

Charles M. Herzfeld  
534 Cherry Tree Terrace  
Smoke Rise  
Kinnelon, New Jersey 07405

March 6, 1972

Dear Tom:

Just a short note. First of all, I am including a resume of a very good fellow whom you might find helpful. I have worked with him quite a bit and he is very bright.

We discussed my memo about possible futures for ERMAC at the last meeting, and as you can imagine the broad approach which I favor raised a big loud thud. No interest at all with a very few exceptions which I am sure you can guess. We should discuss this sometime.

With best regards,

*Charley*

Mr. C. T. Whitehead  
Office of Telecommunications Policy  
Executive Office of the President  
Washington, D.C. 20504

Routing Slip  
Office of Telecommunications Policy

Date: JAN 27 1972

From: \_\_\_\_\_

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Remarks:

For your meeting with Herzfeld tomorrow.

# ITT

## DEFENSE - SPACE GROUP

500 Washington Avenue  
Nutley, New Jersey 07110  
Telephone 201 284-2324  
CHARLES M. HERZFELD  
Technical Director

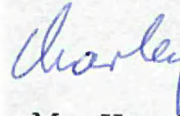
January 24, 1972

Mr. C. T. Whitehead  
Office of Telecommunications Policy  
Executive Office of the President  
Washington, D. C. 20504

Dear Tom:

Here is a quick note about ERMAC. All this needs is a lot of discussion, and testing, to make sure we are all on the same wavelength with you. See you soon.

Best regards,



C. M. Herzfeld

Attachment



January 24, 1972

MEMORANDUM TO: MR. W. DEAN, JR.  
OFFICE OF TELECOMMUNICATIONS POLICY

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Dear Wil:

Here are some of my thoughts on the possible future of ERMAC.

1. The full title of ERMAC clearly suggests a broad mission in support of most of the problems of OTP, and I suggest strongly that ERMAC be asked to fulfill this broad mission. My experience from the Defense Science Board has indicated to me very clearly that properly constituted committees such as ERMAC, when properly used, can be very helpful in sorting out problems where policy issues and several technologies intersect, and where part of the problem is the definition of the problem itself. I should think that a properly expanded ERMAC would be able to be helpful in a similar way.
2. According to my understanding Tom Whitehead is now Chairman of ERMAC. I think this is a fine arrangement, particularly if the mission is to be broadened as indicated above. However, in that case it would be essential for Tom to participate significantly more in the work of the Council. Again, Defense Science Board experience suggests that perhaps a quarter of the time when the complete Council meets should be spent with its real customer, in this case, its Chairman.
3. Assuming ERMAC would be given a broad role, I would judge that the major problems it should work on would be the following:
  - a) What is a balanced evolution of the national communications systems, allowing for proper regulation, proper incentive, adequate independence, adequate growth? What is the balance between private, semi-public and public organizations in this area?
  - b) What is the impact of communications and other electronics systems
    - on people
    - on the environment?

3. c) Are present and proposed government and private programs adequate, appropriately conceived, well run, etc?
4. If this broad mission of helping OTP with the above issues is to be carried out successfully, ERMAC would have to be broadened considerably, particularly in the communications systems and technology areas, such as land, satellite, and underwater systems. This broadening should be done by the Director of OTP and his staff (maybe with the informal advice of present members).
5. Note that so far ERMAC has only worked on a small amount of 3. b) and that the present membership is geared to this.
6. If a transition to the broad problem areas is desired by the Director of OTP then the transition might go like this:
  - a) Consider the present ERMAC as a first step and add people to the present list so that eventually two panels can be put together from the total membership; one Panel dealing with Communication Systems Policy, and one with the Impact of EM radiation. (Perhaps still other panels could be formed later.) Each panel would then examine the chief problems in its areas in detail, reach conclusions and recommendations, and the whole Council would look afterwards at the conclusions and recommendations of each panel.
  - b) This broadening process is likely to take some time, perhaps six months, speaking realistically.
  - c) The present ERMAC has a membership rather like the eventual Impact Panel will have. Therefore, in the meantime, ERMAC could address several impact issues such as:
    - Effect of laser radiation on people
    - Effect of Sanguine on people and environment
    - Effect of high power radars on sensitive electronic systems.

January 24, 1972

7. Special working groups could be established to deal with some of the various issues in greater detail. They should have several ERMAC members and should if possible be chaired by an ERMAC member.

These are some of my current thoughts, rather hurriedly put down. I am looking forward to a discussion of them.

With best regards,



C. M. Herzfeld

cc: Miss Janet Healer, OTP  
Dr. S. Koslov, Rand Corp.  
Mr. C. T. Whitehead, OTP *This copy for*



INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION  
DEFENSE SPACE GROUP  
500 WASHINGTON AVENUE  
NUTLEY, NEW JERSEY 07110

C. M. Herzfeld

NAME

DEPT.



ITT  
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760 VIA AIR MAIL

Mr. C. T. Whitehead  
Office of Telecommunications Policy  
Executive Office of the President  
Washington, D. C. 20504

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*Ermaac*

OFFICE OF TELECOMMUNICATIONS POLICY  
EXECUTIVE OFFICE OF THE PRESIDENT  
WASHINGTON, D.C. 20504  
January 26, 1972

DIRECTOR

Honorable George P. Shultz  
Director  
Office of Management and Budget  
Washington, D.C. 20503

Dear Mr. Shultz:

Recently there has been some evidence and extensive concern about possible biological hazards from electromagnetic radiations.

The enclosed "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from cognizant Government agencies. The Council advises on measures to control side effects of electromagnetic radiations.

The Council submits that we do not know with confidence the potential impact of nonionizing electromagnetic radiations upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

I concur in the Council's recommendations and believe that, in view of the increasing attention of the press, the public, and the Congress, implementation should proceed as soon as practicable. I am asking the cognizant Government agencies for their views on the extent to which their FY 72/73 resources might be reprogrammed and if the FY 74 budget planning in this document can be accommodated. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your assistance in implementing this recommended program. We look forward to discussing this matter with you further in the near future. Any additional information you may desire can be obtained by contacting Mr. W. Dean, Jr., Assistant Director for Frequency Management, on 395-5623.

Sincerely,

*G. T. Whitehead for*

Clay T. Whitehead

Enclosure



OFFICE OF TELECOMMUNICATIONS POLICY  
EXECUTIVE OFFICE OF THE PRESIDENT  
WASHINGTON, D.C. 20504  
January 26, 1972

DIRECTOR

Honorable Edward E. David  
Director  
Office of Science and Technology  
Washington, D.C. 20506

Dear Dr. David:

Recently there has been some evidence and extensive concern about possible biological hazards from electromagnetic radiations.

The enclosed "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from cognizant Government agencies. The Council advises on measures to control side effects of electromagnetic radiations. I believe Dr. Russell Drew and Mr. Will Dean, Jr., of this Office, have been in contact on this matter.

The Council submits that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiations upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

I concur in the Council's recommendations and believe that, in view of the increasing attention of the press, the public, and the Congress, implementation should proceed as soon as practicable. I am asking the cognizant Government agencies for their views on the extent to which their FY 72/73 resources might be reprogrammed and if the FY 74 budget planning in this document can be accommodated. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your assistance in implementing this recommended program. We look forward to discussing this matter with you further in the near future. Any additional information you may desire can be obtained by contacting Mr. W. Dean, Jr., Assistant Director for Frequency Management, on 395-5623.

Sincerely,

*George F. Manaster for*  
Clay T. Whitehead

Enclosure

OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable Russell E. Train  
Chairman  
Council on Environmental Quality  
Executive Office of the President  
722 Jackson Place  
Washington, D.C. 20006

Dear Mr. Chairman:

Recently there has been some evidence and extensive concern about possible biological hazards from electromagnetic radiations.

The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiations," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from cognizant Government agencies. The Council advises on measures to control side effects of electromagnetic radiations.

