIVATE BROADCASTER AND THE PUBLIC INTEREST 280 (1964).

237. Compare *id.*: "[T]he forest must be thinned out and wider, better marked roads have to be cut through the jungles of red tape."

and complex interrelationship among all facets of telecommunications. Consider, for example, the *Above 890 mc* proceeding[238] which involved the proposed licensing of private, noncommon carrier land mobile stations on microwave frequencies previously assigned to common carriers. Frequency allocations were involved since one of the central issues was whether private use of microwave would pre-empt frequencies which would be needed for future space communications. On the other hand, to the common carriers the most crucial issue was not one of interservice allocations policy, but one of licensing and regulatory policy, since they contended that their status conferred on them a protection against this competition and the resulting diversion of revenues. This is a classic issue of common carrier-public utility regulation. Finally, the private applicants argued that the expanded need for private land mobile radio frequencies dictated their access to these frequencies. Can it be said that any of these three major issues is separate in any meaningful sense? How would such a case be resolved under the Bartley scheme where the issues would fall within the separate jurisdictions of (a) a "legislative agency," the "Telecommunications Resources Authority;" (b) an independent regulatory commission, the "Telecommunications Common Carrier Commission;" and (c) an executive agency, the Department of Transportation? Presumably in the cases of overlapping jurisdiction we would have to revert to inter-agency coordination. Perhaps this could be accomplished, but given the continuous efforts to reduce the necessity for burdensome and often ineffectual coordination of related telecommunications functions in the executive branch, it seems a curiously backward step to create the same problem in the private sector by splintering the one central authority that does exist into four separate pieces and trusting to providence that they can be brought together again when necessary.

There also can be little doubt that this multiple agency system would substantially increase the cost of regulation. That such an increase would not be warmly endorsed by a budget conscious Congress would seem too obvious to mention were it not for Bartley's assumption that Congress would be *more* generous in providing adequate funds for telecommunications regulation as a result of his proposed reorganization:

> Another significant advantage would be that criticism—both

238. *Allocation of Frequencies in the Bands Above 890 mc*, 27 F.C.C. 359, 18 P & F RADIO REG. 1767 (1959); Note, 70 YALE L.J. 954 (1961).

> constructive and otherwise—would be directed to specific areas and thus not involve an entire agency responsible for many other problems. Radio and television are sitting ducks for unjust criticism by competitive media. . . . [S]ince it licenses the private and competitive radio and television stations, the FCC reaps its full share of adverse publicity. But it is the whole FCC which is damned—this includes our Common Carrier, our Safety and Special and our Field Bureaus. Now, this criticism reaches the ears of Congress and, I believe, adversely affects the . . . [FCC's] appropriations.[239]

Bartley's conclusion is that by splitting off the various functions into separate agencies, each function would "fare better in their appeals for manpower and money."[240] This is speculating on conjecture. True, the FCC has been severely hobbled by inadequate appropriations. But a comparison of the FCC's appropriations with those of other major independent agencies shows that the Commission has fared about as well as most of its less criticised sister agencies. For example, since fiscal 1966, increases in FCC appropriations have kept pace with those of comparable agencies such as the CAB, the ICC, the FPC or the SEC.[241] Yet during this time the FC has come under more repeated and continuous criticism from Congress and the public than any of the others. Doubtless there are many situations in which agency criticism does have an influence on appropriations. But if such reaction were as common, or as indiscriminately casual as Commissioner Bartley suggests, the FCC would have to sell pencils on the street to exist.

The Bartley proposal has been discussed at some length because it illustrates a common tendency to relate all FCC failures to alleged institutional flaws and, therefore, to believe that the solution lies in some sweeping reorganization or other institutional change. As stated earlier, this approach is misdirected. It may be that the FCC's performance in carrying out many of its licensing and regulatory responsibilities is deficient and should be re-evaluated. It may also be that its policies of frequency allocations should be re-evaluated. But to change the FCC's religion it hardly seems essential to tear its tabernacle down. Whether it might be useful to change the icons or fire the choir is another question, beyond this general survey. It is suf-

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239. Bartley, *supra* note 228, at 7. *See also id.* at 4.

240. *Id.* at 6.

241. *See* Independent Offices and Department of Housing and Urban Development Appropriation Acts for 1969 and 1968, 82 Stat. 937, 81 Stat. 341; Independent Offices Appropriation Acts for 1967 and 1966, 80 Stat. 663; 79 Stat. 520.

ficient to note here one conclusion of the 1962 management study —that the "principal underlying cause of FCC administrative deficiency is the lack of an adequate level of appropriation support in both manpower and equipment terms."[242] The appropriation problem is particularly serious in the frequency allocations area where insufficient manpower and equipment have greatly limited the Commission's monitoring and investigative capacity and have almost precluded any substantial technical research[243] capacity, both of which are essential to an effective management of the spectrum. The appropriation problem is not likely to be resolved in the immediate future, given the commitment of funds to higher priorities. In any event, the Bartley proposal for inducing additional appropriations does not seem realistic: the one thing least likely to produce more funds is to restructure the system to make even the routine functions more costly than they now are.

Beyond the matter of appropriations, staff and equipment, there is, finally, the matter of leadership from the Commission itself. Although the point may seem obvious, one must respect James Landis' conclusion concerning the Commission's processes that "no patent solution . . . exists other than the incubation of vigor and courage in the Commission by giving it strong and competent leadership."[244] It is a commonplace observation, but it is a sound and durable judgment as to which there would likely be little dispute except over how to obtain such leadership. In this respect the Bartley proposal seems least likely to achieve this aim insofar as its proposed reconstitution of the FCC's responsibilities would create offices far inferior in importance and stature to the FCC today.

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242. *Quoted in* 28 FCC ANN. REP. 16 (1962).

243. The inadequacy of the current budget and staff of both the FCC and the OTM and the correspondingly inadequate research and technical capability is emphasized by the President's Task Force and by the Stanford Research Institute, which has been studying aspects of the spectrum problem for the FCC. *See* BROADCASTING MAGAZINE, December 16, 1968, at 36, 38; April 7, 1969, at 49. *See also Hearings on Independent Offices and Department of Housing and Urban Development, Appropriations for 1969 Before a Subcomm. of the House Comm. on Appropriations*, 90th Cong., 2d Sess. 103-08 (1968). In the entire area of frequency management, including allocations planning, research and related activities, the Commission employed an estimated average of only 102.4 persons in 1968. *Id.* at 108.

244. J. LANDIS, *supra* note 217, at 54.

V. ECONOMIC REFORM: THE PRICING SYSTEM AS A MEANS OF SPECTRUM ALLOCATIONS

In recent years, increasing attention has been given to proposals for an "economic" rather than administrative approach to frequency allocation. Advocates of this approach are concerned less with *specific* defects in the present administrative structure than with the economic inefficiency of the entire system of making allocations by administrative choice. They argue that the problem is simply one of distributing resources, a function normally accomplished not by administrative fiat, but by the workings of the market place.

It has been proposed that a pricing system be established for the distribution of frequency allocation in lieu of administrative allocation, or at least as a major complement of it. Under such a system, frequency allocations would be made, at least in part, through open market sales and purchases, or through some form of Government supervised bidding or simulated pricing system. Proponents of this approach point out that the system would make allocations automatically, eliminating the need for administrative judgment. Professor Coase, one of the principal advocates of such a system, explains it as follows:

> Since the amount which a user will pay for a resource reflects the value of that resource in whatever employment he is contemplating using it, the pricing system tends to result in that allocation of a resource between its various uses which maximizes the value of production. If a price had to be paid for radio frequencies, Government departments would not use them unless they felt that, by spending their money in this way, it would serve the purposes of the department better than by spending that money in any other way. And if the price was made sufficiently high so as to bring the demand for radio frequencies into equality with the supply, this would both eliminate the need for an administrative allocation and ensure that radio frequencies were used for those governmental purposes which justified the greatest monetary sacrifice. Since radio frequencies are also demanded by private users (to whom they are now allocated by the FCC), if pricing is to be introduced for Government departments, it would seem desirable that the pricing system should be applied to private users as well. Private users and Government departments could then compete for radio frequencies. In this way the price paid by Government departments would reflect the value of the frequencies to private users and the price paid by private users would reflect the value of the frequencies to Government departments.[245]

Coase's proposal builds on his earlier suggestion that a pricing mechanism be used in lieu of the licensing system for distri-

245. Coase at 40-41.

bution of broadcast frequencies among competing applicants.[246] Although the earlier proposal seems a radical change, it should be noted that it called for a change within the existing basic framework of spectrum allocations. Thus it would have modified only a small part of the allocations process—the licensing of broadcast stations. The present proposal is more ambitious. It appears to be a substitute for substantially all of the present processes by which allocations are made.

The pricing system proposal, which has in recent years received the support of a number of other economists,[247] and has been considerably discussed,[248] is based on the premise that radio frequencies are essentially the same as other scarce economic resources which are allocated by the market pricing system.[249]

To date, the proponents of the pricing system have been content to talk in abstract terms of the establishment and operation of the system, making it difficult to define the actual proposal. Having set forth some vague generalizations about pricing as a means of allocations, Coase notes simply that:

> radio frequencies could be disposed of for long or short leases or by the creation of property rights. . . . But it is not the purpose of this article to consider the legal framework within which the pricing system would operate.[250]

But the problem is not, as Coase suggests, merely a matter of deciding on an appropriate "legal framework" in which the system *would* operate. The problem is finding an economic and technical framework in which the system *could* work.

It should be emphasized that, as generally used in price theory, the resource allocation function of price is based on a free market in which prices are set, *independent of Government decision*, by the consumer who is the judge of his needs or

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246. Coase, *The Federal Communications Commission*, 2 J. LAW & ECON. 1, 4 (1959). *See also* Levin, *Federal Control of Entry in the Broadcast Industry*, 5 J. LAW & ECON. 49 (1962).

247. *E.g.*, Levin, *The Radio Spectrum: Economic-Physical Characteristics, quoted in* Jones, *Use and Regulation of the Radio Spectrum: Report on a Conference*, 1968 WASH. U.L.Q. 71 *passim* [hereinafter cited as Jones Report]; Meckling, *Management of the Frequency Spectrum*, 1968 WASH. U.L.Q. 26 [hereinafter cited as Meckling]. The Jones article is a summary of the Airlie House Conference on the Use and Regulation of the Radio Spectrum.

248. *See, e.g.*, Jones Report; Note, *The Crisis in Electromagnetic Frequency Spectrum Allocation: Abatement Through Market Distribution*, 53 IOWA L. REV. 437, 472-79 (1967).

249. *See, e.g.*, J. BONBRIGHT, PRINCIPLES OF PUBLIC UTILITY RATES 43-46 (1961); P. SAMUELSON, ECONOMICS 42-43, 615 *passim* (7th ed. 1967).

250. Coase at 47.

wants. Also, by virtue of the absence of Government intervention, the consumer becomes judge not only of the private value but the social value of the service or product being purchased.[251] Thus, it will first be assumed that what is contemplated is some form of freely competitive market in which competing users' demands are the exclusive determinant of price. Explicit modifications on this free market approach by those who advocate a system of "simulated pricing," will be discussed subsequently.

