ADDRESS BY

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Judy

CLAY T. WHITEHEAD DIRECTOR

OFFICE OF TELECOMMUNICATIONS POLICY EXECUTIVE OFFICE OF THE PRESIDENT

at the

NATIONAL RADIO NAVIGATION SYMPOSIUM MARRIOTT TWIN BRIDGES MOTOR HOTEL WASHINGTON, D.C.

November 14, 1973

# Ladies and Gentlemen:

In sponsoring this symposium, the Institute of Navigation has undertaken an important but difficult task -getting users, suppliers, technologists and government officials talking and working together about future radio navigation systems. I'm sure that at least some among you find that the availability of many different systems -based on the many different technical advances of the last decade -- is a mixed blessing.

A similar situation exists across the entire field of communications. I thought that my most useful role would be to talk about this broader problem.

The scope of the field we are dealing with is illustrated by the following quotation from Nigel Calder, British science journalist:

"Think of a system incorporating the computing, publishing, newspaper, broadcasting and library, telephone and postal services of the country... All these, each growing in its own right and subsumed in one system, will outstrip in magnitude and importance any industry or collective activity in which human beings have been previously engaged."

Frankly, I find that the system Calder describes boggles the mind. But it is indeed what's coming upon us. On this side of the Atlantic, Peter Drucker has a similar vision. He sees the information industry as one of four new industries which will replace steel, electricity, chemicals, and the internal combustion engine as the primary source of future economic growth. Drucker says that most of the money and most of the ingenuity of the information industry will go into the transmission and application of information (that is to say communications) rather than into its generation and storage.

Communications will serve the knowledge industry as railroads and highways serve older product-oriented industries. So it would serve us well to reflect on possible lessons to be learned from the historical influence of government policy on transportation. Government policy over the last fifty years (or the lack of it) has resulted in bankrupting the rail system while creating an all but automatic mechanism for paving over the earth. (It used to be that a politican was judged by his ability to get a road through; now he is judged by his ability to stop one.)

The failure of railroads and the dominance of highways cannot be blamed totally on the activities of regulatory agencies. Rather it is the sum total of Government policy -taxation, subsidy programs, regulation, anti-trust, labor -which has brought on the transportation crisis. All levels of Government, all branches of Government, have played a part.

Today, all the branches and levels of Government are exercising their authority over communications. Regulatory

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decisions are more often taken to the courts. A Federal-State jurisdictional battle rages over interconnection. Anti-trust moves are rumored. Congressional interest in pay-TV is voiced. International aviation and maritime bodies influence the use of communications for navigation and traffic control. All of these Governmental bodies are responding to pressures from private institutions jockeying for position, while consumer-oriented groups demand greater attention to the public interest.

What are the prospects for a coherent national policy or strategy to emerge from these pressures? There is no fundamental basis for optimism -- the present debates are characterized by much more heat than light. I have no prescription for early relief or a complete cure. However, I can offer a diagnosis, and certain forms of useful therapy.

The sixties was a decade of tremendous advances in communications technology. Satellites, lasers, printed circuits, integrated circuits, signal processing techniques, fiber optics, and a whole host of developments came at a pace more rapid than could be absorbed. The inability -or unwillingness -- of existing institutions to apply all this technology to expand services and lower costs has led to demands for new institutional arrangements, such as the Comsat Corporation and, more recently, competitive entry into certain communications markets.

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The challenge of the seventies will be to adapt to this new wealth of communications and information technology, to adapt organizationally, socially, and politically. The Government cannot and should not, dictate how industry and consumers will adapt. But there are some things the Government can and should do to channel the process into constructive bounds. Let me mention briefly three of these areas.

<u>First</u>, there must be more thorough and systematic assessment of the <u>boundaries of competition</u>. Let me illustrate with two examples.

For years many have thought that signal interference made it impossible to have more VHF stations in major markets. The technical realities are otherwise as a new study has just shown. There is room without interference for 60 or more new VHF TV stations -- TV outlets that would benefit the public by providing more choice for the viewer and more competition for the viewer's interest, not to mention more efficient use of the radio frequency spectrum. What the <u>political</u> realities will permit us to do with this knowledge isn't half as clear as the technical realities or the public interest.