The Council submits that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiations upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

I concur in the Council's recommendations and believe that, in view of the increasing attention of the press, the public, and the Congress, implementation should proceed as soon as practicable. I am asking the cognizant Government agencies for their views on the extent to which their FY 72/73 resources might be reprogrammed and if the FY 74 budget planning in this document can be accommodated. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your assistance in implementing this recommended program. We look forward to discussing this matter with you further in the near future. Any additional information you may desire can be obtained by contacting Mr. W. Dean, Jr., Assistant Director for Frequency Management, on 395-5623.

Sincerely,

*G. F. Manner for*

Clay T. Whitehead

Enclosure



OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable Dean Burch  
Chairman  
Federal Communications Commission  
Washington, D. C. 20554

Dear Mr. Chairman:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the Federal Communications Commission (FCC). The Council advises on the measures to control harmful effects of radiation. FCC observers to the ERMAC in the development of this program were Mr. Raymond E. Spence, Mr. Wilmar Roberts, Mr. Herman Garlan, and Mr. Robert Cutts.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your views concerning the extent to which FY 72/73 resources of your Agency could be reprogrammed so as to be responsive to this pressing need. I would also like to be advised if FY 74 budget planning in this document can be accommodated.

Your assistance in this matter would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure



OFFICE OF TELECOMMUNICATIONS POLICY  
EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable Frank J. Shakespeare, Jr.  
Director  
U. S. Information Agency  
Washington, D. C. 20547

Dear Mr. Shakespeare:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the U. S. Information Agency (USIA). The Council advises on the measures to control harmful effects of radiation. USIA observers to the ERMAC in the development of this program were Mr. Sidney Kessler and Mr. Julius Ross.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your views concerning the extent to which FY 72/73 resources of your Agency could be reprogrammed so as to be responsive to this pressing need. I would also like to be advised if FY 74 budget planning in this document can be accommodated.

Your assistance in this matter would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure

OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable Earl L. Butz  
Secretary of Agriculture  
Washington, D. C. 20250

Dear Mr. Secretary:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the Department of Agriculture (DOA). The Council advises on the measures to control harmful effects of radiation. DOA observers to the ERMAC in the development of this program were Dr. E. C. Sharman, Mr. William B. Morton, and Mr. Landy B. Altman.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your views concerning the extent to which FY 72/73 resources of your Department could be reprogrammed so as to be responsive to this pressing need. I would also like to be advised if FY 74 budget planning in this document can be accommodated.

Your assistance in this matter would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure



OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable Richard Helms  
Director of Central Intelligence  
Washington, D. C. 20505

Dear Mr. Helms:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the Central Intelligence Agency (CIA). The Council advises on the measures to control harmful effects of radiation. CIA observer to the ERMAC in the development of this program was Dr. Myles Maxfield.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your views concerning the extent to which FY 72/73 resources of your Agency could be reprogrammed so as to be responsive to this pressing need. I would also like to be advised if FY 74 budget planning in this document can be accommodated.

Your assistance in this matter would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure



OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable James C. Fletcher  
Administrator  
National Aeronautics and Space Administration  
Washington, D.C. 20546

Dear Dr. Fletcher:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the National Aeronautics and Space Administration (NASA). The Council advises on the measures to control harmful effects of radiation. NASA observer to the ERMAC in the development of this program was Mr. Paul Price.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your views concerning the extent to which FY 72/73 resources of your Agency could be reprogrammed so as to be responsive to this pressing need. I would also like to be advised if FY 74 budget planning in this document can be accommodated.

Your assistance in this matter would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure

OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable William D. McElroy  
Director  
National Science Foundation  
Washington, D. C. 20550

Dear Mr. McElroy:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the National Science Foundation (NSF). The Council advises on the measures to control harmful effects of radiation. NSF observer to the ERMAC in the development of this program was Mr. Gilbert Devey.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your views concerning the extent to which FY 72/73 resources of your Agency could be reprogrammed so as to be responsive to this pressing need. I would also like to be advised if FY 74 budget planning in this document can be accommodated.

Your assistance in this matter would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure

OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable Maurice H. Stans  
Secretary of Commerce  
Washington, D. C. 20230

Dear Mr. Secretary:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the Department of Commerce (DOC). The Council advises on the measures to control harmful effects of radiation. DOC observers to the ERMAC in the development of this program were Mr. James Ogle, Dr. Ray E. Larson, and Mr. Ronald Bauman.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your views concerning the extent to which FY 72/73 resources of your Department could be reprogrammed so as to be responsive to this pressing need. I would also like to be advised if FY 74 budget planning in this document can be accommodated.

Your assistance in this matter would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure



OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable John A. Volpe  
Secretary of Transportation  
Washington, D. C. 20590

Dear Mr. Secretary:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the Federal Aviation Administration (FAA). The Council advises on the measures to control harmful effects of radiation. FAA observer to the ERMAC in the development of this program was Mr. Isadore D. Goldman.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during implementation.

I would appreciate your views concerning the extent to which FY 72/73 resources of your Department could be reprogrammed so as to be responsive to this pressing need. I would also like to be advised if FY 74 budget planning in this document can be accommodated.

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Sincerely,



Clay T. Whitehead

Enclosure

cc: Administrator, FAA

OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable Melvin R. Laird  
Secretary of Defense  
Washington, D. C. 20301

Dear Mr. Secretary:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the Department of Defense (DOD). The Council advises on the measures to control harmful effects of radiation. DOD observers to the ERMAC in the development of this program were Col. William S. Augerson, DDR&E; Dr. Francis W. Morthland, USA; Cdr. Paul E. Tyler, USN; and Major William E. Mabson, USAF.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during implementation.

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Your assistance in this matter would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure



OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable William D. Ruckelshaus  
Administrator  
Environmental Protection Agency  
Washington, D. C. 20460

Dear Mr. Ruckelshaus:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the Environmental Protection Agency (EPA). The Council advises on the measures to control harmful effects of radiation. EPA observers to the ERMAC in the development of this program were Dr. Paul C. Tompkins, Dr. William A. Mills, Mr. David S. Smith, and Mr. David E. Jones.

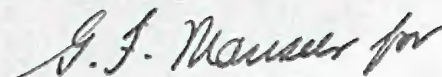
The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during the implementation.

I would appreciate your views concerning the extent to which FY 72/73 resources of your Agency could be reprogrammed so as to be responsive to this pressing need. I would also like to be advised if FY 74 budget planning in this document can be accommodated.

Your assistance in this matter would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure



OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable Elliot L. Richardson  
Secretary of Health, Education,  
and Welfare  
Washington, D. C. 20201

Dear Mr. Secretary:

Recently there has been extensive concern about biological hazards from electromagnetic radiation. The enclosed, "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is the result of effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from the cognizant Government agencies including the Department of Health, Education, and Welfare (HEW). The Council advises on the measures to control harmful effects of radiation. HEW observers to the ERMAC in the development of this program were Dr. Robert L. Elder, Dr. Andrew C. Wheeler, and Mr. John Villforth.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiation upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. It is planned that this Office would serve as the coordinating agency during implementation.

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Sincerely,



Clay T. Whitehead

Enclosure

OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable James Schlesinger  
Chairman  
Atomic Energy Commission  
Washington, D.C. 20545

Dear Mr. Chairman:

Recently there has been extensive concern about biological hazards from electromagnetic radiations.

The enclosed "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is forwarded for your information. It is the result of an assessment of current knowledge, existing programs, and potential problems and effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from cognizant Government agencies. The Council advises on measures to control side effects of electromagnetic radiations. The Atomic Energy Commission observer to the ERMAC in the development of this program has been Martin B. Biles.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiations upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. I am asking the agencies with specific responsibilities to advise me on implementation. It is planned that this Office would serve as the coordinating agency during implementation.