A. Allocation among Different Services Through Individual Bidding and "Open Market" Purchase and Sale

Although proponents of the pricing system have not been very precise in describing how their "market system" would be implemented, one feature which appears to be central to the market concept is that individual frequency "rights" would be created. These rights would be freely transferable to anyone willing and able to purchase them.[252]

An initial difficulty is, of course, how to define frequency "rights" which are capable of being transferred among different classes of users. Under the existing system, "rights" are defined largely in terms of "inputs"—the use of particular equipment, at a particular location, with prescribed limits on power, antenna height, and other factors, all designed to make optimum utilization of particular frequencies with minimal interference. Under this structure of regulation, each right would be limited to a particular use and free transferability among different kinds of use would be impossible.[253]

The problem of redefining frequency rights in terms relevant to different classes of users does not seem insurmountable, however. It would not be inordinately difficult, for example, to redefine "inputs" in terms of "output"—the ability to radiate signals of defined strength within particular areas or, alternatively, the right to exclude other signals from a particular area—which could be applied to varying classes of use.[254] However, defining frequency rights in terms applicable to varying classes of use does not overcome all the problems posed by the free-transferability concept. Rather, it brings into focus more difficult technical, economic and social problems. The following

251. J. Bonbright, *supra* note 249, at 45.
252. Meckling at 31-32.
253. Jones Report at 85-86.
254. *Id.*

discussion is not intended to provide an exhaustive list nor a complete analysis of the problems, but simply outlines them and discusses the major considerations that must be evaluated.

1. *The Effect on Existing Uses*

Any attempt to reorganize the system of spectrum utilization must recognize that most of the presently usable spectrum has been allocated not only to the various services, but also to individual users. While in theory existing users have no vested property rights in their frequencies, existing and often long-standing use cannot be ignored. Wholly apart from the difficult legal problems of interfering with existing use,[255] any wholesale readjustment of frequencies could affect billions of dollars of investment made on the strength of present allocations. As of 1963, depreciated United States investment in systems, equipment and research and development facilities related to the use of the radio spectrum was estimated at some $26 billion. In broadcasting alone the consumer investment in receivers exceeded $9 billion and the industry investment in equipment, over one-half billion dollars.[256] Such an investment should not and, indeed, could not be easily disturbed by a wholesale offering of present uses to open market competitive bidding.

It has been suggested, however, that simply creating "property rights" in present users and allowing these to be freely transferred by individual purchase and sale would accomplish an economical, efficient and rational distribution of frequencies.[257] This assumption must be examined.

2. *Greater "Economy" of Spectrum Use*

The assumption of proponents of the pricing system appears to be that placing a price on frequencies will result in more economical use, alleviating if not eliminating stockpiling of frequencies and discouraging inefficient, uneconomical use. Doubtless some administrative economies would result, but with respect to a large portion of the spectrum it may be questioned

255. Consider, for example, the nearly endless litigation that attended just one small effort to re-allocate a few television channels in the deintermixture controversy. *See* Note, *The Darkened Channels: UHF Television and the FCC*, 75 HARV. L. REV. 1578 (1962).

256. DEPARTMENT OF COMMERCE, TELECOMMUNICATIONS SCIENCE PANEL, ELECTROMAGNETIC SPECTRUM UTILIZATION—THE SILENT CRISIS 8 (1966).

257. Meckling at 31-32.

whether the economies would be substantial enough to justify the complex and expensive mechanisms required to implement the pricing system. Consider, for example, the military establishment which is not only one of the largest users, but by many estimates, one of the largest holders of unused or inefficiently used frequencies. Market system proponents tend to assume that once a price tag is placed on frequencies there will be a sudden realization of their value and holders of frequencies will accordingly use them more efficiently—either utilize the frequencies or sell them to others who can make "better use" of them. And if the military does not recognize such economies, the process of budget review will force it to do so. However, this picture of economy in Government seems overidealized. If the present standards of "economy" in defense spending are taken as a guide to what could be expected in this area, there is little to kindle enthusiasm about the efficacy of a pricing system in producing more economical use of frequencies.[258] This is not to suggest that the military agencies and the Department of Defense are wholly indifferent to matters of economy and budgetary considerations. But in this realm "economy and efficiency" are relative to the size and nature of the activity. For example, for fiscal year 1968, estimated total expenditures for the Defense Department exceeded $75 billion.[259] Given a budget of such magnitude, "economy" and "efficiency" is more frequently a matter of whether to have a "light" or "heavy" antimissile system than it is whether to use or sell a particular radio frequency or band of frequencies. Considering the realities of defense spending, any significant "economizing" of use will likely be confined to the private sector. Even here, however, it seems improbable that users will respond with perfect economic "rationality" to the price system. This is particularly true if existing users could not practically be forced to bid competitively for and purchase their presently assigned frequencies. Without such forced "justificiation" of present use, existing users would be somewhat slow to respond with the degree of rationality expected of them—particularly where, as in the case of the military, matters of "economy" become blurred by other important, and less measurable, social purposes.

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258. On "economy" in the Defense Department, *see, e.g.*, 115 CONG. REC. S2549-52 (1969) (comments of former official in DOD comptroller's office).

259. BUREAU OF THE BUDGET, BUDGET FOR THE UNITED STATES GOVERNMENT 282, 291 (1968).

3. *Technically Efficient Utilization of the Spectrum*

The tendency of proponents of the pricing system to assume that radio frequencies are as susceptible to allocation by free market pricing[260] as any other resource reflects an indulgence in abstract generalization which obscures analysis. The problem of achieving an efficient allocation and use of the radio spectrum cannot be defined in terms of economic or social efficiency without consideration of the problem of technical utilization. While technical utilization is not an important factor with respect to most goods, the situation is not so simple in the case of radio frequencies. First, we are concerned with full utilization of an invaluable resource. Failure to get full technical use from the resource would be socially wasteful. Second, in terms of full and efficient use, it makes a substantial difference who "buys" a given radio frequency band in a particular location and how he uses it. Other present and prospective users of the same or other frequencies will be affected in varying degree by such use; and this in turn will affect the degree to which the spectrum can be fully and efficiently used.

But the entire approach of the free transferability aspect of the open market system is incompatible with efficient technical use and optimum technical utilization. Consider, for example, the use of channel nine in Los Angeles. It is possible to calculate interferences which its use for television broadcasting would cause to other users, and interferences from other users to it, and to engineer a system of standards for operation which will allow effective service within a certain definite service area while minimizing interference to other co-channel and adjacent channel television stations in other cities. By advanced planning for this and other television stations, which includes restricting these frequencies for exclusive television use, an allocations system for an area—or the entire nation—can be engineered to result in optimum utilization of these frequencies with reasonably satisfactory, interference-free service. Such standards have, of course, been engineered.[261] While they are not perfect,[262] they at least reflect rational planning and permit a far more efficient utilization than would be permitted by free transferability of frequency rights among different users and classes of users.

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260. *E.g.*, Meckling at 26.
261. *E.g.*, 47 C.F.R. §§ 73.603-.614 (1967).
262. *See* Courtney, *The Double Standard*, 20 FED. COM. B.J. 152, 158 (1966).

Assume that a group of industrial land mobile users in the Los Angeles area purchases the frequency rights from the channel nine station. Their use presents an entirely different problem of effective utilization from that which is presented by television use. First, the interference which they cause may be more serious than that of a television station because of the difficulty of ascertaining and correcting the mobile source of interference.[263] Second, this new use may cause a serious problem of "intermodulation"—the interference caused by interaction of several signals.[264] Third, since interference with users in other cities may be greater or less than that of channel nine, it will have to be closely evaluated and the use restricted as necessary. This would present increasingly complex problems each time a new transfer was made.

The very nature of the free transferability concept, with its almost random approach to allocations, would ultimately defeat any aim of optimum utilization of the spectrum. Assume, for example, that after the channel nine transfer, channel eight in San Diego is sold to aviation users for contemplated use over southern parts of the state, and the former San Diego licensee then proposes to purchase channel eight in Los Angeles. At the same time the particular group of land mobile users who purchased channel nine (186-192 mc) in Los Angeles decide they do not need so much frequency space, and they sell part of it (186 mc) to a land transportation user group consisting chiefly of the major bus lines operating throughout southern California. They also do not need 192 mc, so that band is divided among marine users operating along the coast, some local aviation users and amateur radio operators. In such an unchartered, uncontrolled chain of transfers, altered uses and changing technical circumstances, it would be an administrative nightmare even to make ad hoc adjustments in use to prevent interference; an attempt to ensure optimum utilization through such a process would be impossible. Would the land mobile, marine, aviation and amateur radio uses on 186-192 mc in the Los Angeles area as fully utilized these frequencies as a television station? Does the use of channel eight for television in Los Angeles "fit" with fullest utilization of that channel throughout the state? Does the use of channel eight in San Diego for aviation comport with full and effective use of these frequencies?

263. Jones Report at 86.
264. *Id.* at 87-88.

Complicating the situation is the problem of equipment adjustment. Although it might be feasible to transform broadcast into nonbroadcast frequencies, it does not seem practicable to do the reverse because present sets could not receive the new frequencies and manufacturers could not be expected to produce special receivers for each location. Thus, loss of a television broadcast frequency in a given area as a result of transfer to nonbroadcast uses could be recouped only within the bands now available for television use. The transfer of channel nine to the land mobile users in the above example could not be offset by purchasing, say, the 48-54 mc band (television channel one) from the federal government.

Ad hoc allocations could also ultimately lead to reduced standards and degraded technical servie. As individual transfers were made, there would be persistent pressures to fill in "gaps" in frequency usage left by ad hoc allocations. There would also be strong pressures to recoup broadcast services lost as a result of transfers. To fill in gaps or to recoup lost services, compromises in engineering standards would often have to be made. For example, it would be expected that VHF "drop-ins" —assignments made at less than the required co-channel and mileage separation requirements[265]—would no longer be the rare exception but would be prevalent. Some such drop-ins could doubtless be effected through the use of directionalization and suppression of radiated signals and other measures to lessen deterioration of service,[266] but repeated adjustments in engineering standards could ultimately result in degraded service. All of this would seem obvious for a moment's reflection on the experience with AM radio, an experience which demonstrated the chaotic conditions which can result from an ad hoc approach to allocations.[267] But the results of the free transferability proposal would be infinitely more troublesome. Instead of dealing with just one particular class of use in AM radio, the Commission would be forced to deal with virtually all uses intermingled.

4. *Social Versus Private Utility*

The case for adoption of a market system to allocate radio

265. *See, e.g., Report and Order, Interim Policy on VHF TV Channel Assignments*, 21 P & F RADIO REG. 1695 (1961).

266. *See id.* at 1699, 1701.

267. *See Report and Order, Freeze on AM Applications*, 13 F.C.C. 2d 866-67, 13 P & F RADIO REG. 2d 1667, 1668 (1968); *Report and Order, AM Station Assignment Standards*, 29 Fed. Reg. 9492, 2 P & F RADIO REG. 2d 1658, 1666 (1964).

frequencies rests on the premise that the pricing mechanism is the most efficient means of resource allocation and the one which will normally achieve optimal results. Obviously this is a normative judgment not an empirical fact; indeed from the evident tendency of some economists to define optimal allocation as that which market forces produce, the efficiency of the pricing mechanism becomes tautological.