In another area, the public interest is not quite so clear. A few years ago, several new specialized communications carriers were licensed under the theory that they would compete to offer the public new services. AT&T with its

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national telephone monopoly was to be allowed to compete also. But the boundaries between this competition and the monopoly were vague. AT&T now sees inroads on its business and wants the Government to prohibit any further competition, which would in effect require another division of the market administered by Government regulation just like we have had in transportation regulation. But outlawing competitors is certainly no solution. Greater efforts must be mounted to define how the social benefits of monopoly and the responsiveness to consumer demand of competition can co-exist in this field to serve best the overall public interest.

The <u>second</u> form of therapy I want to suggest is giving more attention to <u>defining and then protecting individual</u> <u>rights</u> in an information-oriented society. As we look back on the evolution of industrial society, we see that it called for new Government policies relating to wages, working conditions, full employment, labor practices, and concentration of industrial power. The emerging knowledge-based society will require equal attention toward different, but equally important, individual rights such as information access, privacy, and rewards for the fruits of creative work.

Almost two hundred years ago, the Bill of Rights provided the minimum terms on which the American people would accept the innovations contained in the new U.S. Constitution. Today, as we experience the economic and

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social discontinuities of becoming an information-oriented society, those rights need to be augmented. Unless this is done in a clear and understandable way, <u>every</u> Government initiative in communications will be viewed as a potential conspiracy against the public. The result will be a chronic policy paralysis which periodically becomes dangerously acute.

The <u>third</u> form of therapy I want to prescribe tonight is the development of a new understanding of <u>the role of the</u> <u>Federal Government</u>, particularly Executive departments and agencies, in stimulating, directing and providing information systems and services.

The decades since World War II have seen the Federal Government actively advancing and applying communications and computer technology to support the Defense effort, and then the space program. In this environment, systems engineering flowered and became almost a way of life. As the cold war receded and domestic priorities came to the fore, it seemed for a while that the existing machinery of technological development and the techniques of systems engineering could be turned toward social goals without much ado -- somewhat like redirecting the stream of a firehose.

We now know that this won't work. The applications are too different, the goals too diverse. A Federally

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directed systems engineering effort to solve the problems of society would do too much violence to other Governmental and private institutions -- and to individual rights.

A new pattern of Federal action in fostering electronics and communications technologies must be developed. It must work through the channels of intergovernmental cooperation which President Nixon has stressed to strengthen state and local governments. It must facilitate the application of the technology we have, rather than the cataloging of social needs to justify Government funding of new technology. It must provide for a careful screening of every new program to assure that the Federal Government does not supplant private sources as the principal provider of information services and does not, in the name of protection or uniformity, dictate what services or what information the individual will be allowed to have.

On a related subject, Government must also redirect its machinery for applying new communications technologies to its own operations. Our internal telecommunications posture, on which we now spend \$5-10 billion annually, cannot be a product of uncoordinated planning and internal log-rolling. While no single system can meet all Federal communications needs, neither is there any defense of uncontrolled proliferation of expensive Federal communications

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systems. The American people expect us to administer the Government, not just to keep score. And American industry expects us to use the goods and services they offer whenever possible, rather than building up our own empire -- and rightly so.

Application of these therapies -- competition, individual rights, and limited Federal interventions -- will require new thinking in industry, Government, and the media that won't come easily.

The challenge we face in communications -- changing lifestyles and institutions to take advantage of the profuse electronic developments of the sixties without excessive negative impact -- is not unlike the challenge facing the nation as a whole. The sixties was an era of tremendous social and international turmoil. The war in Southeast Asia, the explosion of the drug problem, soaring crime, and a breakdown of authority in many of our institutions brought this nation to the brink of chaos. I believe history will show that, early in the seventies, we began to pull back from that brink. But an enormous task still remains -to bring a new order to American society -- not an order based on sterile sympathy and procrastinating promises, nor an order based on the platitudes of the past. It must be an order which recognizes today's social priorities,

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today's economic realities, today's technology. In his first address as Secretary of State, before the United Nations, Henry Kissinger said:

"We are, in fact, members of a community drawn by modern science, technology, and new forms of communication into a proximity for which we are still politically unprepared. Technology daily outstrips the ability of our institutions to cope with its fruits. Our political imagination must catch up with our scientific vision."

Kissinger was talking about the world community -but you don't have to look that far to see the challenge. We have it right in our own back yards.

