Policy

September 22, 1970

Dear Mr. Low:

We have followed with interest the development of NASA/FAA requirements for air traffic control utilizing satellite communication links. The Office of Telecommunications Policy shares your opinion that there is a great and largely undeveloped potential for satellite services for a broad class of users which, of course, includes civil and military aviation. In order to assure timely and useful development of satellite systems for these purposes, and to assure consistency with U.S. international policies and national security objectives, it is important to establish a definite statement of the Administration's policy in this area.

Since this is a responsibility of the new Office of Telecommunications Policy, we plan to begin immediately an Executive Office effort to formulate an Administration position concerning technical and institutional arrangements related to deployment of satellite communication and navigation systems. Although it is inappropriate for OTP to be part of the recently formed FAA/NASA group chaired by Mr. Bakke, we expect that group's conclusions will be an essential part of the broader effort by providing a definitive statement of FAA requirements and the rationale for proposed DOT and NASA programs.

I recognise the urgency of the ATC problem and its relation to fiscal planning and wish to assure you that our schedule will be compatible with OMB FY 72 budget reviews. Representatives of OST, DOS, NASC staff, and NSC will be involved in the Administration's policy review. George F. Mansur, who has been nominated to be Deputy Director of OTP, will be directing this activity. I would appreciate it if you could designate a NASA representative with whom Dr. Mansur can discuss NASA views.

We look forward to working with NASA in this activity and hope that our joint efforts will result in early deployment of a system(s) compatible with the needs of industry, FAA, and other Federal agencies.

Sincerely,

SIGNED

Clay T. Whitehead
Director

Honorable George M. Low
Acting Administrator
National Aeronautics and Space
Administration
Washington, D.C. 20546

cc: Clay T. Whitehead
Central Files
Col Olsson

GFMansur/tw

Policy

September 22, 1970

MEMORANDUM FOR

Honorable Edward E. David
Director
Office of Science and Technology

Utilization of telecommunications satellites for two-way communication and position determination has long been considered for a number of special applications. Several organizations, both commercial and government, are currently developing requirements for operational or experimental systems. Firm or tentative requirements have been expressed by DOD, AEC, the maritime industry, and ATA, ICAO, IATA, FAA/DOT, and ARINC as representatives of various segments of the air carrier industry. In addition NASA, in conjunction with the European Space Research Organization (ESRO), has prepared an extensive pre-operational system to explore the characteristics of a system for air traffic control.

Communication, and ultimately navigation for air traffic control is perhaps the most pressing problem and it is expected that substantial funding will be requested in the FY 72 budget by one or more agencies. There is now a DOT/NASA working group in progress whose purpose is to define comprehensive and compatible NASA and FAA programs for early implementation.

In order to assure timely and useful development of satellite systems for these purposes, and to assure consistency with U.S. international policies and national security objectives, I believe it is important that we know where we are headed in policy for this area. Since this is a responsibility of the new Office of Telecommunications Policy, we plan to begin immediately an Executive Office effort to formulate an Administration position concerning appropriate technical and institutional arrangements.

Accordingly, I would like to convene an Executive Office working group to review current and proposed plans, and to develop the Administration's policy for aeronautical satellite systems and other complementary uses. I would like to invite you to designate a representative to participate in this effort. Dr. George F. Mansur who has been nominated as Deputy Director of OTP will be directing this activity.

SIGNED

Clay T. Whitehead
Director

cc: Dr. Russell Drew

Mr. Whitehead
Central Files

GFMansur/tw
GFMansur Reading File

Identical memos forwarded to the following:

Honorable George Shultz, OMB (cc: Nick Stoer)
Honorable William Anders, NASC
Dr. Henry Kissinger, NSC (cc: Col. Robert Behr)

Letter to: Honorable Wm. P. Rogers, Dept of State (cc: Bertram Rein & Robert Packard)

Administrative Policy

[illegible], 19[illegible]

To: [illegible]

From: Tom Whitehead

Here's a [illegible] program in [illegible] minutes.

P.S. If you [illegible] I could [illegible] a program through the [illegible].

[illegible]

cc: Mr. Whitehead
Central Files

CTWhitehead:ed

Foreign Economic Policy

Reorganize STR responsibilities and relationships to other agencies with foreign economic policy responsibilities.

Science Policy

Review the need for classified research and redefine policies for classification of basic research (note that this does not apply to specific weapons systems capabilities, etc. (only to basic research); also review the need for classification of various technologies, e.g., uranium enrichment.

