Incidental Paper

Seminar on Command, Control, Communications and Intelligence

Guest Presentations — Spring 1981:

William O. Baker       James M. Osborne
John H. Cushman         David C. Richardson
Richard D. DeLauer      Charles Rose
B. R. Inman            Charles W. Snodgrass

Program on Information Resources Policy

Harvard University       Center for Information Policy Research
Cambridge, Massachusetts
An incidental paper of the Program on Information Resources Policy.

SEMINAR ON COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE

Guest Presentations — Spring 1981
William O. Baker, John H. Cushman, Richard D. DeLauer, B. R. Inman,
James M. Osborne, David C. Richardson, Charles Rose, Charles W. Snodgrass
December 1981  I-81-9

The Program on Information Resources Policy is jointly sponsored by Harvard University and the Center for Information Policy Research.

Chairman: Anthony G. Oettinger
Director: John C. LeGates
Executive Director, Postal and Allied Arenas: John F. McLaughlin
Executive Director, Media and Allied Arenas: Benjamin M. Compaine
Executive Director, International and Allied Arenas: Oswald H. Ganley

Incidental papers have not undergone the reviewing process the Program requires for formal publication. Nonetheless the Program considers them to merit distribution.


Printing 5 4 3
PROGRAM ON INFORMATION RESOURCES POLICY

Harvard University

Affiliates

Action for Children's Television
American District Telegraph Co.
American Management Systems, Inc.
American Telephone & Telegraph Co.
Arthur D. Little, Inc.
Auerbach Publishers Inc.
Automated Marketing Systems
BellSouth Corporation
Bell Atlantic
Booz-Allen Hamilton
Canada Post
Cellular One
CBS Broadcast Group
Commission on European Communities (Belgium)
Communications Workers of America
Computer & Communications Industry Assoc.
COMSAT
Continental Cablevision, Inc.
Copley Newspapers
Cowles Media Co.
Dai-ichi Kangyo Bank, Ltd. (Japan)
Databit Inc.
Dialog Information Services, Inc.
Digital Equipment Corp.
Direction Generale
\(\text{des Telecommunications (France)}\)
Doubleday, Inc.
Dow Jones & Co., Inc.
Dun & Bradstreet
Economics and Technology, Inc.
EIC/Intelligence Inc.
LM Ericsson (Sweden)
Federal Reserve Bank of Boston
Gannett Co., Inc.
GTE Sprint Communications Corp.
Hitachi Research Institute (Japan)
Honeywell, Inc.
Hughes Aircraft Co.
E.F. Hutton and Co., Inc.
IBM Corp.
Information Gatekeepers, Inc.
International Data Corp.
International Resource Development, Inc.
Invoco AB Gunnar Bergvall (Sweden)
Knowledge Industry Publications, Inc.
Kokusai Denshin Denwa Co., Ltd. (Japan)
Lee Enterprises, Inc.
John and Mary R. Markle Foundation
MCI Telecommunications, Inc.
McKinsey & Co., Inc.
Mead Data Central
MITRE Corp.
Motorola, Inc.
National Association of Letter Carriers
National Telephone Cooperative Assoc.
NEC Corp. (Japan)

Center for Information Policy Research

Nippon Telegraph & Telephone Public
Corporation (Japan)
Northern Telecom Ltd. (Canada)
Northrop Corp.
NYNEX
The Overseas Telecommunications
Commission (Australia)
Pacific Telesis Group
Pitney Bowes, Inc.
Public Agenda Foundation
RCA Corporation
Reader's Digest Association, Inc.
Research Institute of Telecommunications
and Economics (Japan)
Royal Bank of Canada (Canada)
Salomon Brothers
Satellite Business Systems
Scaife Family Charitable Trusts
Seiden & de Cuevas, Inc.
Southern New England Telephone
State of Minnesota Funding
State of Nebraska Telecommunications
and Information Center
Telecom Futures, Inc.
Telecommunications Research
Action Center (TRAC)
Telecom Plus International, Inc.
Times Mirror Co.
Times Publishing Co.
TRW Inc.

United States Government:
Central Intelligence Agency

Department of Commerce:
National Oceanographic and
Atmospheric Administration

National Telecommunications and
Information Administration

Department of Health and Human Services
National Library of Medicine

Department of State
Office of Communications
Federal Communications Commission
Federal Emergency Management Agency
Internal Revenue Service
National Aeronautics and Space Admin.
National Security Agency

U.S. Army:
Office of the Assistant Chief of
Staff for Information Management

United States Information Agency
United States Postal Rate Commission
United States Postal Service

US West
United Telecommunications, Inc.
The Washington Post Co.

Wolters Samson Group (Holland)
ACKNOWLEDGMENTS

For their willingness to travel to Cambridge to share their experience with my students at the Kennedy School of Government I am deeply grateful to William O. Baker, John H. Cushman, Richard D. DeLauer, B. R. Inman, James M. Osborne, David C. Richardson, Charles Rose and Charles W. Snodgrass.

The collaboration of The MITRE Corporation made this publication possible. Robert Everett’s initial interest in the seminar and John Jacobs’ continuing participation from its inception to the present provided encouragement at critical times and constant intellectual stimulation. John Jacobs and Charles Zraket arranged for editorial and production support. Robert Coltman enthusiastically applied his talents to editing raw transcripts of the seminar into coherent prose that retains the informality and the individual style and substance of each presentation and its associated discussion. Dorothy Statkus prepared the edited copy for printing. My thanks go to them for completing difficult tasks with the apparent effortlessness and the grace that mark truly professional performance.