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# THE INSTITUTE OF NAVIGATION

815 15TH STREET, N.W., SUITE 832 WASHINGTON, D.C. 20005 Tel: 783-4121

29 January 1974

Mr. Clay T. Whitehead Office of Telecommunications Policy Executive Offices of The President Washington, D.C. 20590

Dear Mr. Whitehead,

STI

I wish to express my personal appreciation and that of the Institute for your participation in our recent Radio Navigation Symposium. I feel that it was a successful meeting and your effort contributed materially to that achievement. It was both a privilege and a pleasure for the Institute of Navigation to serve the country's needs by providing this forum for the discussion and exchange of views on such an important problem area.

Again, many thanks for your contribution.

Sincerely,

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Theodore C. Rynda President The Institute of Navigation

Dedicated to the Advancement of the Science of Nanigation

# NATIONAL RADIO NAVIGATION SYMPOSIUM

13-15 NOVEMBER 1973 Marriott Twin Bridges Motor Hotel Washington, D.C.



With the Participation of The Office of Telecommunications Policy, The Executive Office of the President

THE INSTITUTE OF NAVIGATION 815 15th St., N.W. Suite 832 Washington, D.C. 20005

# NATIONAL RADIO NAVIGATION SYMPOSIUM

Twin Bridges Marriott, Washington, D.C. 13–15 November 1973

# MONDAY - 12 NOVEMBER 1973

Reception (Cash Bar) and Early Registration 4:30 - Tch0 p.m.

# TUESDAY - 13 NOVEMBER 1973

Registration Besk Oriens 7/30 a.m. Breakfast for Speakers and Chairmen of the Day 7:30 a.m.

> SESSION I - KEYNOTE SESSION 9:00 a.m.

Chairman: Alexander B. Winick, FAA

Keynote Remarks and ION Overview – Theodore C. Rynda, ION President DOT Overview – Dr. Robert H. Cannon, General Chairman, Assistant Secretary, DOT Office of Telecommunications Policy Overview – Charles C. Joyce, Jr., Assistant Director, OTP

Coffee Break

10:15-10:30 s.m.

Congressional Overview – Carl L. Perian, Professional Staff Member, Committee on Merchant Marine and Fisheries

DOD Overview - Robert N. Parker, Principal Deputy Director, DDR&E GAO Overview - Howard R. Manning, Supervisory Auditor

> LUNCHEON 12:00 – 1:45 p.m.

Speaker: Brig. Gen. Gustav E. Lundquist, USAF (Ret.), FAA Toastmaster: Alexander B. Winick, FAA

SESSION II – CIVIL REQUIREMENTS AND PLANS 2:00 p.m.

Chairman: Dr. Arthur Goldsmith, DOT

Meeting the Maritime Requirements in U.S. Waters – Cdr. David T. Haialip, USCG (Rev.), USCGHQ FAA Requirements – Alexander B. Winick, FAA Marail Requirements – Capt. Alfred E. Fiore, USMMA Coffee Break

Coffee Break 3)30 - 3745 p.m. Present Aidine Views Regarding Long Distance Navigation -Prank C. White, ATA Main Transit Requirements - Samuel Routhway, DOT

# WEDNESDAY - 14 NOVEMBER 1973

**Registration Desk Opens** 7:30 a.m. Breakfast for Speakers and Chairmen of the Day 7:30 a.m.

SESSION III – MILITARY REQUIREMENTS AND PLANS 9:00 a.m.

Co-Chairmen: Keith D. McDonald, DOD Donald F. Spencer, DOD

Army Requirements - Lt. Col. John B. Nun, OCRD Navy Requirements - Cdr. Robert C. May, OPNAV Air Force Requirements - William J. Becker, AFRDQ

Coffee Break

10:30 - 10:45 a.m.

Current Status of Defense Navigation Satellite Development Program - Col. Bradford Parkinson, USAF Survey of CNI Activities - Dr. Harry Davis, Consultant

Panel Discussion - Keith D. McDonald, Moderator

Members: Capt. Herbert F. Colenda-JCS J-6, Dr. John B. Fallon-ADDPA&E, Victor L. Friedrich-OASA, David R. S. McColl-OASAF, George L. Salton-OASD, Harry Sonneman-OASN, Donald F. Spencer-OASD

> **LUNCHEON** 12:00 - 1:45 p.m.