In other areas an expanded role for National Bureau of Standards (or possibly some other agency) to facilitate linkages between research and application in the economy; also to review foreign technologies where other nations may be ahead of the United States and make this information readily available to U.S. industry.

Clarify roles of HEW and NSF re postgraduate educational support.

AEC

Legislation in the order of Federal pre-emption of atomic radiation safety regulation to permit states to set more conservative safety standards if they wish.

Change responsibilities for procurement of nuclear weapons from AEC to DOD (this could include development responsibilities as well as procurement or procurement alone).

NASA

Authorize NASA to provide launches on a cost-reimbursed basis for any friendly foreign government or for any commercial enterprise so long as the purpose of the launch is peaceful and consistent with international agreements. (This would alleviate much of the tension and feelings of dependence on the whims of the U. S. as many allies hold against us.)

Require NASA to procure launch service packages from the private sector to the maximum extent feasible rather than getting the government more deeply into the launch service business.

Draft

Expand the conscientious objector criteria to permit conscientious objection to specific wars.

Regulatory Policies

1. Reorganization

2. Legislation to eliminate barriers to intermodal transportation services.

3. Grant CAB power to grant fare increases where the government levies user charges on airlines (such as for airport facilities or FAA air traffic controller service).

4. Give FPC explicit permission to grant rate increases where required to pay for mandatory or voluntary environmental protection measures.

Monday 6/15/70

4:45 Jon Rose called to ask if you would try to think in your own mind of ideas by tonight for possible legislative programs in areas of concern that Mr. Flanigan has been responsible for that you know about for '71 legislative season.

General areas where they will need legislation.

I asked if this pertains to areas of your concern only or Mr. Flanigan's whole area. He said <u>any</u> ideas for any area.

They need it tonight; can be by phone call.

March 10, 1970

Dear Mr. Holifield:

I understand that at a hearing, which you chaired, of the Subcommittee on Executive and Legislative Reorganization of the House Committee on Government Operations on March 9, 1970, concerning Reorganization Plan No. 1, questions arose about White House relationships with the Federal Communications Commission. Specifically, questions were raised about an article appearing in Broadcasting Magazine which attributed to me the view that "the White House has no qualms about seeking to influence the Commission or other so-called independent agencies." I would like to clarify both the record and our position in this matter.

First, I have made no statements to the press from which they could properly conclude that the White House intended any undesirable or improper influence on the FCC; that is not my view, and it is not the view of this Administration. Indeed, there have been strict instructions to the entire White House staff not to attempt to influence independent regulatory commissions in their quasi-judicial functions, or even give the appearance of attempting to do so; I attach a memorandum circulated to the staff in that regard.

Second, it is appropriate to draw a distinction between general policy issues which may be before regulatory commissions and particular cases in which those commissions are exercising their quasi-judicial responsibilities. In the latter category, any attempt to influence a commission would obviously be improper for the White House or any executive branch agency. In the former category, however, the President has both statutory and general leadership responsibilities which, from time to time, make necessary or desirable an expression of the Administration viewpoint to the regulatory commissions. Previous administrations, as well as this one, have done so in fulfilling those responsibilities.

It is our conviction that such open expressions of viewpoint are not "influence" in the negative connotation sometimes used, but rather a proper part of general policy-making dialogue among the FCC, the Congress, and the executive branch.

Finally, I would underscore the testimony of Administration witnesses before the Committee on March 9 which made clear this Administration's policy that the independence and authority of the Federal Communications Commission is in no way to be impaired by the Reorganization Plan No. 1 now before the Committee. No powers of the FCC are affected, and the authority of the Congress remains unchanged. It is, in fact, the Administration's hope that the new Office of Telecommunications Policy will enable the executive branch to act as a more responsible and responsive partner to the Congress and the FCC in the telecommunications policy area.

Sincerely,

Clay T. Whitehead
Special Assistant
to the President

Attachment

Honorable Chet Holifield
Committee on
Government Operations
House of Representatives
Washington, D. C.

cc: Mr. Flanigan
Mr. Whitehead
Central Files
Dean Burch
CTWhiteheadrad

THE WHITE HOUSE

WASHINGTON

May 21, 1969

MEMORANDUM FOR THE WHITE HOUSE STAFF

Subject: Contacts between the White House and the Independent Regulatory Agencies

The independent regulatory agencies include:

Civil Aeronautics Board
Federal Communications Commission
Federal Maritime Commission
Federal Power Commission
Federal Trade Commission
Interstate Commerce Commission
Securities and Exchange Commission

This memorandum discusses some important points you should bear in mind with regard to these agencies.