As a general norm of a capitalist economy (though not necessarily of a democratic society) one must accept, I think, the pricing system and the principle of "consumer sovereignty" as the central mechanism of resource allocation. But it is not necessary to translate "consumer sovereignty" as "the divine right of kings." We accept the pricing mechanism of the free market on the trust that it will achieve, if not optimal results, at least better results than government mechanisms. And it does—most of the time. But not always: in the idiom of the economist, there are circumstances where marginal private utility diverges from marginal social utility in such a way that market forces cannot be fully relied on and government intervention, through subsidy, tax or direct controls, must be considered.[268] The use of radio frequencies, I believe, presents such a circumstance. This is obviously not an occasion in which to attempt to elaborate the principles of welfare economics to be consulted on this problem. But one or two of the pertinent concepts can be very roughly sketched.[269]

The situations in which we can look for a divergence between private utility value—as expressed in a market price—and social utility value are many and complex. One such situation may arise where the market itself does not operate "efficiently" because of imperfect competition. We cannot pause to analyse this problem here, but it is doubtless one to be considered in assessing the efficiency of a market system. More troublesome, however, is the problem of "external economies and diseconomies" (to borrow again the jargon of the economist) which may arise from particular uses: situations where a bad use affects the welfare of others but where that effect, good or bad, is not re-

268. *See, e.g.*, T. SCITOVSKY, WELFARE AND COMPETITION 181-88 (1951). The classic treatment of the distinction between marginal social and private utility is found in A. PIGOU, THE ECONOMICS OF WELFARE, ch. IX (4th ed. 1932).

269. For a fuller discussion of the matters sketched here see W. BAUMOL, WELFARE ECONOMICS AND THE THEORY OF THE STATE 64-99, 123-34 (2d ed. 1965); R MUSGRAVE, THE THEORY OF PUBLIC FINANCE 6-14 (1959); T. SCITOVSKY, *supra* note 268.

flected in price.[270] The classic example, that of the air polluting effects of a factory, finds a striking parallel here in the effect of electrical interference. Not only does one radio use interfere with other uses of co-channel and adjacent channel frequencies, it may also affect the welfare of the public at large which must suffer the ill effects of lost or degraded service.

In some cases, of course, the effect of a particular use on others may be made the subject of bargain and the full costs-benefits of the use thus brought into the price. But certainly this would be uncommon in the case of radio. Even assuming the possibility of completely identifying all who are directly affected, there may be no mechanism for reflecting their interests in the market. Take the case of broadcasting. The main social objective of and justification for the service is benefit to the public—entertainment, information, education. But in the process of bidding for television frequency rights, the public is not really represented. As pointed out by one economist, the value of the frequency right has no direct correlation to the value of the broadcast service to the public:

> [T]he value [of television time], to the advertisers, is reflected in what he is willing to pay for the time, and the value to the broadcaster of having that time to sell to the advertiser is reflected in what he is willing to pay for the spectrum if it were put up for bid. But it is not true . . . that the value of the viewing opportunities thereby afforded the viewer is reflected in those prices. Very indirectly this may be true in the sense that what the viewer is going to pay for advertised products may depend on how much he likes the program, but I . . . wouldn't want to push that argument very far. In this circumstance [it cannot be presumed that willingness to pay more for spectrum use reflects a higher social use].[271]

The above example is not intended to sound the trumpets of alarm for the future of television service, however. In fact, ensuring the continuation of socially valued broadcast service would not be a major problem since broadcasting is generally such a profitable use that only in a few instances would other users find it profitable to purchase broadcast frequencies for less remunerative nonbroadcast use, although, there may be many cases where broadcast use of a *particular frequency* would be less profitable than alternative nonbroadcast uses.

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270. For more extended analyses see W. BAUMOL, *supra* note 269, at 130-33; R. MUSGRAVE, *supra* note 269, at 8-14. On the inadequacies of traditional market forces generally in serving social needs see J. GALBRAITH, THE NEW INDUSTRIAL STATE (1967).

271. *Quoted in* Jones Report at 91.

But the broadcast service illustration suggests the far more pervasive problem of meeting social needs and wants which radio, in a variety of forms, can and should serve. Of central importance here is not merely the fact that some persons affected by radio have no "economic vote" but the fact that, for a large array of social wants no means exist to secure the requisite contributions from individuals except by government action. The problem of radio spectrum allocation is in this respect not unique. Despite assertions by Professor Coase and others that the use of a market pricing mechanism is the "normal" means of distribution of limited resources in this country,[272] even a cursory examination of the way in which socially important goods and services are allocated in our society demonstrates that reliance on a *pure* market pricing system is far from universal. Indeed throughout a large (and seemingly growing) segment of over economy, goods and services are not allocated entirely—in some cases not primarily—by a free market pricing system. Consider a service closely analogous to communications, that of transportation. In almost every aspect of transportation service there is an element of Government control—rate regulation, service regulation, subsidization of noneconomical service—which has as its direct purpose the allocation of services in ways which would not be obtained if a *pure* pricing system were in effect.[273]

This has been recognized by some market system advocates, who nevertheless argue that a direct money subsidy to "worthy" frequency users would be preferable to "giving" them frequencies. For example:

> [W]hile the police themselves and public safety . . . are a public good, spectrum is in essence no different . . . than any other factor of input. . . . It is not at all clear that giving away frequencies . . . is the sensible way to subsidize police. [It may be desirable] to give the policy money instead of frequencies, since it is quite possible that there is a misallocation of resources as a consequence of the fact [that] we do this,

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272. Coase at 40; Meckling at 26.

273. For example, subsidies are given to certain airlines to provide service to local communities which would not receive such service under a pure market system. 49 U.S.C. § 1376 (1964); *see Local Service Class Subsidy Rate*, 34 C.A.B. 428 (1961); CAB BUREAU OF ECONOMICS, SUBSIDY FOR UNITED STATES CERTIFICATED AIR CARRIERS (1968). Apart from specific "mail" subsidies received by local service carriers, helicopter carriers, Alaskan and Hawaiian carriers and one trunkline (Northeast), all air carriers receive a form of subsidy through the provision of certain services—navigation aids, weather information, airport facilities—at charges not covering cost. R. CAVES, AIR TRANSPORT AND ITS REGULATION 253 (1962).

> because if they had the money they would buy other things than frequencies.[274]

As a matter of economic principle, money subsidies are, I would concede, preferable to commodity or service subsidies, although certainly less often practical. However, even assuming that the Government could practicably finance such a program of money subsidies, it is not clear how this would provide any standard for, or how it would bring about any significant improvement in the allocation of resources. Since money, like radio frequencies, is a scarce commodity, a judgment would still have to be made as to how best to apportion the limited subsidies among competing users and competing social needs: to whom shall subsidies be given, for what purposes and in what amounts. Obviously this "allocation" decision cannot rely on the market place since its very purpose is to modify the results of the market. Reliance must be placed on administrative judgment in the formulation of which economic value is not decisive. In short, deciding how to allocate money subsidies turns out to be little different from deciding how to allocate frequencies.

B. Allocation among Users Within the Same Service Through Competitive Bidding

The principal thrust of recent pricing system proposals has been the use of pricing as a means of allocating frequencies among different services with particular emphasis on allocation among the major service groups such as broadcasting, private land mobile, military, and others. A more modest proposal is to employ pricing as a means of allocating frequencies among users within the various services. Allocations among the major service categories, and among services, would continue to be made by administrative decision, but once made, the assignment of frequencies to users *within* each service would be by a process of competitive bidding. This, it is argued, would:

> get rid of the party-line congestion in land mobile and . . . the comparative proceeding in broadcasting. . . . [I]t permits you to move services as a group and eliminate some of the television problems that exist [in the case of isolated transfers] . . . . [I]t permits you to introduce into the process . . . non-economic considerations. . . .[275]

Thus, this proposal is primarily aimed at eliminating the comparative hearing process in broadcast licensing and relieving con-

274. *Quoted in* Jones Report at 91. Compare the criticism of service subsidies effected by internal subsidization policies, commonly pursued by regulatory agencies, in Posner, *Natural Monopoly and Its Regulation*, 21 Stan. L. Rev. 548, 608 (1968).

275. *Quoted in* Jones Report at 103-04.

gestion in the land mobile area.[276] Without attempting an extended analysis of this proposal, some comment seems appropriate insofar as it bears directly on the use of a pricing system as a means of spectrum allocation and management.

A primary achievement of this proposal would be the elimination of the comparative hearing process, a result which would be considered by many as a highly laudable achievement.[277] The comparative hearing process has been justly maligned. In practice it tends to be an endless, ill-defined contest—a kind of modern day analogue to the ancient forms of trial by ordeal. While past experience indicates that reform is necessary, the competitive bidding procedure would not improve the system. Instead of establishing standards by which to make a reasoned, meaningful choice between applicants in terms of their qualifications and ability to serve the public interest, the competitive bidding proposal would abandon all attempts to make any judgment on qualifications or public interest. It cannot be pretended that the ability to pay has any necessary correlation to qualifications or ability to render service to the public. Therefore the bidding proposal must rest on either of two premises: (a) that society has no preferences between given applicants, or (b) the present system does not make a meaningful choice anyway; a bidding system will at least introduce administrative efficiency.

The first premise cuts against the grain of communications regulation since 1927 and rejects the concept of public service which underlies all communication regulation, a concept no informed person, whatever his opinion as to the results of present-day enforcement, expects to see abandoned. Although the choice between competing applicants is not easy to make in terms of meaningful and acceptable criteria, the mere difficulty of making a choice scarcely justifies not making it when choice is important.

As to the second premise, it may be quite true that the present process has not served to make meaningful choices. Also it is true that if the criteria for making a choice between competing applicants are sound one would expect them to be applied to *all* applicants—those who are not involved in comparative hearings as well as those who are. But these shortcomings are not in-

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276. This proposal is an expanded application of the early suggestion by Professor Coase that a competitive bidding system be substituted for the comparative hearing process. *See* note 246 *supra*, and accompanying text.

277. *See, e.g.*, Jones Report at 105.

herent in the system of licensing and they could be remedied within the system by establishing meaningful criteria for licensing applicants.

The merits of a competitive bidding system as proposed to be applied to land mobile users are more difficult to analyze since it is not precisely clear what the proposal entails. It has been suggested generally that an administrative decision determine how many land mobiles will be allowed in "any given service" and that the available frequencies then be "auctioned off."[278] The primary aim of this plan is to eliminate "party line" sharing of frequencies and substitute a system of exclusive use as in the broadcast services. But it is not clear what is meant by the terms "any given service." It might mean that within each of the broad categories of land mobile services—public safety, industrial, land transportation—there would be competitive bidding among each user without regard to whether the user was, for example, in the business radio service or the petroleum radio service.[279] Alternatively it might mean that only within a particular service, such as the business radio service, would there be competitive bidding among individual users.

If the former is being proposed, the basic objection previously raised—that it does not permit a policy judgment to be made as to the relative social priorities of the different uses—seems aplicable. It might be argued that the basic problem of public policy is resolved once the allocations are made as *among* the major service categories, and that *within* those service categories it is largely a matter of indifference how the frequencies are divided: but this seems unacceptable. While it may be that neither service is entitled to priority over the other since each is equally important, an even apportionment is not the same thing as a random apportionment.

However, if the proposal is to introduce a competitive bidding system as among *individual users within the same service*, it may be more worthy of consideration. Under present regulatory philosophy it does not appear to be a matter of large concern

278. *Quoted in* Jones Report at 103.

279. Some participants in the Airlie House Conference on the Use and Regulation of the Radio Spectrum, at which the quoted proposal was made, appear to have understood this proposal as involving competitive bidding among the major service categories of land mobile users since they expressed concern about the possible inability of police or other public safety users to outbid the others. *See* Jones Report at 104-05. Though this does not seem to be what is contemplated, the quoted proposal is sufficiently vague to include almost anything.

which of two business radio users obtains the use of a business radio frequency. This conclusion is supported by the fact that individual license qualifications other than citizenship are virtually nonexistent. Unlike the broadcaster, the *individual* land mobile user does not have any special public service obligation; it is enough that a general business purpose is served. If so, there is perhaps no objection *in principle* to the proposal to establish competitive bidding among users. As a practical matter, however, such a system would not be easily accepted. If individual land mobile uses are to be made exclusive, or the amount of sharing is to be limited, it will be difficult to justify a different process than that which is followed in the case of broadcasters. The mere *appearance* of discrimination in the treatment of broadcast and private land mobile users in this regard would probably force similar treatment of the two, resulting in a comparative evaluation process for land mobile users similar to that used for broadcasters. Given the present size of the Commission and the number of applicants, this would be impossible.