Dr. Thomas D. Nicholson, Director, The American Museum of Natural History, NYC Speaker: Toastmaster:

Theodore C. Rynda, ION President.

SESSION IV - APPLICATIONS AND SYSTEMS 2:00 p.m.

Chairman: Albert L. Hedrich, Department of Commerce

Military Versus Civilian Needs and Implementations -Keith D. McDonald, DOD

The Impact of the Choice of Frequency and Modulation on Navigation Systems - J. Ralph Johler, Institute of Telecommunication Science, Boulder, Colorado

The Electronic Navigation Requirements of the Merchant Marine -Max Carpenter, Maritime Institute of Technology

## **Coffee Break**

3:30 - 3:45 p.m.

The PLRS System - Charles W. Gill, NAVELEX Integrated Navigation Systems - A. David Klein, NASC

### BANQUET

Speaker: Toastmaster: Clay T. Whitehead, Director, Office of **Telecommunications** Policy Dr. Robert H. Cannon, General Chairman, Assistant Secretary, DOT

Cocktails (Cash Bar) Dinner

6:30 - 7:30 p.m. 7:30 p.m.

# THURSDAY - 15 NOVEMBER 1973

Breakfast for Speakers and Chairmen of the Day 7:30 a.m.

SESSION V – LORAN C AND D 9:00 a.m.

# Chairman: Cdr. Cortland G. Pohle, USMS

Fully Automatic Loran C Receivers for Commercial Airlines – John J. Hopkins, Teledyne System Company

Unexploited Potentials of Loran C – R. H. Doherty and J. Ralph Johler, Department of Commerce, ITS

Economical Usage of Long Range Navigation - W. K. Vogeler, Telcom

**Coffee Break** 

10:30 - 10:45 a.m.

A Comparison of Automatic Vehicle Tracking Systems – Frederick J. Chambers, Teledyne System Company

Current Developments in Loran D – Robert L. Frank, Sperry Rand Corporation

# SESSION VI – USER REQUIREMENTS AND THE SELECTION OF SYSTEMS 9:00 a.m.

# Chairman: Claude Pasquier, ITT

Analysis of Route Width in the Domestic Air Space – R. Braff and S. C. Michleji, Mitre Corporation

A Review and Applications of VLF and LF Transmissions for Navigation and Tracking – John M. Beukers, Beukers Labs., Inc.

Required Radio Navigation – An Air Force Navigator's Point of View – Maj. Leonard C. Lee, USAF Academy

#### **Coffee Break**

10:30 - 10:45 a.m.

Loran A – Robert W. Merriam, Merriam Instruments Corporation Loran C – A Decade to Maturity (1963–1973) – Claude Pasquier, ITT Philosophy of an Optimum Navigation Structure – E. R. Swanson, Naval Electronics Laboratories Center

### LUNCHEON

12:00 - 1:45 p.m.

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Philip J. Klass, Senior Avionics Editor, Aviation Week and Space Technology r: Eugene von Arx, Eastern Region Vice President, ION

Toastmaster:

# SESSION VII - THE OMEGA SYSTEM 2:00 p.m.

Civilian Maritime Use of the Omega System: Growing Pains -Frans Schneider, Jr., and Jerry N. Wilson, Landfall Navigation, Inc.

Flight Tests of Two Arborne Omega Navigation Systems F. C. Sekron, Jr., and P. B. Burch, Naval Air

3:30 - 3:45 p.m.

Combined Loran - Omega - Robert A. Reilly, PTT Problems and Solutions in the Satellite Relay of Omega for Search and Rescue Purposes - Walter E. Rupp, Jr., Naval Air Test Center, and Patrick J. Steen, Operations Research, Inc.

 SESSION VIII – NAVIGATION SYSTEM 2:00 p.m.

Chairman: Capt. Charles Dorian, USCG (Ret.). Communications Satellite Corporation

An Integrated Satellite Radio Navigation Surveillance and Communication System - Walter R. Fried, North American Rockwell Corporation

A Scheme for Extending the Range of Detectability of a Beacon Donald Macpaggart, Canadian Marconi Company Low Cost Navigational Processing - John G. Busharis and Arthur R. Tuppen, ITT

Coffee Break

3:30 - 3:45 p.m.