Your interest and support, consistent with the responsibilities and related concerns of your Agency, would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure



OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable Donald E. Johnson  
Administrator of Veterans Affairs  
Veterans Administration  
Washington, D.C. 20420

Dear Mr. Johnson:

Recently there has been extensive concern about biological hazards from electromagnetic radiations.

The enclosed "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is forwarded for your information. It is the result of an assessment of current knowledge, existing programs, and potential problems and effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from cognizant Government agencies. The Council advises on measures to control side effects of electromagnetic radiations.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiations upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. I am asking the agencies with specific responsibilities to advise me on implementation. It is planned that this Office would serve as the coordinating agency during implementation.

Your interest and support, consistent with the responsibilities and related concerns of your Agency, would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure

OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Dr. Marcus Key  
Director  
National Institute of Occupational  
Safety and Health  
National Institute of Health  
9000 Rockville Pike  
Bethesda, Maryland 20010

Dear Dr. Key:

Recently there has been extensive concern about biological hazards from electromagnetic radiations.

The enclosed "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is forwarded for your information. It is the result of an assessment of current knowledge, existing programs, and potential problems and effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from cognizant Government agencies. The Council advises on measures to control side effects of electromagnetic radiations. It is my understanding that an ERMAC member, Dr. William T. Ham, Jr. of Virginia Commonwealth University, has had some discussion of this program with you.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiations upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. I am asking the agencies with specific responsibilities to advise me on implementation. It is planned that this Office would serve as the coordinating agency during implementation.

Your interest and support, consistent with the responsibilities and related concerns of your Agency, would be appreciated.

Sincerely,

*G. F. Mansueti for*

Clay T. Whitehead

Enclosure



OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable Rogers C. B. Morton  
Secretary of the Interior  
Washington, D.C. 20240

Dear Mr. Secretary:

Recently there has been extensive concern about biological hazards from electromagnetic radiations.

The enclosed "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is forwarded for your information. It is the result of an assessment of current knowledge, existing programs, and potential problems and effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from cognizant Government agencies. The Council advises on measures to control side effects of electromagnetic radiations.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiations upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. I am asking the agencies with specific responsibilities to advise me on implementation. It is planned that this Office would serve as the coordinating agency during implementation.

Your interest and support, consistent with the responsibilities and related concerns of your Department, would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure

OFFICE OF TELECOMMUNICATIONS POLICY

EXECUTIVE OFFICE OF THE PRESIDENT

WASHINGTON, D.C. 20504

January 26, 1972

DIRECTOR

Honorable James D. Hodgson  
Secretary of Labor  
Washington, D.C. 20210

Dear Mr. Secretary:

Recently there has been extensive concern about biological hazards from electromagnetic radiations.

The enclosed "Program for Control of Electromagnetic Pollution of the Environment: The Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," is forwarded for your information. It is the result of an assessment of current knowledge, existing programs, and potential problems and effort over the past two years on the part of my Electromagnetic Radiation Management Advisory Council (ERMAC), working in coordination with observers from cognizant Government agencies. The Council advises on measures to control side effects of electromagnetic radiations.

The Council believes that we do not know with sufficient confidence the potential impact of nonionizing electromagnetic radiations upon human beings, and proposes a coordinated five-year program requiring expenditures of some \$63 million allocated among the cognizant agencies of the Government.

In view of the increasing attention of the press, the public, and the Congress, I believe implementation should proceed as soon as practicable. I am asking the agencies with specific responsibilities to advise me on implementation. It is planned that this Office would serve as the coordinating agency during implementation.

Your interest and support, consistent with the responsibilities and related concerns of your Department, would be appreciated.

Sincerely,



Clay T. Whitehead

Enclosure



NOV 12 1970

Dr. Charles M. Herzfeld  
Technical Director  
Defense Space Group  
International Telephone,  
Telegraph Corp.  
500 Washington Avenue  
Nutley, New Jersey 07110

Dear Mr. Herzfeld:

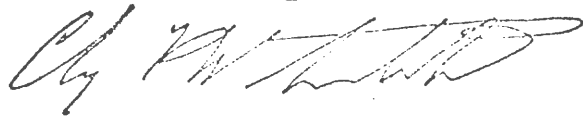
I was concerned when I received your letter of October 15, 1970, advising of your desire to resign from ERMAC. Your work in formulating recommended policies and in furthering the proposed program of research the Council is about to endorse is an invaluable contribution in an area receiving increasing attention at the National level.

I understand, however, that Mr. Siling has discussed this matter with you and as a result you have agreed to postpone this decision for the time being. This action on your part is deeply appreciated.

I regret that you will not be able to attend the December 11, 1970 meeting of ERMAC but a copy of the revised ERMAC program will be sent to you for comment as soon as it is available.

Again, I thank you for your cooperation.

Sincerely,



Clay T. Whitehead

cc: Dr. Koslov

PFSiling/dtb  
OTP/FMD/Reading  
Subject File

10 Nov 70

DEFENSE - SPACE GROUP

500 Washington Avenue  
Nutley, New Jersey 07110  
Telephone 201 284-2324  
CHARLES M. HERZFELD  
Technical Director

October 15, 1970

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

Dear Dr. Whitehead:

It is with great regret that I must resign from ERMAC. My unavoidable commitments have increased to such an extent that I do not feel that I can do adequate justice to the important assignment as a member of ERMAC, and therefore I believe that the right thing for me to do is to ask you to accept my resignation.

I have found my association with your office most interesting and constructive and hope that you will call on me at a later date and in lesser ways if you think I can help.

With best regards,

*Charles Herzfeld*

C. M. Herzfeld

cc: Dr. Samuel Koslov



**DRAFT 12/3/70**

**This notice establishes the Electromagnetic Radiation Effects Management Advisory Council (EREMAC) as an advisory body to the Director of Telecommunications Policy and sets forth the responsibilities of the Council pursuant to Executive Order 11556 of September 4, 1970.**

**The membership of the Council shall consist of experienced and knowledgeable individuals from the scientific, medical, and health professions who can bring to bear the expertise required to carry out the above responsibilities. The Chairman and members shall be appointed by the Director for a period of three years, with terms of memberships staggered to provide continuity.**

**The Council shall be responsible for the following:**

**To develop a research program designed to identify, investigate, and evaluate existing and potential types and sources of radiation hazard which may result from present or anticipated radiation in all parts of the electromagnetic spectrum.**

**To identify, document, and bring to the attention of the Director such general and specific instances of radiation hazard which it believes to possess actual or potential biological danger or harm, or on which the Director requests advice.**

To identify, initiate, and conduct both near-term and longer-range studies as required to fulfill the above responsibilities.

To provide timely advice on any questions or issues regarding electromagnetic radiation effects as the Director may request.

The Council may establish working groups and/or subcommittees to aid in the execution of its responsibilities. Such working groups and subcommittees may draw on the experience of additional experts to supplement the capabilities of the members and to conduct such detailed investigation and analysis as the Council may direct.



*AP Evans*

DRAFT  
MMcCradden:jm  
12/1/70

This notice reconstitutes the Electromagnetic Radiation Management Advisory Council (ERMAC) as an advisory body to the Director of the Office of Telecommunications Policy and sets forth the responsibilities of the Council.

This notice is issued pursuant to Executive Order 11556 of September 4, 1970, and in accordance with Executive Order 11007 of February 22, 1962. OEP Order 1200.7 of December 11, 1968, is hereby cancelled.

The Council shall be responsible for the following:

To develop a research program designed to identify, investigate, and evaluate the existing and potential types and sources of radiation hazard which may result from present or anticipated communications systems in all parts of the electromagnetic spectrum.

To identify, document, and bring to the attention of the Director such general and specific instances of radiation hazard which it believes to possess actual or potential biological danger or harm.

To initiate both near-term and longer-range studies as required to fulfill the above responsibilities,

while at the same time providing timely advice on all current issues as the Director may require.