C. Administrative Allocation on the Basis of "Simulated" Pricing

Recognizing the impracticability of a pure market pricing system, a variant on this has been proposed in which allocations decisions would continue to be made by administrative decision, but the decisions would be made to conform to economic criteria by the use of "simulated" or "shadow" pricing.[280]

The exact operation of this system of simulated prices is unclear. One possibility which has been suggested is to compare the contribution made by the various radio services directly or indirectly to the gross national product. The reasoning is as follows: use of radio frequencies is essential to air travel; the airlines contribute X dollars to the GNP; therefore aviation frequencies used by them contribute, indirectly, X dollars to the GNP. A moment's reflection reveals the crudeness of such a formula as a means of valuing a particular frequency or frequency band. The problem is not whether airlines are going to have frequencies, but rather involves the amount, type and conditions of use of their frequencies.

A more discriminating approach would be for the allocating agency to establish the value of frequencies to a particular group

280. See the proposals by Professor Levin, *quoted and discussed in* Jones Report at 97-102.

of users by a form of "costing" its use. For example, the value of the spectrum to land mobile users would be estimated by calculating capital and labor costs incurred in doing the same job with and without mobile radio. The value of the spectrum to broadcasters could be estimated by comparing the cost of delivering programs to homes via cable, as compared to conventional over-the-air transmission.[281]

While the simulated pricing approach does avoid the practical problem of creating a market structure in which a free market pricing system could operate, it does not meet the more fundamental problem, noted earlier, that there is no necessary correlation between the value fixed by a pricing system and social value or social utility. Consider the above example of "costing" the use of frequencies for broadcast stations. The implicit assumption is that, apart from cost aspects, the cable transmission and broadcast distribution systems are substitutes. But that assumption would clearly be disputed by many who would argue that broadcast service offers social advantages which cannot be meaningfully "costed" in an accounting or economic sense. The simulated price cannot therefore be used as the sole or even the primary criterion of administrative judgment.

This is apparently accepted by proponents of the simulated price approach who nevertheless argue that this approach does provide a significant criterion for the administrative decision-maker.[282] And it does. But, in a general fashion "cost" considerations are already taken into account where possible.[283] The question is simply how much more refined and elaborate should we make the "cost" finding process. Those proposing a system of "shadow prices" apparently envision a more structured, formal process for determining cost/price—a process more or less like a formal valuation or rate-making proceeding. If this is what is contemplated, the desirability of such a process must be questioned.

First, it must be recognized that the development of simu-

281. *Id.* at 99. Apart from the "cost" comparison between CATV and broadcasting as a means of setting the "cost" of broadcast use, it has been argued that a nationwide system of wired television in lieu of the present broadcast system would enable a large amount of the spectrum to be reallocated from broadcast to nonbroadcast use. Barnett & Greenberg, *A Proposal for Wired City Television*, 1968 WASH. U.L.Q. 1, 22. Such a substitution of wired television for broadcasting raises many difficult questions of public policy; however, an exploration of these policy questions would require a study in itself.

282. *See* Jones Report at 99-100.

283. *Id.* at 100.

lated market data on which to base cost/price findings would not be an easy task. It has been suggested that without forcing claimants to undergo actual costs in bidding for frequencies, exaggeration by rival claimants as to the "costs" of their respective uses would occur, such that the data produced will give only a very crude indication of actual value.[284] But a more basic objection is that economic analysis is not an exact science capable of commanding general agreement on principles even among objective analysts. Compounding the normal difficulties of cost analysis is that here the analysis must include a comparative study of diverse services.

Analogy might be made to the problem which has plagued the ICC in setting the rates for rail, motor and water carriers so as to "recognize and preserve the inherent advantages" of each mode[285]—the problem of determining in any given case which type of carrier is the "low cost mode." After years of intermodal rate-making, fixed standards still have not been established for determining how the low cost mode is to be determined.[286]

It might be observed that, while cost analysis would be complex and time consuming, it might be no more so than existing processes.[287] In any event, if such a complex analysis is undertaken for purposes of intermodal transport rate-making, is it not equally appropriate to undertake them for the analogous purpose of interservice allocation of radio frequencies? If the arduous and complex process of cost analysis produced a criterion which would be decisive, or even dominant, it might be worthwhile. However, for reasons already discussed, it seems probable that once a "cost" or "price" has been set for the various uses of frequencies, so little of the decision-making problem will have been solved as to make the game not worth the candle. The immeasurable social utility considerations will continue to loom so large that in most cases the area for adminis-

284. Meckling at 29. *See also* Jones Report at 101.

285. *See* National Transportation Policy, 49 U.S.C. § 1 (1964) (preceding note).

286. *See* American Commercial Lines, Inc. v. Louisville & Nashville R.R., 88 Sup. Ct. 2105 (1968). *See also* ICC v. New York, New Haven & Hartford R.R., 372 U.S. 744 (1963). In making its cost determinations the Commission has held "public costs" cannot be considered, largely because of the "insurmountable problems" of determining and allocating such costs. Grain In Multiple Car Shipments—River Crossings to the South, 321 I.C.C. 582 (1963), *rev'd on other grounds*, 229 F. Supp. 572 (S.D. Ohio 1964), *modified*, 379 U.S. 642 (1965).

287. *See* Meckling at 29.

trative discretion would have to be as broad as it is under the present system.

V. CONCLUSION

No one today can reasonably deny that the problems of frequency allocation and spectrum management are becoming ever more difficult. Demands for frequencies are increasing at an accelerating pace and the supply of available frequencies is fast being depleted. The result plainly is that the conflict between rival frequency claimants is becoming more acute, as is the need for a closer look at priorities among services and tighter management control to assure maximum utilization of and optimal social benefit from the radio spectrum. But, as with all things, to identify the problem is one thing, to solve it quite another.

The complexity of the problems confronted here—in which economic, social, technical, legal and, by no means least, political considerations intrude—would seem to counsel caution in drawing conclusions too quickly or recommending major institutional change too readily. Unfortunately, such caution has not been evident in much of the critical commentary on the subject, nor in a large and seemingly growing number of reform proposals.

Some reform proponents, seizing on the present dual jurisdiction of the FCC and the executive branch as a prime source of inefficiency and an impediment to sound policy development, have jumped quickly to the conclusion that unified allocations authority in a single agency is the salvation. But this conclusion provides little real analysis of such questions as whether and to what extent the dual jurisdiction has really hindered sound policy development, the probabilities of improving the situation simply by unifying authority, and the practical implications of such a change.

The case for unified control is not a compelling one, but it is not disputed that, *other things being equal*, it might be somewhat more efficient and more conducive to effective overall allocations policy planning to have complete authority vested in a single agency. But other things are not equal. Essentially, unification of management control comes down to two alternatives: placing control in the hands of the executive or placing control in the hands of the FCC. The first alternative is fundamentally at odds with the fact that the executive is the largest single user of frequencies. Very plainly it is a matter of putting the wolf in charge of the flock. The second alternative avoids some of the pitfalls of the first. In general principle, a

case can be made for FCC control. But giving the FCC unified authority seems politically unfeasible. First, the FCC is a much maligned agency and expansion of its authority would be made more difficult for that reason alone. More important, however, any attempt to divest the executive of its present authority would be most forcefully opposed by the military establishment, which would argue, as it has in the past, that executive control is essential to national security. In the face of such opposition there is no chance that Congress would thus delimit "executive prerogative."

These objections are not dispelled by the proposal to give the FCC authority subject to appeal and final decision by the President. Although in appearance a judicious compromise, experience suggests that in ultimate effect this would prove to be no different from giving complete authority to the executive.

Not all of the advocates for radical administrative reorganization support unified control of frequency allocations and spectrum management. The Bartley proposal would retain dual jurisdiction over allocations but would completely transform the structure of spectrum management within the private sector. However, this "balkanization" of regulatory authority is not only out of step with the trend toward administrative consolidation, it is totally misdirected as an effort to meet the current needs of telecommunications regulation.

Far more drastic than any of the proposals for administrative reform are a number of proposals for eliminating or at least minimizing the administrative process itself, substituting an "economic process" in which allocations are made through some form of open market or administratively determined pricing of frequencies. This economic approach has attracted great interest and considerable support in many circles. The attraction is not difficult to appreciate. In contrast to a system in which allocations are the result of a complex and uncertain mix of subjective judgment, dimly outlined priorities and policies, "irrational" politics and "semirational" legal standards, a pricing system promises simplicity, "rationality," objectivity and all the other ideals of economic science. The rather basic practical impediments to the implementation of a system in which price is made to control frequency allocations do not seem to have significantly dampened the enthusiasm of those who are content to leave such "detail" to the lawyers and other "technicians" in attendance. Nor does there appear to be any marked concern among those who vigorously press for such a system that

it is ill-designed to evaluate and measure the social interests and needs served by the variable uses of radio, except by forcing them onto the procrustean bed of economic efficiency. Perhaps this is symptomatic of a larger bias. As Professor Galbraith has observed (with exaggeration permitted of artistic license): "This is the modern morality. St. Peter is assumed to ask applicants only what they have done to increase the GNP."[288] But it is not the intention of this article to disparage the importance of economic considerations, and their relevance to the process of making radio frequency allocations is not disputed. The proposals to implement a pricing system are objectionable, not because they introduce irrelevant considerations, but because they explicitly or implicitly make economic achievement the primary, or even the exclusive, test of social needs and interests.

Proposals for sweeping institutional overhaul of the system offer no panacea to the problems of radio frequency allocation and spectrum management. This is not to intimate that some administrative reorganization is not clearly needed. On the contrary, there is a vital need for a stronger, more independent executive authority to manage the Government's use of frequencies more effectively. However, the institutional changes required to accomplish this do not entail any great organizational or administrative upheaval. Apart from the task of reconstituting the present authority and responsibility in an independent office, the problem of strengthening executive management essentially becomes the familiar problem of adequate budget, staff and effective leadership.

Similar conclusions may be drawn with respect to the FCC. It has been organized and reorganized. There may be some further administrative changes which could be made, but the present basic organization, which essentially meets the recommendations of the Hoover Commission, the Landis Report and the most recent (1961-62) management study, seems well conceived. And, incredible as it may seem to some critics, the FCC has been in the vanguard of the major federal agencies in some major procedural respects.[289] Yet it cannot be pretended that such reorganizations and the adoption of such "modern" techniques have insured a more adequate performance by the FCC in

288. J. GALBRAITH, *supra* note 270, at 408.

289. For example, in its use of rule-making procedures in formulating substantive policy, the FCC has long been in advance of other agencies who have been urged to follow the FCC's example in this aspect. *E.g.*, E. REDFORD, NATIONAL REGULATORY COMMISSIONS, NEED FOR A NEW LOOK 17 (1959).

discharging many of its regulatory responsibilities. To all but the theologians of administrative reform this should be cause for some skepticism about the efficacy of continued institutional reorganization and administrative process reform. Something else is evidently needed. No amount of reorganization and reform, however artful, can satisfy or supplant the FCC's critical need for a more adequate capability for research and planning, for monitoring and inspecting the use of assigned frequencies, and for more effective processing of the hundreds of thousands of license applications. And, of course, there is the ever present need for strong leadership—a commonplace observation which is all too often spurned by the architects of administrative reform.