Contacts between the White House and the regulatory agencies are very sensitive on two grounds: (1) The Congress has a special relationship with these agencies, viewing them in part as instruments of the Congress in its constitutional power to regulate interstate and foreign commerce; (2) the Commissioners of these agencies have quasi-judicial responsibilities for individual cases coming before their agencies on rates, license renewals, route awards, and so forth. Obviously, any executive interference in this quasi-judicial function would be highly improper.

In spite of these sensitivities, matters often arise which do require official or informal contacts with the Commissioners or the staffs of these agencies. The following guidelines are provided for any exposure you may have to these agencies or problems pending before them. They also apply in those cases where other agencies of the executive branch act in a regulatory or quasi-judicial role.

1. Any expression of interest or any attempt to influence the outcome of any case pending is illegal. These cases are typically extremely complicated, and it is very dangerous to make judgments on the basis of limited information as to how the White House should like to see any case resolved. You should in no way express interest to these agencies in the outcome of pending cases and in no way attempt to influence the Commissioners or hearing examiners in their decisions on any case pending before their agencies.

2. It is important to remember that the cases that come before these agencies are often extremely important to the parties concerned and involve large amounts of money. They are, therefore, very closely watched for any evidence of improper procedure or influence. It is important to avoid even the mere appearance of interest or influence.

3. You may, of course, listen to comments and views on such cases when they are volunteered to you. However, such visits or the submission of written briefs should not be encouraged -- better still, they should be sidestepped and avoided wherever possible.

4. Inquiries about the status of cases pending before these agencies should not be made. Instead, the inquirer should be advised to contact the agency directly.

5. The policies and findings of these agencies often interact heavily with the policies of the executive branch of Government. Transportation policy, for instance, is affected heavily by the policies of the ICC and the CAB. There is, therefore, occasion for White House staff contact with these agencies. However, for the reasons cited above, you should keep my office informed of any contact you may have with these agencies. Please call Dan Hofgren or Tom Whitehead in advance to assure appropriateness of such contacts.

Peter M. Flanigan
Assistant to the President

Aero Sat System
Chron
Policy
NASA

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

OFFICE OF THE DIRECTOR

November 17, 1970

To: Tom Whitehead

From: George Mansur

We have also received a letter from Jim Beggs, DOT, on behalf of Secretary Volpe acknowledging receipt of our letters to Volpe. Beggs' letter designated Deputy Assistant Secretary Parker and FAA Associate Administrator Bakke to be the DOT point of contact with the working group and the letter also attached draft answers to our questions. His letter closes with the statement, "In the meantime, please do not hesitate to contact us for any further information you may require." I will acknowledge Beggs' letter.

November 18, 1970

Mr. George M. Low
Acting Administrator
National Aeronautics and Space
Administration
Washington, D.C. 20546

Dear Mr. Low:

Thank you for your letter of November 6, which transmitted the Memorandum of Understanding between the Department of Transportation and the National Aeronautics and Space Administration concerning aeronautical satellite programs. The Executive Office Working Group has had a very good response from both industry and Government agencies, and I would especially like to compliment NASA on its presentation.

As noted in my earlier letter to you, the Working Group expects to complete its preliminary work before the end of November and we shall keep you informed relative to the outcome. I am confident that our common objective is to provide the benefits of space technology to the aeronautical and maritime communities and that a mutually beneficial program will evolve from our collective efforts.

Sincerely,

Clay T. Whitehead

GFMansur/tw
Subj File
Reading File
CTWhitehead

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

OFFICE OF THE ADMINISTRATOR

NOV - 6 1970

Honorable Clay T. Whitehead
Director
Office of Telecommunications Policy
Executive Office of the President
Washington, D.C. 20504

Dear Dr. Whitehead:

A Memorandum of Understanding (MOU) executed between the Department of Transportation (DOT) and the National Aeronautics and Space Administration (NASA) on Satellite Systems for Aeronautical and Maritime Services is attached to this letter. The MOU, in my judgment, satisfies the early requirements for aviation communication improvements, demonstrates the L-band technology, establishes a preoperational system for communications and independent surveillance consistent with DOT/FAA requirements, and provides for international participation and cost sharing in a new space application. This MOU is our preferred way of meeting DOT and NASA objectives and the DOT/FAA requirements.

The most promising approach to the solution of projected aeronautical problems lies in the early application of satellite technology, initially using a VHF system to solve the communication problems and in parallel moving as rapidly as possible to L-band systems to solve the combined communication and surveillance requirements in the latter half of the 70's for both aeronautical and eventually for maritime use.