The membership of the Council shall consist of experienced and knowledgeable individuals from the scientific, medical, and health professions who can bring to bear the expertise required to carry out the above responsibilities. Members shall be appointed by the Director for a period of three years, with terms of memberships staggered to provide continuity. The Director of Telecommunications Policy shall serve as the Chairman of the Council, and the Council may establish working groups and/or subcommittees to aid in the execution of its responsibilities. Such working groups and subcommittees may draw on the experience of additional experts to supplement the capabilities of the members, and to conduct such detailed investigation and analysis as the Council may direct.

OFFICE OF TELECOMMUNICATIONS POLICY

**ROUTE SLIP**

TO Mr. Whitehead

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\_\_\_\_\_

\_\_\_\_\_

ACTION	<input type="checkbox"/>
Concurrence	<input type="checkbox"/>
Signature	<input type="checkbox"/>
Comments	<input type="checkbox"/>
For reply	<input type="checkbox"/>
Information	<input checked="" type="checkbox"/>
Per conversation	<input type="checkbox"/>
Discuss with me	<input type="checkbox"/>

FROM WES

DATE 10-23-70

**REMARKS**

*Hopefully, ERNAC will prevent a similar charge against the use of communications-Electronics.*



# Infant Death Rate Rise Noted Near Nuclear Power Plant

HARRISBURG, Pa. (AP)—A radiology professor has testified that the infant mortality rate has increased in an area surrounding a nuclear power reactor near Morris, Ill.

Dr. Ernest J. Sternglass, professor of radiation physics at the University of Pittsburgh School of Medicine, spoke yesterday before a Pennsylvania Senate Committee studying nuclear power plants.

The professor said he was presenting results of a study he and a group of students made on the child mortality rate near the

plant. The Dresden operation has been generating electricity since 1959 and is located 50 miles southwest of Chicago.

"Just prior to the start-up of the Dresden Reactor, the states of Illinois and New York had closely similar infant mortality rates of 24.9 and 24.5 per 1,000 live births respectively," Sternglass testified.

"However, in 1964, a year after the rapid rise in emission from Dresden, the mortality rate for Illinois began a sharp climb while that in New York began to decline, giving rise to a period

when the Illinois infant death rates exceeded those for New York by 2.7 per 1,000 births in 1968, with an absolute peak of 25.6 per 1,000 births in 1965."

Leroy Stratton, director of the Radiological Health Bureau of the Illinois Public Health Department, said later in Springfield, Ill., that even if the infant mortality rate had increased, "there are many things besides radiation that could or may have contributed."

A Commonwealth Edison Co. official also challenged the report. Byron Lee Jr., assistant to

the firm's president, said he is confident radiation emissions from the plant poses no threat to public health.

Lee cited a recent report on a U.S. Bureau of Radiological Health study which he said found "external exposure from radioactive gases . . . was only a small fraction of the natural 'background' radiation and was well within the Federal Radiation Council's guidelines."

Sternglass said the increases appear to have occurred from the radioactive gases released

in the normal operation of the Dresden reactor.

The professor said the Dresden plant uses a boiling water reactor, which is not in use at all nuclear power plants. He said a pressurized water reactor used in a nuclear plant at Shippingport, Pa., for example, is not nearly as dangerous as the Dresden operation.

Sternglass said two-thirds of Illinois' population, about 6.6 million people, lives within 50 miles of the reactor. The infant mortality rates increased and decreased according to the rise

and decline of the gaseous activity released into the air from the plant, he said.

A similar correlation, he said, existed for death rates for all age groups.

Sternglass suggested the operation of the Dresden reactor be discontinued while devices were installed to trap the radioactive gases now released into the air.

Similar reactors should shut down for the same reason, while construction of large nuclear power reactors should be delayed pending full studies of their effects, Sternglass said.

10-22-70 NEWS

## Infant deaths due to nuclear plant

HARRISBURG, Pa. (UPI) — Radioactive cases from certain nuclear reactors appear to increase infant mortality, a University of Pittsburgh radiology professor said yesterday.

Professor Ernest Sternglass, a long-time advocate of tighter controls on nuclear plants, said the evidence was so clear "it would be necessary to discontinue operation" of a reactor at Morris, Ill.

Other boiling water reactors using a single coolant loop are located at Humboldt, Calif., Charlevoix, Mich., and Buffalo, N.Y.

Dr. Sternglass testified before a state senate committee studying proposed legislation on location of nuclear facilities.

The professor read a scientific paper on "infant mortality and nuclear power generation" which he had submitted to the Bulletin of Atomic Scientists.

It cited a study of infant deaths in Grundy County, Ill., where the Morris plant, called Dresden No. 1, is located and in surrounding counties, comparing the rates with national averages and other "control" areas.

"In 1958, just before the start of the Dresden reactor, the states of Illinois and New York had closely similar infant mortality rates of 24.9 and 24.5 live births," Dr. Sternglass said.

"However, in 1964, a year after the rapid rise in emission from Dresden, the mortality rate for Illinois began a sharp climb while that in New York began to decline," he said.

Dr. Sternglass cited figures showing that mortality rates climbed in Grundy County and Livingston County downwind to the south, while counties upwind showed declining mortality rates.

He said the odds against this being coincidence were better than 200 to 1.



Monday 10/5/70

MEETINGS

10/7/70

3:00 p. m.

10/21/70

9:30 a. m.

3:00 Will Dean asked us to schedule a meeting with Dr. Koslov, Janet Healer, Mr. Siling, re Electromagnetic Radiation Management Advisory Council -- we have scheduled it for 3 p. m. on Wednesday (10/7).

We have scheduled a meeting of the ERMAC for 9:30 a. m. on Wednesday (10/21).

cc: Dr. Mansur



10/1/70

Steve Doyle

1. Same Koslow (RAND) is prime mover on ERMAC (side effects). If at all possible he would like to see Tom next Wednesday (10/7/70) or Thursday (10/8/70). Siling & self should also be present.
2. Related manner. Hope Tom or George can chair ERMAC meeting on 10/21/70, at least at outset.
3. Appropriate an assist.

Will Dean.

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

OEP ORDER 1200.7

TO: Executive Staff, Staff and Regional Directors

SUBJECT: Electromagnetic Radiation Management Advisory  
Council (ERMAC)

1. Purpose. This Order establishes and describes the functions of the Electromagnetic Radiation Management Advisory Council.
2. Membership. The membership will be composed of approximately ten members chosen from the industrial, academic, and professional communities, whose primary disciplines will include: medicine, biological sciences, electronics, radiological safety, information handling, electrical engineering, spectrum management, and such others as may be deemed necessary. Members will be appointed by the Director of Telecommunications Management.
3. Functions. The Council will review, advise, and make recommendations to the Director of Telecommunications Management on both Government and non-Government activities bearing on the adequacy of control of electromagnetic applications which may involve directly or indirectly the production of harmful radiant energy in any position in the spectrum. (The spectrum is presumed to consist of the electromagnetic spectrum range from electrostatic and constant magnetic fields through the radio frequency spectrum to the optical spectrum, including the use of coherent optical radiation (lasers), and x-rays produced by electrical or electromagnetic devices). In addition, the Council may at its discretion concern itself with those non-electromagnetic radiation phenomena, such as infra-sonic and ultra-sonic radiation, which may derive from the use of electronic equipments or be under the purview of those agencies of the Government as may be concerned with the electromagnetic spectrum. The activities of the Council are divided into two major areas involving safety and/or harmful effects--biological effects and effects on equipment and material.
4. Organization.
  - a. The Council will be chaired by the Director of Telecommunications Management. He will designate an Executive Secretary who will act as staff advisor to the Council.