Rivers and Harbors Aids to Navigation Systems (RIHANS) -Lt. H. E. Millan, USCGHQ

Proposed Base-10 Navigational Method - E. Lewis Frasier

# SYMPOSIUM COMMITTEE

General Chairman: Dr. Robert H. Cannon, Assistant Secretary for Advanced Systems Development and Technology, DOT

## TECHNICAL COMMITTEE

#### Chairman: Mr. Alexander B. Winick, FAA

Members:

Mr. Albert L. Hedrich, DOC Mr. George H. Quinn, FAA Dr. Gabriel Frenkel, CSC Cdr. Robert Dugan, USCGHQ Mr. Donald F. Spencer, DOD Mr. Vernon I. Weihe, Consultant Mr. Max Carpenter, MITGS Mr. Charles Dorian, COMSAT Dr. M. X. Polk. OTP

Consultant:

#### THE PURPOSE OF THE ION

The Institute of Navigation is a scientific, non-profit organization founded in 1945. Its programs are directed toward elevating standards of navigation by coordinating the knowledge and achievements of practicing navigators, scientists and those involved in the development and production of navigational equipment.

#### **OFFICERS 1973-74**

#### HOTEL ACCOMMODATIONS

The following rates have been confirmed for the meeting at the Marriott Twin Bridges: Singles \$25.00 Doubles \$30.00

#### TRANSPORTATION AND PARKING

Free limousine service is provided from National Airport and free parking is available at the hotel.

OFFICE OF TELECOMMUNICATIONS POLICY EXECUTIVE OFFICE OF THE PRESIDENT WASHINGTON, D.C. 20504 October 18, 1973

ASSISTANT DIRECTOR

MEMORANDUM

FOR: Clay T. Whitehead

FROM: Charles Joyce

SUBJECT: Invitation to Speak at the Institute of Navigation Symposium

I feel that this is a very good opportunity for you to talk directly to 400 - 500 of the people who control and/or use a major portion of the Government's telecommunications dollars. Although the subject of the Symposium is Navigation most of the people who will be attending have broader responsibilities in the electronics field and are probably involved in either Government sponsorship or manufacturing of 80-90% of the total Government Telecommunications Program.

There will be a cross section of Marketing; Engineering; and Management people from industries such as ITT, Northrop, TRW, Magnovox, Litton, RCA, Sperry, Lear Siegler, Boeing, and General Dynamics; Government people such as Cannon-DOT, Lundquist-FAA, and Parker-DOD; representatives from the Air Transport Association, American Institute of Merchant Shipping, and Air Lines Pilots Association; as well as a good cross section of middle management personnel from the various Government agencies.

In addition to their interest in the Government navigation program which is evidenced by their attendance at this meeting, several of the proposed attendees have expressed an interest in knowing more about OTP's role in the total Government Telecommunications picture.

cc: Helen Hall

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815 15th Street, N.W., Suite 832 Washington, D. C. 20005 Phone: (202) 783-4121

WASHINGTON, D. C. 20005 THE 783-0121

October 5, 1973

Mr. Clay Whitehead Director Office of Telecommunications Policy The White House Washington, D.C.

Dear Mr. Whitehead:

You are probably familiar with the fact that The Institute of Navigation will hold a Radio Navigation Symposium at the Marriott Twin Bridges Motor Hotel 13-15 November, 1973.

We plan to have a banquet on the evening of 14 November, cocktails 6:30, dinner 7:30 p.m., and would be honored if you would accept an invitation to be our dinner speaker. A discussion of your choice of 30-45 minutes would be, I believe, about the right length.

Dr. Robert H. Cannon of DOT has agreed to be General Chairman of the meeting and will be toastmaster for the dinner.

We hope to have you with us on the 14th.

Sincerely yours,

Ross E. Freeman Executive Director The Institute of Navigation

7200 10/14-116

REF:tc

# Tuesday 10/30/73

MEETING 10/30/73 9:30

9:00

We have scheduled a meeting this morning at 9:30 with Mr. Joyce to discuss the speech you will be giving to the Institute of Navigation Symposium. Wednesday 10/24/73

SPEECH 11/14/73 6:30

Helen has accepted the invitation for Mr. Whitehead to speak to the Radio Navigation Symposium at the Marriott Twin Bridges Motor Hotel on Nov. 14 (dinner speech).

> Capt. Ross Freeman 783-4121 (Mrs. Coffelt)