The rationale for this approach is as follows:

A. The airlines and DOT/FAA have had experimental satellite communications experience at VHF beginning in 1966 with NASA Applications Technology Satellites (ATS) -1 and -3. Satellite-compatible VHF avionics have been developed and are available to solve the most immediate communication problems.

B. Congestion in the VHF bands will ultimately lead to serious interference problems, whereas the aeronautical L-band region is relatively free of this difficulty. Because this is particularly true in Europe, there is strong opposition by European governments to any application of VHF in the Atlantic.

C. The aeronautical L-band has a much greater bandwidth than VHF. In addition to providing the necessary communications capability for the increased air traffic requirements of the late 70's

and early 80's, this larger bandwidth can also accommodate shipping traffic.

D. The accuracy required of independent surveillance compatible with future reduced lane and track separations anticipated for 1978-80 can be realized easily at L-band, but only with a network of calibration stations at VHF, yielding less reliability for substantial additional cost.

E. The urgent need for additional communications services consisting of three voice channels in the Pacific beginning in 1973 could be met using existing satellite designs and VHF technology. This need has been expressed by the airlines and the FAA and supported by DOT and NASA.

Inclusion of some L-band capability in the Pacific in the 1973 time-scale will provide an opportunity for: (1) developing experience and confidence in L-band communications and surveillance at the earliest possible time necessary for further refinement of the characteristics of the preoperational system (there is, however, adequate definition of requirements and technology to proceed with the preoperational satellite design now); and (2) developing some of the operating procedures in surveillance and traffic control for use with preoperational and operational systems.

F. In order to prepare for the anticipated operational requirement in the late 70's there is an urgent need to develop the necessary technology and to conduct systems experiments with L-band pre-operational satellites. These satellites, incorporating this developed technology, must be available by about 1975 to provide experience appropriate to 1978-80 operational systems decisions.

G. Early cooperative international participation in preoperational system experiments is desirable in order to:

(1) Establish a basis for the necessary international agreement in ICAO on characteristics of an operational system; and

(2) Achieve the benefit of cost sharing arrangements.

Use of the hybrid system in the Pacific shows an early commitment to L-band preoperational testing on the part of the United States. The cooperative international program will proceed concurrently with initiation of the hybrid system but toward a 1975 launch date, and will develop an L-band preoperational system consistent with DOT/FAA requirements.

The NASA support for a hybrid system in the Pacific is predicated on its integral relationship to the Atlantic preoperational systems experiment, since the hybrid mode is not otherwise required and would not be cost effective for the immediate communications requirement in the Pacific.

NASA, and, I am sure, DOT, will be pleased to work with you in formulating policy for satellite systems for aeronautical and future maritime services.

Sincerely yours,

George M. Low
Acting Administrator

Attachment

MEMORANDUM OF UNDERSTANDING

Between

DOT AND NASA

Satellite Systems for Aeronautical and Maritime Services

An integrated DOT/FAA/NASA Program to develop improved communications and surveillance services for aeronautical and maritime use in the oceanic regions is hereby established.

The objectives of this program are:

1. To improve air-ground communications in oceanic areas.
2. To reduce aircraft separation standards in oceanic areas.
3. To provide digital communications capability for a wide range of services.
4. To provide for a foreseen requirement for independent surveillance for air traffic control in areas of high traffic density.
5. To provide for the currently evolving requirement for maritime communication, navigation and ship location.
6. To recognize the need for international cooperation in aeronautical satellite systems and take advantage of international interest and cost-sharing possibilities.

The need for improved communications and control for aircraft in the Pacific Region is immediate. The need in the Atlantic is

anticipated to be critical by 1975. The timetable for the maritime requirement is currently being developed. The most promising approach to the solution of these problems lies in the early application of satellites in conjunction with appropriate ground and user equipment.

To satisfy the above objectives and associated need dates, an integrated program has been developed by DOT/FAA/NASA. This program consists of two parts: (1) providing "hybrid" (VHF and L-band) satellite capability* in the Pacific, and (2) L-band satellite capability in the Atlantic.

The "hybrid" capability will be established over the Pacific in 1973 to provide:

1. The early communications services required.
2. Additional data on the relative performance of VHF and L-band under comparable conditions.
3. Early opportunity for DOT/FAA to develop and implement some of the operating procedures in aircraft communications and control for use in preoperational and operational systems, and to perform surveillance experiments.
4. Early opportunity for DOT/FAA and the airlines, both U. S. and international, to develop the avionics and ground equipment

*This could be provided by two satellites having both VHF and UHF equipment on the same platform or by four separate satellites, each carrying one of the two frequency band equipments.

required for use with L-band systems.