OEP ORDER 1200.7  
December 11, 1968

b. All meetings will be held at the call, or with the advance approval of the DTM or his representative, and with an agenda formulated or approved by such official. All meetings shall be conducted in the presence of the DTM or other full time salaried Government official, who shall adjourn any meeting whenever he considers adjournment to be in the public interest. Minutes of each meeting will be kept which shall, as a minimum, contain a record of persons present, a description of matters discussed and conclusions reached, and copies of all reports received, issued or approved by the Council. The accuracy of all minutes shall be certified by the DTM or his representative present during the proceedings recorded.

5. Authority. The Electromagnetic Radiation Management Advisory Council (ERMAC) is established pursuant to Section 502 of Executive Order 11051.

6. Effective Date. This Order is effective the date of issuance.



Price Daniel  
Director

OEP 690430



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

ELECTROMAGNETIC RADIATION MANAGEMENT ADVISORY COUNCIL  
(ERMAL) - ERMAL MEMBERS

Dr. W. Ross Adey:

ADEY, Dr. William Ross, 7121 Dume Drive, Malibu, California. NEUROPHYSIOLOGY, Adelaide, Australia, January 31, 1922; nat; m. 44; c. 3. B.S. & M.B., Adelaide, 43, M.D., 49. Lectr, sr. lectr. & reader anat, Adelaide, 46-53; asst. prof, California, Los Angeles. 53-54; sr. lectr, Melbourne, 54-57; PROF. ANAT. & PHYSIOL, CALIFORNIA, LOS ANGELES, 57-, DIR. SPACE BIOL. LAB, BRAIN RES. INST, 61- Nuffield Found. Dom. traveling fel, 50; Rockefeller Found. grants, 51, 55; Royal Soc. London & Nuffield Found. traveling bursary, 56-57. Consult, Vet. Admin. Hosp, Calif. 57. Chmn. weightlessness panel, Space Sci. Bd, 62; mem. panel cybernet, White House, 63; adv. cmt. res. resources & facilities, Nat. Insts. Health, 64. Royal Australian Navy, 44-46, Surg. Lt. AAAS; Physiol. Soc; Asn. Anat, (Herrick Award, 63); Anat. Soc. Gt. Brit. & Ireland. Neuroanatomy and neurophysiology of brain functions in behavioral mechanisms; medical electronics and bioinstrumentation.

Professor Merril W. Eisenbud:

EISENBUD, PROF. MERRIL, W. Lake Rd, Tuxedo, N.Y. ENVIRONMENTAL HEALTH, New York, N. Y. Mar. 18, 15; m. 39; c. 3. E. E, NY. Univ, 36, hon, Sc. D, 60. Indust. hygienist, Liberty Mutual Ins. Co, 36-47; assoc. prof, ENVIRON, MED. N.Y. UNIV. MED. CENTER, 45-55, adj. prof. 55-59, PROF, 59- Dr. health & safety lab, U.S. Atomic Energy Cmn, 47-57, mgr. N. Y. Oper. Off, 54-59; sr. sci. adv. preparatory cmn, Int. Atomic Energy Agency, 57. Mem. exec. cmt, Nat. Safety Coun, 51-57; toxicol cmt, Nat. Res. Coun, 52-62, atmospheric & indust. hyg. cmt, 52-; alternate U. S. rep, sci. cmt. effects of atomic radiation, Nat. Acad. Sci, 56-64; expert adv. panel radiation, WHO, 57-; mem, Nat. Coun. Radiation Protection, 64- Fel. AAAS; Radiation Res. Soc; fel. Nuclear Soc; Health Phys. Soc. (pres, 64-66); Indust. Hyg. Asn; Pub. Health Asn. Environmental activity; behavior of aerosols; beryllium poisoning; radiological hygiene effects of radioactive dusts.

Mr. Harold Gauper

GAUPER, Harold A., Jr., b. Fargo, North Dakota, Sept. 5, 21; ELECTRICAL ENGINEERING. B.S., Univ, Wis., 43. Engineering Test Course, 43, Advanced Engineering Program, 44, Electromagnetic Interference Control Program, 51, GENERAL ELECTRIC CO., MANAGER, ELECTRICAL INTERFERENCE & TRANSIENTS PROGRAM, RESEARCH AND DEVELOPMENT CENTER, 66-. Senior Member IEEE; served on the IEEE G-EMC Administrative Committee 61-63; Tau Beta Pi, USASI Sectional Committee on Radio Electrical Coordination (C63), Chairmanship USASI C63 Subcommittee on Techniques & Developments, NEMA Power & Communication Coordination Committee & the IEEE Induction & Dielectric Heating Subcommittee. Technical Advisor to U.S. Rep. on CIGRE's Study Committee on Radio & Telephone Interference, represented U.S.A. on IEC & CISPR working groups & a Plenary Session of CISPR. Address: General Electric Company, Schenectady, New York.



ERMAC MEMBERS

Dr. William Taylor Ham, Jr.:

HAM, DR. WILLIAM T(AYLOR), JR, b. Norfolk, Va. Sept 20, 08; m; c. 2. PHYSICS. B.S.E. Virginia, 31, M.S. 33 Ph.D. (physics), 35. Instr. physics, Columbia, 36-37; res. physicist, Kendall Mills, N.C, 37-38; pres, W. T. Ham & Co, Inc. Va, 38-40; res. assoc, Virginia, 40-43; head div. physics, Inst. Textile Tech, 46-48; assoc. prof. physics, MED. COL. VA, 48-53, PROF. BIOPHYS. & HEAD DEPT, 53- Civilian with Off. Sci. Res. & Develop, 40-43. U.S.M.C, 43-46, Res, 46-, Maj. AAAS; fel. Phys. Soc; Biophys. Soc; Health Physics Soc; Statist. Asn; Biomet. Soc; Optical Soc. Radiation dosimetry; radiobiology; thermal injury; biophysics; health physics. Address: Dept. of Biophysics, Medical College of Virginia, Box 877, Richmond, Va. 23219.

H. Janet Healer:

HEALER, H. Janet, Farm Street, Dover, Mass. 02030, BIOSCIENCES, b. Boston, Mass. May 11, 39; B. A. Boston, 61; Associate Scientist, 61-62, Bioscientist 62-67, Project Scientist 62-, ALLIED RESEARCH ASSOCIATES, INC.\*, MANAGER, BIOSCIENCE PROGRAMS, 67-. RESA, Aerospace Medical Association, New York Academy of Sciences. Bionics, biomechanics, electromagnetic radiation effects, biomedical information processing.  
\*Concord, Massachusetts

Dr. Charles M. Herzfeld:

HERZFELD, DR. CHARLES M(ARIA), b. Vienna, Austria, June 29, 25; nat; m. 54; c.3. PHYSICS. B.Ch.E, Catholic Univ, 45; Gen. Ed. fel, Carnegie Found, 49-50; Ph.d.(phys.chem), Chicago, 51, Lectr, Chicago, 46-47; De Paul, 48-50; physicist, Ballistic Res. Lab, Aberdeen Proving Ground, 51-53; U.S. Naval Res. Lab, 53-55; consult. to chief, heat & power div, Nat. Bur. Standards, 55-56, acting asst. chief, 56-57, chief heat div, 57-61, assoc. dir, 61; dir. ballistic missile defense, ADV. RES. PROJS. AGENCY, U.S. DEPT. DEFENSE, 61-63, dep. dir, 63-65, DIR, 65- Lectr, Maryland, 53-57, prof, 57-61; mem. Brookings Inst. Fifth Conf. Career Execs. Fed. Govt, 58. Flemming Award, 63. U.S.A, 51-53. Fel. Phys. Soc; Ord. Asn. Heterogeneous catalysis; theory of interior ballistics; magnetism and spectra of solids; trapped radicals; group theory; missile defense. Address: 534 Cherry Tree Terrace, Smoke Rise, Butler, New Jersey 07405. 1967-, Technical Director, Space & Defense Group, IT&T, Nutley, New Jersey.