Ultimately it must be recognized that institutional reorganization and administrative process reform has limits beyond which it can no longer be relied upon to resolve the problems of regulation. Thereafter, persistent attachment to continued reorganization and reform becomes simply evasive insofar as it ignores the inevitable necessity to confront and resolve difficult policy issues and make hard decisional choices. Today in the field of spectrum allocation and management, the necessity to confront the complex issues of public policy, particularly to establish priorities of need among competing uses and to make hard choices among competing demands—or at least make acceptable, workable compromises—cannot be avoided by elaborate reorganization plans or sweeping changes in administrative processes.

Domest

outside interests

Wednesday 10/29/69

3:10 I had a call from Gloria Klein, Assistant to Irving B. Kahn, President and Chairman of the Board of Teleprompter Corporation, indicating they had sent a telegram to you this morning at 11 a.m. (she had called Comsat, who checked with us and found out we had not received it). The telegram read as follows: Judson 2-3800

October 29, 1969

Honorable C. T. Whitehead
Office of the President
The White House
Washington, D. C.

Yesterday I requested and was denied attendance on behalf of Teleprompter Corporation at a meeting arranged by James McCormack, Chairman of Comsat, to be held at 2:30 p.m. Wednesday, October 29, with the networks, CBS, NBC, ABC, and the Corporation for Public Broadcasting. In a telegram sent to James McCormack yesterday, I said

> "Per telephone conferences today, this confirms repeated demands for full Teleprompter CATV representation and participation at conference scheduled tomorrow, October 29, 1969, by your office with TV broadcast networks re domestic satellite distribution plans for video programs.
>
> Exclusion of CATV from this meeting prejudices and impairs right of our company and industry to full participation in network distribution by satellite in clear violation of antitrust laws. Must respectfully demand that you reconsider decision to bar Teleprompter CATV participation in all facets of this critical meeting."

I believe it to be absolutely imperative that whatever domesstic satellite system is proposed that we have open access, including ownership participation, on the part of all possible domestic users.

/s/ Irving B. Kahn
President and Chairman of the Board
Teleprompter Corporation

50 West 44th Street
New York, New York 10036

The White House
Washington

1969 OCT 29 PM 3 52

No reply

WA111 PD

WASHINGTON DC 29 208P EDT

CLAY T WHITEHEAD

THE WHITE HOUSE

RFER TO COMSAT OPCEN NO 5472.

IN REPLY TO YOUR TELEGRAM DATED OCTOBER 28, 1969, PERTAINING TO OUR SCHEDULED MEETING IN NEW YORK TODAY WITH ABC, CBS, NBC AND CPB REPRESENTATIVES, LET ME REPEAT THE ASSURANCES I GAVE YOU YESTERDAY ON THE TELEPHONE. THE MEETING TODAY IS IN SPECIFIC RESPONSE TO A PROPOSAL MADE BY DR. STANTON RECENTLY WITH

RESPECT TO THE ESTABLISHMENT BY THE NAMED NETWORKS OF A DOMESTIC SATELLITE SYSTEM FOR NETWORK DISTRIBUTION PURPOSES. PARTICIPATION IN THE MEETING IS LIMITED AS IT HAS BEEN SIMPLY BECAUSE THE MEETING IS RESPONSIVE TO A PROPOSAL MADE ESSENTIALLY ON BEHALF OF THOSE ATTENDING. IN ACTUALITY, THE MEETING IS MERELY THE FIRST OF MANY SUCH MEETINGS WITH ALL PARTIES WHO MIGHT BE INTERESTED IN COMSAT'S LATEST PROPOSAL FOR A DOMESTIC COMMUNICATIONS SATELLITE SYSTEM DESIGNED TO MEET THE NEEDS OF ALL POTENTIAL USERS. OUR GOAL IN THIS MEETING, AS IN THOSE TO COME, IS TO DISPLAY OUR WARES IN THE HOPE THAT WE CAN OBTAIN CONSTRUCTIVE

CRITICISM OF OUR APPROACH AND GENERATE INTEREST AMONG ALL
POTENTIAL USERS OF SUCH A SYSTEM IN ENCOURAGING SUPPORT FOR
FAVORABLE ACTION AND NECESSARY APPROVALS BY THE EXECUTIVE BRANCH
OF THE FEDERAL COMMUNICATIONS COMMISSION FOR COMMUNICATIONS
SERVICES WHICH I AM SURE YOU AGREE ARE BOTH IN THE PUBLIC INTEREST
AND LONG OVERDUE. YOUR VIEW THAT YOUR COMPANY OR THE CABLE
TV INDUSTRY OR ANY OTHER INDUSTRY IS BEING EXCLUDED FROM FULL
PARTICIPATION IN NETWORK DISTRIBUTION BY SATELLITE IS INACCURATE.
I ASSURE YOU THAT YOU WILL BE INVITED TO PARTICIPATE FULLY IN
AN IDENTICAL MEETING THAT WILL BE HELD FOR CABLE TV REPRESENTATIVES,

AND THAT ALL OTHER POTENTIAL USERS WILL BE INVITED TO
PARTICIPATE IN SIMILAR MEETINGS WITH THOSE WHO HAVE SUBSTANTIALLY
IDENTICAL INTERESTS. INASMUCH AS THE MEETING DOES NOT
CONTEMPLATE AND WILL NOT IN FACT RESULT IN NEGOTIATIONS OR THE
REACHING OF AGREEMENTS, AND THAT IT IS INDEED NOTHING MORE THAN
EXPLORATORY, I FAIL TO SEE HOW IT IS EITHER PREJUDICIAL TO YOU
OR YOUR INDUSTRY OR IMPAIRS YOUR RIGHTS OF FULL PARTICIPATION
IN ANY ULTIMATE DOMESTIC COMMUNICATIONS SATELLITE SYSTEM SPONSORED
BY COMSAT. IN FACT, COMSAT'S OBLIGATION AS A COMMUNICATIONS
COMMON CARRIER AND ITS INTERESTS CAN ONLY BE FULFILLED

1919 M ST NORTHWEST

WASHINGTON DC 20554

RICHARD MCLAREN ASSISTANT ATTORNEY GENERAL

ANTITRUST DIVN

DEPT OF JUSTICE

9 AND PENNSYLVANIA AVE NORTHWEST

3 WASHINGTON DC 20530

JULIAN GOODMAN PRESIDENT NATIONAL BROADCASTING CORP

30 ROCKEFELLER PLAZA

2 NEW YORK NEW YORK

AND BEST BE SERVED BY PROVIDING NONDISCRIMINATORY SERVICE TO AS MANY USERS AS POSSIBLE. I AM ADVISED BY COUNSEL THAT THE SCHEDULED MEETING IS IN NO WAY VIOLATIVE OF THE ANTI-TRUST LAWS. CONSEQUENTLY, AND WITH BOTH FULL RESPECT AND WARM REGARDS, I MUST DECLINE YOUR DEMAND TO PARTICIPATE TODAY. I WOULD, HOWEVER, VERY MUCH APPRECIATE YOUR ADVISING ME OF YOUR FIRST AVAILABILITY FOR AN IDENTICAL EXPLORATORY MEETING WITH REPRESENTATIVES OF THE CABLE TV INDUSTRY.

COPIES TO

ROSEL HYDE CHAIRMAN FEDERAL COMMUNICATIONS COMMISSION

FRANK STANTON PRESIDENT COLUMBIA BROADCASTING SYSTEM INC

51 WEST 52 ST

NEW YORK NEW YORK

LEONARD GOLDENSON PRESIDENT AMERICAN BROADCASTING COMPANIES INC

7 WEST 66 ST

NEW YORK NEW YORK

3 FRANK PACE PRESIDENT CORP OF PUBLIC BROADCASTING

545 MADISON AVE

NEW YORK NEW YORK

2 IRVING B KAHN

PRESIDENT AND CHAIRMAN OF THE BOARD

TELEPROMOTER CORPORATION

50 WEST 44 ST

NEW YORK

(SIGNED) JAMES MCCORMACK CHAIRMAN AND CHIEF EXECUTIVE OFFICER

COMMUNICATIONS SATELLITE CORPORATION 950 L'ENFANT

PLAZA SOUTH SOUTHWEST WASHINGTON DC 20024.

The White House
Washington

1969 OCT 29 PM 5 01

no reply

WA117 (A NA133) PD

NEW YORK NY 29 113P EST

CLAY T WHITEHEAD

THE WHITE HOUSE

YESTERDAY I REQUESTED AND WAS DENIED ATTENDANCE ON BEHALF OF TELEPROMPTER CORPORATION AT A MEETING ARRANGED BY JAMES MCCARMACK, CHAIRMAN OF COMSAT, TO BE HELD AT 2:30 P.M. WEDNESDAY OCTOBER 29, WITH THE NETWORKS, CBS, NBC, ABC, AND THE CORPORATION FOR PUBLIC BROADCASTING. IN A TELEGRAM SENT TO JAMES MCCORMACK YESTERDAY I SAID QUOTE PER TELEPHONE CONFERENCES TODAY, THIS

CONFIRMS REPEATED DEMANDS FOR FULFILL TELEPROMPTER CATV RESPRESENTATION AND PARTICIPATION AT CONFERENCE SCHEDULED TOMORROW, OCTOBER 29, 1969, BY YOUR OFFICE WITH TV BROADCAST NETWORKS RE DOMESTIC SATELLITE DISTRIBUTION PLAN FOR VIDEO PROGRAMS. EXCLUSION OF CABLE TV FROM THIS MEETING PREJUDICES AND IMPAIRS RIGHT OF OUR COMPANY AND INDUSTRY TO FULL PARTICIPATION IN NETWORK DISTRIBUTION BY SATELLITE IN CLEAR VIOLATION OF ANTITRUST LAWS. MUST RESPECTFULLY DEMAND THAT YOU RECONSIDER DECISION TO BAR TELEPROMPTER CATV PARTICIPATION IN ALL FACETS OF THIS CRITICAL MEETING. I BELIEVE IT TO BE ABSOLUTELY IMPERATIVE

THAT WHATEVER DOMESTIC SATELLITE SYSTEM IS PROPOSED HAVE OPEN ACCESS, INCLUDING OWNERSHIP PARTICIPATION, ON THE PART OF ALL POSSIBLE DOMESTIC USERS

IRVING B KAHN PRESIDENT AND CHAIRMAN OF THE BOARD TELEPROMPTER CORPORATION.

3

2

Monday 10/27/69

meeting (McCormack) 10/29 2:30 N.Y.

10:40 James McCormack called to say they're buttoning up loose ends. When he talked with you, you were discussing a meeting between COMSAT and the broadcasters re domestic services

Now, the New York Times has set up the meeting for him -- it will presumably be held at 2:30 p.m. this Wednesday in New York. (Possibility that the Senate Commerce Cmte. will be bringing some broadcasters here on Wednesday -- in which eventthe meeting would have to be changed.)

Copley Newspapers
SUITE 1200 DAVIS BUILDING
1629 K STREET, N.W.
WASHINGTON, D. C. 20006

Adm. Robert L Dennison, USN (Ret.)

Dr. Clay T. Whitehead
Staff Assistant
Room 110 Executive Office Bldg.
17th and Pennsylvania Avenue
Washington, D. C. 20500

COMMUNICATIONS SATELLITE CORPORATION

Date 11/5/69

To: DR. CLAY T. WHITEHEAD

From: Robert E. Button SA

Per our conversation.