5. Experience and data for final design refinements to the preoperational system required by DOT/FAA.

In order to assure an adequate evaluation of such a system, it will be necessary, prior to the initiation of the program, to reach an agreement with the airlines regarding the extent of their participation and the number of aircraft which will be equipped with VHF and UHF capability.

The planned "hybrid" capabilities are:

	VHF	L-band
Channel Capacity	3 voice	1 voice, 1 surveillance
Effective Radiated Power	24 dbw/voice channel	38 dbw/voice channel
Coverage	Earth-disk, 1 db contour	8° circular, 3 db contour
Aircraft Antenna Gain	0 db	3 db
Link Reliability	99% nominal	
Signal Quality	44 db-Hz worst case minimum	
Life in Orbit	5 years	
Launch Vehicle	Thor Delta	

The hybrid satellite services will be funded by DOT/FAA with advice and assistance from NASA. NASA will be a cooperative experimenter with the hybrid. Maximum use will be made of ATS-5 and -F to support the testing where appropriate.

The L-band capability will provide over the Atlantic in about 1975 to:

1. Demonstrate effective L-band systems operation consistent with DOT/FAA needs.
2. Provide the additional communications capacity needed for the Atlantic region.
3. Provide additional systems experiments which are required prior to commitment to operational use of advanced technology.
4. Gain more extensive preoperational experience.

Advanced satellite technology will be used to meet the system objectives in a cooperative international program which will be developed by NASA and ESRO on behalf of the United States and Europe, respectively. For the United States, DOT/FAA will develop and provide avionics and air traffic control center equipment as part of its role in the program. DOT/FAA and European aviation authorities will participate in the program as cooperative experimenters.

The NASA/ESRO program will proceed concurrently with the initiation of the hybrid system, however directed toward a 1975 launch date, and will develop an L-band preoperational system consistent with DOT/FAA requirements noted below. This system will provide a significant increase in satellite capability over that intended for the earlier Pacific use. Two satellites are planned.

The capabilities of the L-band satellite will be maximized consistent with a Thor Delta launch vehicle and an early launch date.

The minimum target L-band satellite characteristics to be met in the NASA/ESRO program are:

Channel Capacity	4 voice channels plus surveillance
Coverage	Earth capability; coverage adaptable to traffic density needs
Aircraft Antenna Gain	3.5 db
Link Reliability	99% nominal
Signal Quality	45 db-Hz worst case minimum
Life in Orbit	5 years
Launch Vehicle	Thor Delta
Eclipse Capability	Surveillance only
Maximum Aircraft RF Power	500 watts maximum

In order for the operational system to provide the most economical service, it is highly desirable to increase the performance capabilities of the L-band satellites beyond the minimum target specifications listed, but remaining compatible with a Thor Delta launch vehicle and an early launch date. It appears that considerable performance improvement over the above minimum specifications can be accomplished by the application of high gain multiple-beam antenna technology, unfurlable solar arrays, and increased efficiency L-band transponders.

The system definition studies in the NASA/ESRO program will be directed to use the above technologies in maximizing the capabilities of the space segment unless design tradeoffs show them to be so technically or economically disadvantageous as to be unacceptable.

The preliminary cost-benefit analysis will be updated as traffic

projections are revised and as knowledge of user equipment cost is refined by L-band equipment development. This analysis will also be broadened to include potential additional benefits possible with extension of satellite services to shipping. This activity will be conducted by DOT/FAA with advice and assistance from NASA.

For the United States, the final specifications will be a joint DOT/FAA/NASA responsibility. NASA will proceed immediately to obtain agreement with ESRO on the above.

AGREEMENT

DOT/FAA and NASA agree that the integrated national program outlined herein is the preferred way to meet the objectives and requirements stated and is in the best interests of the United States. DOT/FAA and NASA agree to support this integrated plan according to detailed procedures which will be established consistent with the policies of both agencies. This plan is to be communicated to and coordinated with all appropriate national and international organizations in accordance with established U. S. policies and procedures.

JAMES M. BEGGS
UNDER SECRETARY,
DEPARTMENT OF TRANSPORTATION

JOHN H. SHAFFER,
ADMINISTRATOR, FEDERAL
AVIATION ADMINISTRATION

10-20-70

GEORGE LOW
ACTING ADMINISTRATOR, NATIONAL
AERONAUTICS AND SPACE ADMINISTRATION