ERMAC MEMBERS

Dr. Samuel Koslov:

KOSLOV, DR. SAMUEL, b. Brooklyn, N. Y, Jan. 24, 27; m. 48; c. 3. PHYSICS. A.B, Columbia, 48, M.A, 50, Ph.D. (physics), 57. Asst. physics, Nevis Cyclotron Lab, Columbia, 50-54; mem. tech. staff electron tube develop, Bell Tel. Labs, Inc, N.J, 54-56; physicist, eng. div, Vitro Corp. Am, 56-57; asst. prof. physics, Stevens Inst. Tech, 57-60, assoc. prof, 60-61; asst. dept. head physics & space sci, Vitro Labs, 61-62; dir. phys. sci, Allied Res. Assocs, 62-64; from dep. dir. nuclear test detection to dir. adv. sensors, Adv. Res. Proj. Agency, 64-65; SPEC. ASST. TO DIR. DEFENSE RES. & ENG. FOR INTEL. & RECONNAISSANCE: 65- Consult, Vitro Corp. Am, 57-; Repub. Aviation Co, 58. U.S.N.R, 45-46. Phys. Soc; Inst. Aeronaut. & Astronaut; Inst. Elec. & Electronics Eng. Plasma, ionosphere and nuclear physics; reactor engineering; microwaves; history of science; biophysics; intelligence and reconnaissance. Address: Office of the Director of Defense Research & Engineering Office of the Secretary of Defense, Room 3E 120, The Pentagon, Washington, D. C. 20301. 1967-Research Council, The RAND Corporation, Washington.

William Walden Mumford:

MUMFORD, WILLIAM WALDEN, b. Vancouver, Wash, June 17, 05; m. 31; c. 2. ELECTRONICS. A. B. Willamette, 30. Clerk & tel. operator, West. Union Tel. Co, Wash, 24-25, mgr. & tel. operator, 25; lab. asst, State Hwy. Cmn Oregon, 28-30; MEM. TECH. STAFF, BELL TEL, LABS, INC, 30- Vis Mackay prof, California, 55; Ford Found. vis. prof, Wisconsin, 62. U.S.C.G, 23-24. Fel. Inst. Elec. & Electronics Eng. Propagation of ultra short waves; directional coupler for monitoring direct and reflected waves in a transmission line; microwave waveguide components; microwave measurements; gaseous discharge noise generator for measuring noise figure of microwave receivers; microwave radiation hazards evaluation. Address: 4 Craydon St, Morris Plains, N. J. 07950.



ERMAL MEMBERS

Dr. Herbert Pollack:

POLLACK, DR. HERBERT, b. New York, N.Y. June 29, 05; m. 46; c. 2. MEDICINE. A.B. Washington & Lee, 25; M.D. Cornell, 29; Littauer traveling fel, Col. of France, 29; Mayo Found. fel, Minnesota, 32-33, Ph.D. (physiol), 33. Instr. physiol, med. col, Cornell, 28-29; asst. med. Mayo Clin. 32-34; col. physicians & surgeons; Columbia, 34-48, lectr, 48-54; assoc. prof. clin. med. post-grad. med. sch, N.Y. Univ, 54-61; MEM. SR. TECH. STAFF, INST. DEFENSE ANAL. 61-; CLIN. PROF. MED. SCH. MED. GEORGE WASHINGTON, 62- Instr, med. col, Cornell, 34-40. From asst. to assoc. physician in charge metab. clins. Mt. Sinai Hosp, 34-61; vis. physician, N. Y. Univ. & Bellevue Hosp, 54-61. Consult, Secy. War; Inderdept. Cmn. Nutrit. for Nat. Defense; U. S. Pub. Health Serv; Surgeon Gen, U.S. Dept. Army; panel consult. food & nutrit. bd, Nat. Res. Coun, 46, mem. 50-; adv. panel med. sci. to dir. res. & eng. Dept. Defense; med. adv. panel to the admin. Fed. Aviation Agency; consult. Food & Drug Admin, 65- Med. C. 42-46, Vol. Physiol. Soc; Soc. Clin. Invest; Soc. Exp. Biol; Diabetes Asn; fel. Am. Med. Asn; fel. Pub. Health Asn; Inst. Nutrit; fel. Col. Physicians; Aerospace Med. Asn; fel. N.Y. Acad. Med. Cellular physiology; carbohydrate metabolism; nutrition and vitamin functions; arteriosclerosis; convalescent nutrition. Address: Westview Farm, Leesburg, Va. 22075.

Herbert G. Weiss:

WEISS, HERBERT G, 28 Barberry Rd, Lexington, Mass. ELECTRONICS. Elizabeth, N. J, Oct. 2, 18; m. 49; c. 3. S.B. Mass. Inst. Tech, 40. Res. assoc, Mass. Inst. Tech, 39-40, mem. staff, radiation lab, 41-45, Nat. Res. Council fel, 45; group leader in charge electronics res. sect. physics div. Los Alamos Sci. Lab, California, 45-48; sr. engr, Raytheon Mfg. Co, 48-52; group leader radar systems, LINCOLN LAB, MASS. INST. TECH, 52-60, ASSOC. DIV. HEAD, 60- Phys. Soc; Inst. Radio Eng. Design of radar systems, wide band infrared amplifiers, nuclear instruments and control systems; automatic frequency control systems for pulsed systems; radio astronomy instrumentation.

NON-MEMBERS ERMAC

HEW

Dr. Robert L. Elder - Associate Director, Bureau of Radiological Health, HEW

Dr. Andrew C. Wheeler - Asst Dir., DOD Liaison

DOD

Dr. Steven D. Lukasik - Dep Dir. Advanced Research Projects Agency

CDR Paul E. Tyler - Bureau of Medicine & Surgery, U. S. Navy

Dr. Francis W. Morthland - OCRD, U. S. Army

Lt Col. Herbert E. Bell - HQ, U. S. Air Force

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Dr. Myles Maxfield  
M.D., Ph.D

FCC

Mr. William H. Watkins	Chief Engineer
Mr. Arnold Skrivseth -	Asst Chief Engr Research
Mr. Willmar K. Roberts -	Asst Chief, Laboratory Div
Mr. Robert L. Cutts -	Asst to Chief Engineer for Plans & Spectrum Development
Mr. Herman Garlan -	Chief, R. F. Devices Branch

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9/23/70

ERMAC

Wednesday 10/21/70

MEETING  
10/21/70  
5 p. m.

11:45 Mr. Whitehead will meet with the ERMAC group  
again at 5 o'clock this afternoon.

Tuesday 10/20/70

MEETING

10/21/70

9 a.m.

12:20 Wednesday at 9 a.m. is the "Staff meeting time".

In lieu of your 9:30 ERMAC and having to be at the White House at 9:45, shall we cancel staff meeting?

Assume you want Coyt Belo to take you to the S.E. gate of the White House, where all are supposed to assemble for the maritime bill signing ceremony -- it will be held in the Diplomatic Reception Room.



OFFICE OF TELECOMMUNICATIONS POLICY

**ROUTE SLIP**

TO C. T. Whitehead

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

FROM W. Dean, Jr.

DATE 10/20/70

**ACTION**

Concurrence ☐

Signature ☐

Comments ☐

For reply ☐

Information ☒

Per conversation ☐

Discuss with me ☐

**REMARKS**

Attached for your use at  
tomorrow's ERMAC, if desired.

Recommend you stay for  
first hour, if possible.

Would be good if you  
could hear HEW and  
military presentations.

Will.

ERMAC  
mtg

Suggested Notes for Director's Opening Remarks to ERMAC

It is indeed a pleasure to meet with all of you today. I have been given a quick review of the accomplishments of ERMAC to date and I feel that the Council Members should be pleased at having reached the point where we stand today. I am convinced of the need for continuing ERMAC and for pushing to fruition their proposed program for control of electromagnetic pollution of the environment. I am sure that all of you likewise, appreciate this need and will make every effort to cooperate in this endeavor.