Attachment

Donsat
(outside
interests

Copley Newspapers

ADM. ROBERT L. DENNISON, USN (RET.)
VICE PRESIDENT

SUITE 1200 DAVIS BUILDING
1629 K STREET, N.W.
WASHINGTON, D.C. 20006

TELEPHONE
202-296-8569

October 24, 1969

Dear General McCormack:

I have a general impression that Communications Satellite Corporation has taken the initiative in holding discussions with potential users of domestic communication satellite facilities. We think that the International Press Telecommunications Committee represents groups of certain potential users. The members of the IPTC include the following:

Alliance Europeenne des Agences de Presse
American Newspaper Publishers Association
Association of Commonwealth News Agencies
Commonwealth Press Union
European Press Photo Agencies Union
Federation Internationale des Editeurs de Journaux
Inter American Press Association
Japan Newspaper Publishers Association
Newspaper Press Union of South Africa
Newspaper Publishers Association/Newspaper Society Joint Technical Committee
North American News Agencies (AP, UPI, Reuters)

I represent the Inter American Press Association in the IPTC and am representing the Committee's interests in satellite communications facilities in North America.

I wish to register a request that the IPTC be included as a potential user in any discussions concerning domestic communication satellite facilities.

Sincerely,

Robert H Dennison

General James McCormack,
President
Communications Satellite Corporation
950 L'Enfant Plaza, S.W.
Washington, D. C. 20024

cc: Mr. Rosel H. Hyde
Dr. Clay T. Whitehead

Domsat (outside interests)

National Policy on Domestic Satellite Communications

Satellite communications for U. S. domestic service have been under examination for a number of years now, by the Executive Branch of the government and by the Federal Communications Commission. In addition, hearings have been held in the Congress and volumes of proposals have been submitted by industry, by the broadcast media and by entities whose concern is with education and noncommercial applications. A very thorough discussion has also been had in the press. This detailed consideration of domestic satellite communications has thus taken place in many quarters of our national life over a period of approximately four years.

This public discussion has been concerned chiefly with four questions:

- The most efficient use of the frequency spectrum, a vital national resource.
- The range of cost of domestic satellite communications.
- The need to identify predictable demands for satellite service.
- The appropriate degree of freedom of access to the satellite system by those wishing to make use of it.

Now, in the closing months of 1969 the situation is quite different from that which existed at the onset of the public debate. The chief differences are:

- There is a present and pressing demand for providing at least some major communication service by satellite.
- It is adequately clear that those services can be provided by satellite at attractive cost levels.
- There are many new and rapidly growing applications for satellite service which promise to provide a healthy and burgeoning market in the foreseeable future.

These present circumstances favor the prompt authorization of communication satellite services for which there is an immediate and viable demand. Such a step should, of course, be considered against the chief requirements of a national communications policy, which are these:

- Any communications plan must make the most economical use of and protect the radio frequency spectrum.
- Due regard should be had for a healthy degree of competition in domestic communications which will favor the quality of service, employment and capital investment.
- Technical innovation should be encouraged, particularly along lines that will reduce the cost of communications and enlarge the available frequency spectrum.

- An adequate service capability must be provided in order to serve the exploding requirements for many forms of commercial and noncommercial communications.

- There must be the maximum freedom of access to the domestic system that is compatible with economical and orderly service.

In addition to these prime requirements of executive policy, the most attentive regard must be given to the policy established by Congress in the Communications Satellite Act of 1962, that the benefits of the new satellite technology should be reflected in both quality of services and charges for such services.

Accordingly, it is the policy of the Executive Branch of the Government that satellite communications services that are within the capability of industry, that are economically attractive to a user market, and that satisfy the policy requirements just stated should be established without delay.

Friday 11/26/69

11:45 Donald C. Beelar, Communications Counsel, American Newspaper Publishers Association, will be coming with Stanford Smith to your meeting on 12/1 at 10:30 a.m.

Tuesday 11/25/69

11:50 We have scheduled a meeting for Mr. Stanford Smith, General Manager of American Newspaper Publishers Association, to come down from New York to meet with you on Monday (12/1) at 10:30 a.m.

(See attached)

THE WHITE HOUSE

WASHINGTON

Eva:

Please follow up

November 17, 1969

Dear Mr. Smith:

I was pleased to learn of your interest in the domestic satellite question and will be pleased to meet with you at your convenience. My secretary will be in touch with your office in the very near future to see when we can get together.

I look forward to seeing you.

Sincerely,

Clay T. Whitehead
Staff Assistant

Mr. Stanford Smith
General Manager
American Newspaper Publishers
Association
750 Third Avenue
New York, New York 10017

cc: Mr. Whitehead
Mr. Kriegsman
Central Files

CTWhitehead:jm

ANPA AMERICAN NEWSPAPER PUBLISHERS ASSOCIATION
750 Third Avenue • New York, New York, 10017 • Telephone: YUkon 6-8200

November 13, 1969

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

Dear Dr. Whitehead:

The prospect that COMSAT might provide communications services for news and pictures to newspapers through a domestic satellite system is of intense interest to newspapers and the press wire services.

Along with my colleagues of the wire services, I was very much impressed by a briefing given to us last week by COMSAT Chairman James McCormack and his associates. I am enclosing a report which we are making to our members today through the ANPA General Bulletin. Our membership of more than 1,000 daily newspapers has more than 90% of total U. S. daily newspaper circulation.

Because of the great importance of this matter to the future of newspapers in this country, I would welcome an opportunity to meet with you briefly for the purpose of outlining for your consideration the significance of this development for the press.

I will be at your disposal for a conference at your convenience.

Sincerely yours,

Stanford Smith

Stanford Smith
General Manager

Encl.

AMERICAN NEWSPAPER PUBLISHERS ASSOCIATION
STANFORD SMITH, General Manager 750 Third Ave., New York, N.Y. 10017

ANPA General Bulletin No. 52 Nov. 13, 1969

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General Management

Newspapers and Wire Services Support Multi-Purpose COMSAT Domestic System

Representatives of newspapers and press wire services are encouraged by the prospects of sharing in a domestic communications satellite system proposed by Communications Satellite Corporation (COMSAT). Following a meeting at COMSAT headquarters Wednesday, Nov. 5, representatives of ANPA, Associated Press, United Press International and the International Press Telecommunications Committee expressed support for the COMSAT proposal for a high capacity system that could serve a wide variety of U.S. communications users. It would **not** be limited to television transmission as had been proposed long ago by other parties.

Lower communications costs through greater efficiency in utilization of new technology can be foreseen for the AP, UPI, supplemental news services and individual newspapers. The satellite system would be capable of handling all forms of communications, including teletypewriter, pictures, facsimile, data, voice and television.

ANPA has been advocating the principle of access to any domestic satellite system for newspapers and news wire services through participation since 1966 in the Federal Communications Commission domestic satellite proceeding (Docket No. 16495).

Discussions with COMSAT centered on the requirements of the press, and how the proposed domestic satellite system could be used to meet news and picture distribution needs.

COMSAT officials were Chairman James McCormack, President Joseph V. Charyk, Vice President-General Counsel David Acheson, Vice President-Operations George Sampson and Assistant Vice President for Information Matthew Gordon.

In describing the proposed system, COMSAT officials emphasized that it would accommodate not only the needs of the TV networks but would have sizable remaining capac-

ity to handle any other forms of communications in a highly economical manner.

COMSAT said it would provide and operate the satellites and major send-and-receive earth stations, plus other stations as required. But COMSAT suggested that receive-only stations in the system might be owned by individual users or jointly by a number of communication users. COMSAT said it remained flexible on how this should be done.

The ANPA Press Communications Committee will meet soon to discuss the proposed plans further with other press groups. Further conferences with COMSAT are planned after more detailed press requirements are formulated.

Rail Shopcraft Unions Reject Emergency Board Recommendations

Chief negotiator for the railroad unions rejected as inadequate wage increases recommended by a Presidential emergency board in a labor dispute between 48,000 shopcraft workers and the nation's railroads.

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>
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[Last ref.: Gen. Bulletin No. 18, April 3, 1968, p. 152.]

Friday 11/26/69

MEETING
12/1/69
10:30 a.m.

11:45 Donald C. Beelar, Communications Counsel, American Newspaper Publishers Association, will be coming with Stanford Smith to your meeting on 12/1/69 at 10:30 a.m.

Domsat
(outside interests

Tuesday 11/25/69

11:50 We have scheduled a meeting for Mr. Stanford Smith, General Manager of American Newspaper Publishers Association, to come down from New York to meet with you on Monday (12/1) at 10:30 a.m.

(See attached)

November 17, 1969

Dear Mr. Smith:

I was pleased to learn of your interest in the domestic satellite question and will be pleased to meet with you at your convenience. My secretary will be in touch with your office in the very near future to see when we can get together.

I look forward to seeing you.

Sincerely,

Clay T. Whitehead
Staff Assistant

Mr. Stanford Smith
General Manager
American Newspaper Publishers
Association
750 Third Avenue
New York, New York 10017

cc: Mr. Whitehead
Mr. Kriegsman
Central Files

CTWhitehead:jm

AMERICAN NEWSPAPER PUBLISHERS ASSOCIATION
750 Third Avenue • New York, New York, 10017 • Telephone: YUkon 6-8200

November 13, 1969

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

Dear Dr. Whitehead:

The prospect that COMSAT might provide communications services for news and pictures to newspapers through a domestic satellite system is of intense interest to newspapers and the press wire services.

Along with my colleagues of the wire services, I was very much impressed by a briefing given to us last week by COMSAT Chairman James McCormack and his associates. I am enclosing a report which we are making to our members today through the ANPA General Bulletin. Our membership of more than 1,000 daily newspapers has more than 90% of total U. S. daily newspaper circulation.

Because of the great importance of this matter to the future of newspapers in this country, I would welcome an opportunity to meet with you briefly for the purpose of outlining for your consideration the significance of this development for the press.

I will be at your disposal for a conference at your convenience.

Sincerely yours,

Stanford Smith

Stanford Smith
General Manager

Encl.

AMERICAN NEWSPAPER PUBLISHERS ASSOCIATION
STANFORD SMITH, General Manager 750 Third Ave., New York, N.Y. 10017

ANPA General Bulletin No. 52 Nov. 13, 1969

Index

General Management

Newspapers and Wire Services Support Multi-Purpose COMSAT Domestic System

Representatives of newspapers and press wire services are encouraged by the prospects of sharing in a domestic communications satellite system proposed by Communications Satellite Corporation (COMSAT). Following a meeting at COMSAT headquarters Wednesday, Nov. 5, representatives of ANPA, Associated Press, United Press International and the International Press Telecommunications Committee expressed support for the COMSAT proposal for a high capacity system that could serve a wide variety of U.S. communications users. It would not be limited to television transmission as had been proposed long ago by other parties.

Lower communications costs through greater efficiency in utilization of new technology can be foreseen for the AP, UPI, supplemental news services and individual newspapers. The satellite system would be capable of handling all forms of communications, including teletypewriter, pictures, facsimile, data, voice and television.

ANPA has been advocating the principle of access to any domestic satellite system for newspapers and news wire services through participation since 1966 in the Federal Communications Commission domestic satellite proceeding (Docket No. 16495).

Discussions with COMSAT centered on the requirements of the press, and how the proposed domestic satellite system could be used to meet news and picture distribution needs.

COMSAT officials were Chairman James McCormack, President Joseph V. Charyk, Vice President-General Counsel David Acheson, Vice President-Operations George Sampson and Assistant Vice President for Information Matthew Gordon.

In describing the proposed system, COMSAT officials emphasized that it would accommodate not only the needs of the TV networks but would have sizable remaining capac-

ity to handle any other forms of communications in a highly economical manner.