Today we are going to discuss this proposed program, in detail, with representatives of interested Government Agencies, with particular emphasis placed upon the responsibilities of each Agency in the overall program. For this purpose, I am asking Dr. Koslov to lead the discussion, one agency at a time so that the meeting will proceed in an orderly manner. Thank you for permitting me to be with you this morning and I wish you every success in reaching your objectives.

Dr. Koslov:

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

Agenda  
for the Ninth Meeting of the  
Electromagnetic Radiation Management Advisory Council  
October 21, 1970

- |            |  |
|------------|--|
| 9:30 A.M.  | 1. Introduction of Members, Observers and Government Representatives |
| 9:40 A.M.  | 2. Opening Remarks of Director                                       |
|            | 3. Presentation of Individual Agencies                               |
| 9:45 A.M.  | (a) HEW  |
| 10:15 A.M. | (b) Army   |
| 10:45 A.M. | (c) Navy   |
| 11:15 A.M. | (d) Air Force  |
| 11:45 A.M. | (e) Commerce   |
| 1:40 P.M.  | (f) FCC  |
| 2:00 P.M.  | (g) FAA  |
| 2:20 P.M.  | (h) USIA   |
| 2:40 P.M.  | (i) Agriculture  |
| 3:00 P.M.  | (j) NASA   |
| 3:20 P.M.  | (k) CIA  |
| 3:30 P.M.  | 4. General Comments and Questions                                    |



Monday 10/5/70

MEETINGS

10/7/70

3:00 p.m.

~~10/22/70~~

~~10/22/70~~

9:30 a.m.

3:00 Will Dean asked us to schedule a meeting with Dr. Koslov, Janet Healer, Mr. Siling, re Electromagnetic Radiation Management Advisory Council -- we have scheduled it for 3 p.m. on Wednesday (10/7).

We have scheduled a meeting of the ERMAG for 9:30 a.m. on Wednesday (10/21).

*Wed. 10/21*

cc: Dr. Mansur

ERMAC

mtg  
set for  
10/7  
3pm  
and  
10/21  
9:30 am

10/1/70

Steve Doyle -

1. Sam Kozlov (RAND) is  
prime mover on ERMAC  
(side effects). If at all  
possible he would like  
to see Tom next Wednesday  
(10/7/70) or Thursday (10/8/70).  
Siding & self should  
also be present.

2. Related manner. Hope  
Tom or George can chair  
ERMAC meeting on 10/21/70,  
at least at outset.

3. Appropriate an assist.

Will Dean.

OEP ORDER 1200.7  
December 11, 1968

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

OEP ORDER 1200.7

TO: Executive Staff, Staff and Regional Directors

SUBJECT: Electromagnetic Radiation Management Advisory  
Council (ERMAC)

1. Purpose. This Order establishes and describes the functions of the Electromagnetic Radiation Management Advisory Council.

2. Membership. The membership will be composed of approximately ten members chosen from the industrial, academic, and professional communities, whose primary disciplines will include: medicine, biological sciences, electronics, radiological safety, information handling, electrical engineering, spectrum management, and such others as may be deemed necessary. Members will be appointed by the Director of Telecommunications Management.

3. Functions. The Council will review, advise, and make recommendations to the Director of Telecommunications Management on both Government and non-Government activities bearing on the adequacy of control of electromagnetic applications which may involve directly or indirectly the production of harmful radiant energy in any position in the spectrum. (The spectrum is presumed to consist of the electromagnetic spectrum range from electrostatic and constant magnetic fields through the radio frequency spectrum to the optical spectrum, including the use of coherent optical radiation (lasers), and x-rays produced by electrical or electromagnetic devices). In addition, the Council may at its discretion concern itself with those non-electromagnetic radiation phenomena, such as infra-sonic and ultra-sonic radiation, which may derive from the use of electronic equipments or be under the purview of those agencies of the Government as may be concerned with the electromagnetic spectrum. The activities of the Council are divided into two major areas involving safety and/or harmful effects--biological effects and effects on equipment and material.

4. Organization.

a. The Council will be chaired by the Director of Telecommunications Management. He will designate an Executive Secretary who will act as staff advisor to the Council.

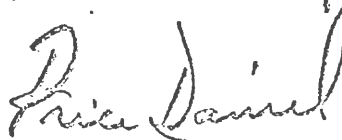


OEP ORDER 1200.7  
December 11, 1968

b. All meetings will be held at the call, or with the advance approval of the DTM or his representative, and with an agenda formulated or approved by such official. All meetings shall be conducted in the presence of the DTM or other full time salaried Government official, who shall adjourn any meeting whenever he considers adjournment to be in the public interest. Minutes of each meeting will be kept which shall, as a minimum, contain a record of persons present, a description of matters discussed and conclusions reached, and copies of all reports received, issued or approved by the Council. The accuracy of all minutes shall be certified by the DTM or his representative present during the proceedings recorded.

5. Authority. The Electromagnetic Radiation Management Advisory Council (ERMAC) is established pursuant to Section 502 of Executive Order 11051.

6. Effective Date. This Order is effective the date of issuance.



Price Daniel  
Director

OEP 690430

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

ELECTROMAGNETIC RADIATION MANAGEMENT ADVISORY COUNCIL  
(ERMAC) - ERMAC MEMBERS

Dr. W. Ross Adey:

ADEY, Dr. William Ross, 7121 Dume Drive, Malibu, California. NEUROPHYSIOLOGY, Adelaide, Australia, January 31, 1922; nat; m. 44; c. 3. B.S. & M.B. Adelaide, 43, M.D. 49. Lectr, sr. lectr. & reader anat, Adelaide, 46-53; asst. prof, California, Los Angeles. 53-54; sr. lectr, Melbourne, 54-57; PROF. ANAT. & PHYSIOL, CALIFORNIA, LOS ANGELES, 57-, DIR. SPACE BIOL. LAB, BRAIN RES. INST, 61- Nuffield Found. Dom. traveling fel, 50; Rockefeller Found. grants, 51, 55; Royal Soc. London & Nuffield Found. traveling bursary, 56-57. Consult, Vet. Admin. Hosp, Calif. 57. Chmn. weightlessness panel, Space Sci. Bd, 62; mem. panel cybernet, White House, 63; adv. cmt. res. resources & facilities, Nat. Insts. Health, 64. Royal Australian Navy, 44-46, Surg. Lt. AAAS; Physiol. Soc; Asn. Anat, (Herrick Award, 63); Anat. Soc. Gt. Brit. & Ireland. Neuroanatomy and neurophysiology of brain functions in behavioral mechanisms; medical electronics and bioinstrumentation.

Professor Merril W. Eisenbud:

EISENBUD, PROF. MERRIL, W. Lake Rd, Tuxedo, N.Y. ENVIRONMENTAL HEALTH, New York, N. Y. Mar. 18, 15; m. 39; c. 3. E. E, NY. Univ, 36, hon. Sc. D, 60. Indust. hygienist, Liberty Mutual Ins. Co, 36-47; assoc. prof, ENVIRON, MED. N.Y. UNIV. MED. CENTER, 45-55, adj. prof. 55-59, PROF, 59- Dr. health & safety lab, U.S. Atomic Energy Cmn, 47-57, mgr. N. Y. Oper. Off, 54-59; sr. sci. adv. preparatory cmn, Int. Atomic Energy Agency, 57. Mem. exec. cmt, Nat. Safety Coun, 51-57; toxicol cmt, Nat. Res. Coun, 52-62, atmospheric & indust. hyg. cmt, 52-; alternate U. S. rep, sci. cmt. effects of atomic radiation, Nat. Acad. Sci, 56-64; expert adv. panel radiation, WHO, 57-; mem, Nat. Coun. Radiation Protection, 64- Fel. AAAS; Radiation Res. Soc; fel. Nuclear Soc; Health Phys. Soc. (pres, 64-66); Indust. Hyg. Asn; Pub. Health Asn. Environmental activity; behavior of aerosols; beryllium poisoning; radiological hygiene effects of radioactive dusts.

Mr. Harold Gauper

GAUPER, Harold A., Jr., b. Fargo, North Dakota, Sept. 5, 21; ELECTRICAL ENGINEERING. B.S., Univ, Wis., 43. Engineering Test Course, 43, Advanced Engineering Program, 44, Electromagnetic Interference Control Program, 51, GENERAL ELECTRIC CO., MANAGER, ELECTRICAL INTERFERENCE & TRANSIENTS PROGRAM, RESEARCH AND DEVELOPMENT CENTER, 66-. Senior Member IEEE; served on the IEEE G-EMC Administrative Committee 61-63; Tau Beta Pi, USASI Sectional Committee on Radio Electrical Coordination (C63), Chairmanship USASI C63 Subcommittee on Techniques & Developments, NEMA Power & Communication Coordination Committee & the IEEE Induction & Dielectric Heating Subcommittee. Technical Advisor to U.S. Rep. on CIGRE's Study Committee on Radio & Telephone Interference, represented U.S.A. on IEC & CISPR working groups & a Plenary Session of CISPR. Address: General Electric Company, Schenectady, New York.

ERMAC MEMBERS

Dr. William Taylor Ham, Jr.:

HAM, DR. WILLIAM T(AYLOR), JR, b. Norfolk, Va. Sept 20, 08; m; c. 2. PHYSICS. B.S.E. Virginia, 31, M.S. 33 Ph.D. (physics), 35. Instr. physics, Columbia, 36-37; res. physicist, Kendall Mills, N.C, 37-38; pres, W. T. Ham & Co, Inc. Va, 38-40; res. assoc, Virginia, 40-43; head div. physics, Inst. Textile Tech, 46-48; assoc. prof. physics, MED. COL. VA, 48-53, PROF. BIOPHYS. & HEAD DEPT, 53- Civilian with Off. Sci. Res. & Develop, 40-43. U.S.M.C, 43-46, Res, 46-, Maj. AAAS; fel. Phys. Soc; Biophys. Soc; Health Physics Soc; Statist. Asn; Biomet. Soc; Optical Soc. Radiation dosimetry; radiobiology; thermal injury; biophysics; health physics. Address: Dept. of Biophysics, Medical College of Virginia, Box 877, Richmond, Va. 23219.

H. Janet Healer:

HEALER, H. Janet, Farm Street, Dover, Mass. 02030, BIOSCIENCES, b. Boston, Mass. May 11, 39; B. A. Boston, 61; Associate Scientist, 61-62, Bioscientist 62-67, Project Scientist 62-, ALLIED RESEARCH ASSOCIATES, INC.\*, MANAGER, BIOSCIENCE PROGRAMS, 67-. RESA, Aerospace Medical Association, New York Academy of Sciences. Bionics, biomechanics, electromagnetic radiation effects, biomedical information processing.  
\*Concord, Massachusetts

Dr. Charles M. Herzfeld:

HERZFELD, DR. CHARLES M(ARIA); b. Vienna, Austria, June 29, 25; nat; m. 54; c.3. PHYSICS. B.Ch.E, Catholic Univ, 45; Gen. Ed. fel, Carnegie Found, 49-50; Ph.d.(phys.chem), Chicago, 51, Lectr, Chicago, 46-47; De Paul, 48-50; physicist, Ballistic Res. Lab, Aberdeen Proving Ground, 51-53; U.S. Naval Res. Lab, 53-55; consult. to chief, heat & power div, Nat. Bur. Standards, 55-56, acting asst. chief, 56-57, chief heat div, 57-61, assoc. dir, 61; dir. ballistic missile defense, ADV. RES. PROJS. AGENCY, U.S. DEPT. DEFENSE, 61-63, dep. dir, 63-65, DIR, 65- Lectr, Maryland, 53-57, prof, 57-61; mem. Brookings Inst. Fifth Conf. Career Execs. Fed. Govt, 58. Flemming Award, 63. U.S.A, 51-53. Fel. Phys. Soc; Ord. Asn. Heterogeneous catalysis; theory of interior ballistics; magnetism and spectra of solids; trapped radicals; group theory; missile defense. Address: 534 Cherry Tree Terrace, Smoke Rise, Butler, New Jersey 07405. 1967-, Technical Director, Space & Defense Group, IT&T, Nutley, New Jersey.



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Dr. Samuel Koslov:

KOSLOV, DR. SAMUEL, b. Brooklyn, N. Y, Jan. 24, 27; m. 48; c. 3. PHYSICS. A.B, Columbia, 48, M.A, 50, Ph.D. (physics), 57. Asst. physics, Nevis Cyclotron Lab, Columbia, 50-54; mem. tech. staff electron tube develop, Bell Tel. Labs, Inc, N.J, 54-56; physicist, eng. div, Vitro Corp. Am, 56-57; asst. prof. physics, Stevens Inst. Tech, 57-60, assoc. prof, 60-61; asst. dept. head physics & space sci, Vitro Labs, 61-62; dir. phys. sci, Allied Res. Assocs, 62-64; from dep. dir. nuclear test detection to dir. adv. sensors, Adv. Res. Proj. Agency, 64-65; SPEC. ASST. TO DIR. DEFENSE RES. & ENG. FOR INTEL. & RECONNAISSANCE: 65- Consult, Vitro Corp. Am, 57-; Repub. Aviation Co, 58. U.S.N.R, 45-46. Phys. Soc; Inst. Aeronaut. & Astronaut; Inst. Elec. & Electronics Eng. Plasma, ionosphere and nuclear physics; reactor engineering; microwaves; history of science; biophysics; intelligence and reconnaissance. Address: Office of the Director of Defense Research & Engineering Office of the Secretary of Defense, Room 3E 120, The Pentagon, Washington, D. C. 20301. 1967-Research Council, The RAND Corporation, Washington.

William Walden Mumford:

MUMFORD, WILLIAM WALDEN, b. Vancouver, Wash, June 17, 05; m. 31; c. 2. ELECTRONICS. A. B. Willamette, 30. Clerk & tel. operator, West. Union Tel. Co, Wash, 24-25, mgr. & tel. operator, 25; lab. asst, State Hwy. Cmn Oregon, 28-30; MEM. TECH. STAFF, BELL TEL, LABS, INC, 30- Vis Mackay prof, California, 55; Ford Found. vis. prof, Wisconsin, 62. U.S.C.G, 23-24. Fel. Inst. Elec. & Electronics Eng. Propagation of ultra short waves; directional coupler for monitoring direct and reflected waves in a transmission line; microwave waveguide components; microwave measurements; gaseous discharge noise generator for measuring noise figure of microwave receivers; microwave radiation hazards evaluation. Address: 4 Craydon St, Morris Plains, N. J. 07950.

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WEISS, HERBERT G, 28 Barberry Rd, Lexington, Mass. ELECTRONICS. Elizabeth, N. J, Oct. 2, 18; m. 49; c. 3. S.B. Mass. Inst. Tech, 40. Res. assoc, Mass. Inst. Tech, 39-40, mem. staff, radiation lab, 41-45, Nat. Res. Council fel, 45; group leader in charge electronics res. sect. physics div. Los Alamos Sci. Lab, California, 45-48; sr. engr, Raytheon Mfg. Co, 48-52; group leader radar systems, LINCOLN LAB, MASS. INST. TECH, 52-60, ASSOC. DIV. HEAD, 60- Phys. Soc; Inst. Radio Eng. Design of radar systems, wide band infrared amplifiers, nuclear instruments and control systems; automatic frequency control systems for pulsed systems; radio astronomy instrumentation.

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