COMSAT said it would provide and operate the satellites and major send-and-receive earth stations, plus other stations as required. But COMSAT suggested that receive-only stations in the system might be owned by individual users or jointly by a number of communication users. COMSAT said it remained flexible on how this should be done.

The ANPA Press Communications Committee will meet soon to discuss the proposed plans further with other press groups. Further conferences with COMSAT are planned after more detailed press requirements are formulated.

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UNITED STATES
INDEPENDENT TELEPHONE ASSOCIATION
438 PENNSYLVANIA BUILDING, WASHINGTON, D. C., 20004
AREA CODE 202
783-5300

October 31, 1969

Dr. Clay T. Whitehead
Staff Assistant
Executive Office Building
Room 110
Washington, D. C. 20250

Dear Dr. Whitehead:

As the Executive Vice President of the United States Independent Telephone Association I have been asked to convey to you the views of the Association on Domestic Satellite Systems as well as satellite systems in general.

I am, therefore, enclosing copies of the Report of our Communications Satellite Committee accepted by our Board of Directors at its annual meeting in Washington, D. C., October 18, 1969 and a resolution dealing with Domestic Satellite Systems adopted by the Board at that meeting. As these documents point out, USITA would be opposed to the exclusive ownership of earth terminal stations by the Communications Satellite Corporation. In our view satellite communication is not some radically new communications medium but actually another method for deriving microwave communications channels using space vehicles rather than terrestrial locations for repeaters.

Satellites, as you know, have certain shortcomings such as their vulnerability to jamming and their relatively short useful life. In addition, the time lag in voice communications via satellite is considered annoying by many. Cable communication facilities do not have these particular faults. USITA believes that, as a matter of National as well as public interest, the development of cable technology should go forward simultaneously with that of satellite technology.

Although not presented as a formal resolution, our Board also approved the Communications Satellite Committee's recommendation in its report "that USITA as a matter of record endorse the position of AT&T and the international common carriers in maintaining a mix between cable and satellite circuits in order to achieve maximum reliability through diversity, among other goals."

Sincerely yours,

WCMott

WILLIAM C. MOTT
Executive Vice President

UNITED STATES INDEPENDENT TELEPHONE ASSOCIATION
72nd Annual Convention - Washington, D. C.
October 19-22, 1969

REPORT OF THE COMMUNICATIONS SATELLITE COMMITTEE*

TO THE BOARD OF DIRECTORS:

This year's report to the USITA membership brings to the Independent Telephone Company executive a condensed account of the developments which have taken place in this field since the last report.

Recent Developments and Significant Events

Intelsat III Series

While technically satisfactory, there have been mechanical problems in some of the Intelsat III satellites launched during the past year and one satellite lost as a result of launch failure.

The major mechanical problems in the Intelsat III series included the freezing of the antenna system which prevented it from maintaining proper continuous orientation. It is hoped that this has been solved by the addition of heating elements to the despinning equipment.

The reliability of satellites for international circuit usage still trails that of cables, and accordingly the recommendation of this committee to the Board and the membership is that USITA as a matter of record endorse the position of AT&T and the international common carriers in maintaining a mix between cable and satellite circuits in order to achieve maximum reliability through diversity, among other goals.

Intelsat IV Series

COMSAT plans call for the introduction of the Intelsat IV configuration in 1971. The capacity of these satellites will be in the magnitude of 6,000 two way telephone circuits as opposed to the 1200 circuit capacity of the III Series.

COMSAT - International Plans and Operations

By year end 1969, COMSAT and the member nations of Intelsat expect to have some 40 earth stations in operations throughout the world, a gain of approximately 20 over the same period a year ago. The International Telecommunications Satellite Consortium, (Intelsat) now has 68 members with COMSAT as the designated US participant. Since 1964 Intelsat has been operating under an Interim Agreement. Meetings were held in Washington in February and March of this year to draw up a modus operandi which would be satisfactory to all member nations. As it is

*This report is not to be deemed to represent the opinion or views of USITA unless and until adopted by the Board of Directors of this Association.

presently constituted, Intelsat is composed of 53.8% US representation (COMSAT) with the other member nations sharing the remaining 46.2%. This is not a fully satisfactory arrangement as far as some of the member nations are concerned, and the views of many of them are reflected in the attached reprint from the London Economist, which also summarizes the view of activities of certain of the European nations in the field of satellite communications.

Domestic Satellite Service

COMSAT along with other interests including the Ford Foundation is actively pressing for FCC action on its April, 1967 request to establish a US domestic satellite system for multi-service use with channels available at no cost to educational broadcasters. COMSAT has proposed a pilot program and seeks to operate the program as trustee until contested matters of ownership are resolved.

If COMSAT is to adhere to its charter as a supplier of satellite circuits to the common carriers, no basic problem is foreseen. If, however, it proposes exclusive ownership and operation of the earth stations USITA should vigorously oppose such a move since it strikes at one of the major considerations in the independent industry, toll and lease rentals.

To be effective in serving the public interest, a domestic system must obviously be interconnected with existing and planned transmission systems such as land lines and microwave networks. Unlike the domestic satellite system which is being prepared for India, a US domestic system would have other broader uses.

The Indian system calls for a synchronous satellite transmitting educational television material to unattended earth reception stations which would be scattered throughout the country as teaching centers. Such reception points would cost in the area of $500 each according to present estimates.

Widespread use of a direct broadcast television system using satellites is not expected for some years.

Sig Mickelson, Vice President of Time Life Broadcasting Inc. and former Chairman of the International Broadcast Institute, writing in the authoritative publication Foreign Affairs has stated, ". . .such a system would be technically feasible as early as 1975, but there is little confidence that society will be ready then in terms of economics, government regulation or international agreement. A target year 1985 seems more likely but only if the necessary national and international regulatory decisions can be made within the intervening time."

Since the regulated carriers have made such massive investments in plant and technology, it is only just that the same industry be permitted to achieve whatever savings may be brought about by a new technology created by Congress to serve that industry.

As regards manning of the earth stations, the Carriers have proposed to ESOC manning levels below the proposed levels being advocated by COMSAT.

It is the recommendation of this committee that the USITA Board of Directors formally convey to the FCC its opposition to any authorization which would permit COMSAT to exclusively own and operate earth stations in the US jurisdiction.

Conclusion

There is no disputing the fact that satellite communications have become an effective reality and provide the quickest means to provide large numbers of channels in a relatively short time. The continued growth of international communications requirements and the possible development of a domestic satellite system call for continued development of both cable and satellite systems and a strong voice for the independent industry in the ownership and operation of earth stations in areas under US jurisdiction.

Respectfully submitted,

COMMUNICATIONS SATELLITE COMMITTEE

K. W. Benckert, New York, N. Y.
Chairman
Douglas Gleason, Kansas City, Mo.
Douglas S. Guild, Honolulu, Hawaii
Russell P. Hulbert, Winter Park, Fla.
James E. Wolf, St. Louis, Mo.

Attachment

The tail and the dog

Comsat . . .

Criticising Comsat is like criticising your mother. Were it not for it/her, there would be nothing to complain about. So compliments should come first. The Communication Satellite Corporation, only seven years old itself, has been magnificent in getting a world satellite system going. In 1962, there was nothing but Syncom, an experimental satellite which proved that the very high orbit (22,300 miles above the earth) was the right one to make satellite communication a commercial reality. Today there is a fairly complete round-the-world network of communication on Intelsat satellites, two or three generations more sophisticated than Syncom. Television from the middle of the Pacific as dawn breaks over a returning space capsule is a matter-of-fact affair. More and more of the underdeveloped world has both telephone and television connection with Europe and North America for the first time. By the end of the year, there will be about 40 earth stations in operation and by the end of 1970, about 60. By 1971, the Intelsat 4 series, a very powerful kind of satellite with 6,000 telephone circuits, will be launched into service.

Comsat, however, has been clumsy in putting an international face on its achievement. Intelsat, the much-touted international consortium of nearly 70 countries which Comsat has put together, is in its present form a kind of hoax.

If you go to Washington, Intelsat is hard to find. It is wiser to ask the taxi to take you to Comsat. Comsat's new building stands in the middle of an essay in baroque modern design called L'Enfant Plaza. Running a satellite company is big business. Comsat occupies several floors and tucked into one of them, like the ladies' knitwear department, is the International Telecommunications Satellite Consortium. A secretary reverentially throws open a door to reveal a gleaming, empty board room. "That's where the international committee meets," she whispers.

Intelsat, one is told, although not so firmly as a few years back, is the owner of the international network. That is, the consortium, in which nearly 70 countries have invested, owns the space segment of the system (the satellites and the telemetering equipment which steers them about). Comsat is no more than the manager and majority shareholder (it owns about 53 per cent of the shares). It comes as a surprise, therefore, to read in small print on the last page of Comsat's report to the President that among its own assets is $75.7 million worth of "satellites, earth stations and other tangible property." This may be no more than Comsat's share of the satellite cost. But it is mystifying why it is not expressed as investment in Intelsat. What Intelsat's assets are is hard to discover; the consortium does not seem to have an annual report.

No wonder that Comsat does not want to become a kind of hired manager of Intelsat's estate. It might lose the chance to count so much of the satellite cost towards its rate base. Rate base is the life-blood of every American communications company; it is the lump sum of invested capital and property on which the Federal Communications Commission decides what rates the company may charge the public. The bigger the base, the higher the rates.

The blame really belongs with Congress. The Communications Satellite Act of 1962 is an object lesson in the way a new technology, with God-knows-what commercial possibilities, can panic people into making a quick grab. In 1962, it was obvious that the satellites developed by the American defence and space programmes could handle world commercial communications traffic. Congress and President Kennedy wanted America to move quickly; if it did not organise a satellite network, someone else would.

But there was a conflict. Investment in satellites had come from public money yet the American belief that the public communications should be run by private

Intelsat 4—the next generation

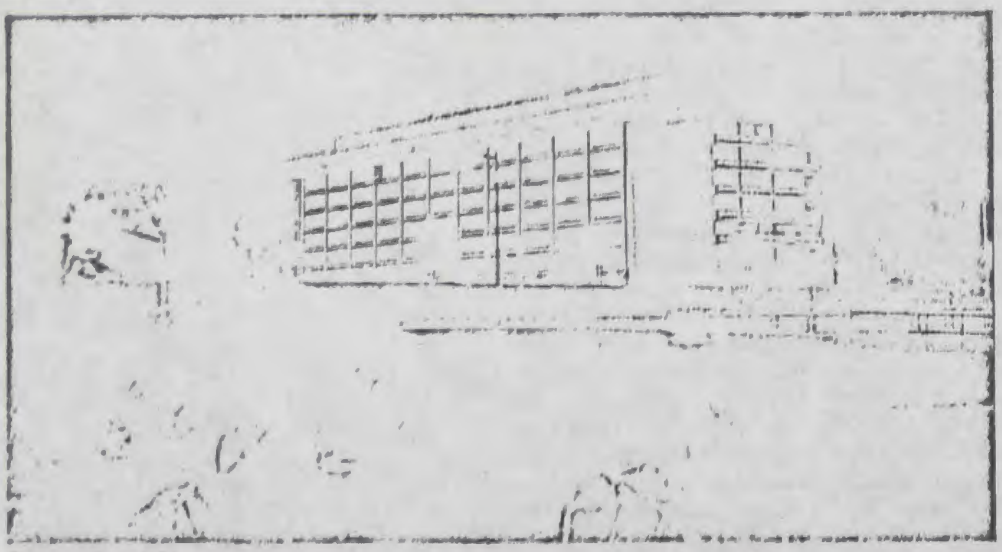
industry is deep and sacred. The compromise was that Comsat should be half-public and half-private; half of its investors should come from the public, the other half from the giant communications carriers. Half of its mandate was to make money, the other half to carry out the foreign policy of the State Department. This built-in schizophrenia has come into the open now in the conflict between Comsat and the State Department about the future of Intelsat.

The sad fact is that if Comsat is not the be-all and end-all of Intelsat, it does not have very much else to do. It is a marvellous managerial machine, with $132 million in the bank, and nothing but its consortium to work with.

Comsat's future is in the hands of the FCC. The commission frustrated the corporation early on; it ruled that Comsat could not deal directly with potential buyers of satellite links—television stations, news agencies and so forth—but must simply be a "carrier's carrier" selling circuits for the communications companies to resell. Then it ruled that Comsat could not own the American earth stations by itself; it had to share ownership with the carriers. In other words, it would have only half-stations to count towards its rate base. No wonder Comsat clings to Intelsat.

There is one last hope, barring a major change in Comsat's shape by Congress. The FCC may let it run a domestic satellite system. The decision should be known soon; Comsat has been waiting since 1966 for permission. But even when permission comes, the arrangement will probably be temporary. Comsat may be allowed to put up two very big satellites (21,600 channels—the distribution variety) and transmit to receivers dotted around the country everything from commercial television to educational programmes to computer data.

But Comsat should be remodelled drastically. It is stuck with one means of sending signals—satellites. Naturally it does all it can to fight for satellite business. The task force for communications policy found that the



Comsat by night

satellite-cable rivalry was not in the national interest; decisions on what to build—the new transatlantic telephone cable, for example—were not made on an economic basis but rather on attempts to keep peace between rival technologies.

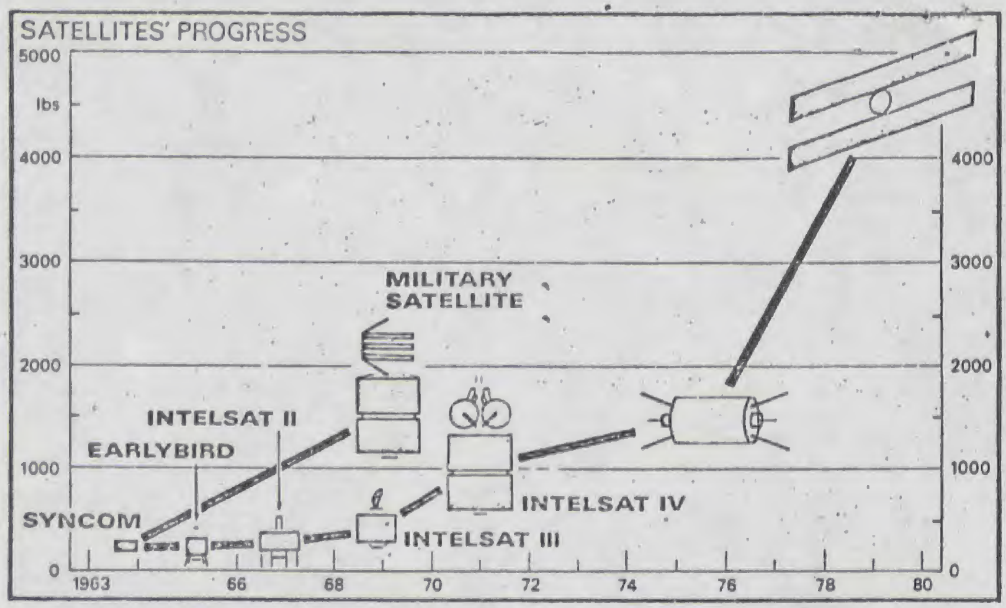
The task force's suggestion, logical and revolutionary, was that Comsat should be allowed to become the chosen carrier for American international communications. That would mean taking the international business of the American Telephone and Telegraph Company—which would be done over AT&T's dead body. (Western Union International and Radio Corporation of America and the International Telephone and Telegraph Company would not be happy either).

If the FCC lets Comsat have the domestic system before November, and gives it some assurance about its rate base, Comsat might relinquish its domination of Intelsat gracefully. Otherwise, there may be an open fight. For lacking control of either international or domestic satellite systems, Comsat has a very dull future, as investors are beginning to suspect, and recent Intelsat 3 failures have not helped. (It shares, first sold at $20 each in 1964, soared to $77 in 1967, but are now chugging along at around $45.) In truth, Comsat has performed the impossible, contradictory task set for it by Congress in 1962 fairly well. Now it should be allowed, one way or another, to stop trying to do diplomacy, at which it is bad, and get on with what it can do well—run a hard-headed, money-making company.

. . . and Intelsat

Five years ago, when Comsat was out recruiting for its international satellite consortium, it was easy enough for most western countries to promise to join under Comsat's temporary rules. Who could argue about swearing to have no other satellites than Intelsat's? Nobody else had any. By 1964, the Americans had Early Bird up and working and they had the know-how to build better satellites and the rockets with which to launch them.

But the time has come for the interim agreements of 1964 to be renegotiated. A permanent arrangement is not proving easy to draw up. Intelsat now has 68 members, compared with its original 14, and many of them are convinced that they too can make communications satellites (they are not so sure about the rockets). The Canadians have their national domestic satellite network all designed. They are not going to join anything which would prevent them from running it as their very own. Other countries, France particularly, are also chary of signing away their right to independent manoeuvre on satellites. But what the non-American members object to most of all is that the consortium has been so dominated by Comsat that they have little to do but say "me too" from time to time.



Comsat owns more than half of the voting stock and is not allowed to own less. It is the manager for the Intelsat system, which allows it to make all the day-to-day financial systems about the international network. The formal governing body of the consortium is an international committee, which meets every six weeks or so. But Comsat has an absolute veto power over the committee. And members of the committee, like Comsat, represent the heavy investors in the system. In truth, many of the members of Intelsat are nothing but spear-carriers. They just send money (the minimum membership fee is about $60,000) and do not have any voice in how the business is run.

Since February and the failure to reach the expected agreement, the State Department has been putting pressure on Comsat to relax its hold on Intelsat. What caused the split between the two was probably the surprise attendance of the Russians at the conference, along with a party of eastern European friends. None of them has joined Intelsat. All are members of Intersputnik, Russia's proposed rival satellite network. But everyone knows that Russia's plans are weak, for it does not have launching sites in the warm tropical places best suited for launching satellites into orbit over the Equator. If Comsat's domination were relaxed and poorer countries given more dignity in the Intelsat arrangement, the communist countries might be tempted in. That would be a prize worth having, even in commercial terms. A consortium of 133 countries (the number of possible members, as Intelsat is open to any member of the International Telecommunications Union) would be better than one with 68.

The rumours from backstage have it that Comsat is giving in. It is hard to be sure, for telecommunications officials of any nationality tend to be quiet grey-haired men who would prefer not to say what they had for lunch and who keep their telephone directories in locked files. The word is, for what it is worth, that the State Department is winning its battle and that Comsat will have to settle for a Perhaps Comsat will accept having its executive authority limited to technical matters and its term of managership limited by contract. Intelsat might have an international secretariat to handle big money matters and there might be a kind of General Assembly as well, where all the members could meet yearly.

Another interim agreement might be best for Intelsat. Satellites are a sometime thing. Nobody knows what they will actually be capable of by 1972. Present estimates are not reliable. Early Bird, designed to last for only 18 months, churned away for four years and now has returned to service. The Intelsat 3, put up over the Atlantic last December, a much more advanced satellite with a life expectancy of five years, packed up just before the Prince of Wales's investiture and its replacement has gone into a wrong orbit. Another interim arrangement for Intelsat, with the Russians participating, and the Americans and perhaps the French trying out their own schemes, would give some experience to go on.

ComSat

WHEREAS, This Association has consistently urged its members to provide all of the communications services required by their customers within their franchised areas, utilizing modern techniques and facilities as they are developed; and

WHEREAS, the provision of communications circuits through the use of space satellites is now being accomplished internationally, demonstrating a similar capability domestically; and

WHEREAS, this Association, by Resolution in 1962, declared itself in favor of the preservation of the free enterprise system in space communications; and

WHEREAS, the planning for, implementation and growth of a domestic satellite communications system includes an interface with terrestrial communications facilities in order to provide a complete customer-to-customer service; and

WHEREAS, Independent telephone companies now provide terrestrial communications facilities within their franchised areas;

NOW THEREFORE BE IT RESOLVED, That the Board of Directors recommends that Independent telephone companies provide all terrestrial facilities and have a strong ownership interest in those earth stations in any domestic satellite system located within their service areas and that this position be supported, as appropriate, in any proceedings before Congress, the FCC or other agencies of the Federal Government.

mtg 10/30/69
10:15 a

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION
320 PARK AVENUE
NEW YORK, N. Y. 10022

HAROLD S. GENEEN
CHAIRMAN AND PRESIDENT

Domestic Contacts
International

November 4, 1969

Dr. Clay T. Whitehead
The White House
Room 110
Executive Office Building
Washington, D. C.

Dear Dr. Whitehead:

It was a pleasure to meet you and to be able to convey ITT's viewpoints in regard to several of the more pressing communication problems which confront the industry and government at this time.

Having an appreciation for the complexities of the issues involved and the far-reaching implication of the recommendations which you are on the brink of issuing, I am convinced that the responsibility for making these recommendations has been placed in capable hands. Your systems background obviously is serving you well in coping with the task at hand.

I would like to reiterate my offer of assistance from ITT. Throughout our company we have technical and operational expertise in communications which can be made available to you. You have my personal assurance that if it's requested, we will do our utmost to provide you with meaningful assistance.

Again, thank you for your time. It was most enjoyable to talk with you.

Sincerely,

mtgs
10/30
10:15

FORM WH-25

EXECUTIVE OFFICE BUILDING
WHITE HOUSE
Washington, D. C.

To: Security Officer, White House Police
Main Lobby, EOB

Please admit the following appointments on Oct. 30 1969 for (Mr.) (Mr~~s~~./) (Mi~~s~~) Clay T. Whitehead, Agency White House.

Name	Time	Name	Time

10:15 a.m. Garrity, Edward
Geneen, Harold S.
Ryan, John

Meeting Room: 110 Secretary: Eva Daughtrey

Telephone Ext. 2786

Date: 10/29/69

Other appointments may be called in during the day.

mtg
10/30
10:15

Wednesday 10/29/69

5:15 Per Mr. Whitehead's request, asked Marge to tell Mr. Flanigan that he is meeting with Harold Geneen tomorrow at 10:15 and see if he has any words of wisdom that he should consider in talking with Geneen.

Marge will leave a note on his desk; he has already gone to meet the President at the airport, and will fly to New York with him. ??

Monday 10/27/69

Meeting
10/30
10:15 a.m.

11:10 Have scheduled the meeting with Harold Geneen and John Ryan of IT&T for Thursday (10/30) at 10:15 a.m.

Might possibly bring Mr. Garrity with them but they will let us know. (Garrity is Director of Corporate Relations in New York)

Friday 10/24/69

4:45 John Ryan of IT&T said Harold Geneen, their President and Chairman, will be coming to Washington the week of October 27th and they wondered if you could see him on Thursday (10/30) 10, 10:15, or 10:30 -- or Friday (11/1) at 11 o'clock. They are trying to get his scheduled firmed up as soon as possible.

If Mr. Ryan is unavailable, he asked if we would leave a message with his secretary, Mrs. Matolsky. (296-6000 Ext. 213)