The responsibility for any sins of omission or commission nonetheless remains entirely mine.

Anthony G. Oettinger
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting Military Needs for Intelligence Systems</td>
<td>1</td>
</tr>
<tr>
<td><em>James M. Osborne</em></td>
<td></td>
</tr>
<tr>
<td>The Convergence of CI Techniques and Technology</td>
<td>25</td>
</tr>
<tr>
<td><em>William O. Baker</em></td>
<td></td>
</tr>
<tr>
<td>A Major Contractor’s View of CI</td>
<td>69</td>
</tr>
<tr>
<td><em>Richard D. DeLauer</em></td>
<td></td>
</tr>
<tr>
<td>CI and the Commander: Responsibility and Accountability</td>
<td>95</td>
</tr>
<tr>
<td><em>John H. Cushman</em></td>
<td></td>
</tr>
<tr>
<td>Funding CI</td>
<td>119</td>
</tr>
<tr>
<td><em>Charles W. Snodgrass</em></td>
<td></td>
</tr>
<tr>
<td>The Uses of Intelligence</td>
<td>147</td>
</tr>
<tr>
<td><em>David C. Richardson</em></td>
<td></td>
</tr>
<tr>
<td>Congress and CI</td>
<td>169</td>
</tr>
<tr>
<td><em>Charles Rose</em></td>
<td></td>
</tr>
<tr>
<td>Issues in Intelligence</td>
<td>193</td>
</tr>
<tr>
<td><em>B. R. Inman</em></td>
<td></td>
</tr>
</tbody>
</table>
Introduction

The presentations in the first volume of this series (Guest Presentations — Spring 1980) described command, control, communications and intelligence principally from the perspective of national-level policy making in the Executive Branch of the U.S. Government.

In this volume, the perspective is broadened to encompass the Congress, combatant commands, defense contractors and technological innovators. All guests made their presentations in open forum, forewarned that neither classified nor proprietary matters were appropriate in a university classroom. The presentations and discussions were taped.

The papers in this volume are lightly edited transcripts of these presentations and discussions, ordered in the sequence in which they took place. The informality of oral exposition interrupted by questions or comments has been preserved. Only pauses and repetitions have been eliminated and tripping sentences have been smoothed. Substance has, as far as possible, been left unaltered.

Meeting Military Needs for Intelligence Systems
— James M. Osborne

Osborne’s background includes tactical development for the U.S. Army Signal Corps and 19 years with RCA, in which he rose to Vice President and General Manager of the Government Communications and Automated Systems Division. His career culminated with his Senior Vice Presidency at E-Systems, where he served as Group Executive for the company’s Production Electronics Group and General Manager of the ECI Division. Thus Osborne has a wide purview over the many facets of industry’s task in supplying intelligence systems to the military. I asked him to talk about what he sees as effective or ineffective in the C’I world from the supplier’s vantage point.

The Convergence of C’I Techniques and Technology
— William O. Baker

Dr. Baker rose to his present eminence via responsibility for Bell Labs’ renowned research capability, whose discoveries have led to some fundamental modern technology: transistors, superconductors, lasers. As a technologist, he shares the view that the very existence of technology — the digital computer, for example — inevitably dictates new ways of doing things, in C’I as elsewhere.
A Major Contractor's View of C'1
— Richard D. DeLauer

Since Dr. DeLauer made the remarks that follow, he has become Undersecretary of Defense for Research and Engineering. He speaks here, though, from the point of view of industry, based on a 23-year career at TRW seeing the C'I business from the viewpoint of one of the west coast's principal suppliers of military systems to the Armed Services. Visitors during Dr. DeLauer's presentation, and participants in what became an energetic three- (four-, five-) way discussion, were Robert R. Everett, President of the MITRE Corporation, and MITRE's Chief Management Scientist, Dr. Norman Waks.

C'I and the Commander: Responsibility and Accountability
— John H. Cushman

We have been hearing of technological miracles, and of the need to straighten out the administrative and procurement processes. General Cushman has spent his career as a commander and staff officer, culminating in major commands in Vietnam and Korea, as well as stateside command of the Army's Combined Arms Center and a tour as Commandant of the Command and General Staff College. He tells us what C'I looks like from the viewpoint of the hierarchy responsible for doing the job to which those technological and operational miracles are intended to contribute.

Funding C'I
— Charles W. Snodgrass

During his 15-year career Charles Snodgrass has moved from the Office of Management and Budget through the congressional staff to a cabinet-level office, gaining a view of the Federal budgetary process which is both broad and deep. During that time he has been associated with many aspects of C'I acquisition, including a successful strategy to protect Air Force interests in defeating an automatic data processing bill in the Senate, and development of means of Congressional oversight of the US intelligence community during his years as a staff assistant to the House Appropriations Committee's Defense Subcommittee. Out of his sometimes controversial experience with Federal bread-and-butter issues, he gives us a behind-the-scenes tour of what is involved in managing funding programs through the approval process.

The Uses of Intelligence
— David C. Richardson

Admiral Richardson spent his career in the Navy in a variety of command and staff positions, including command of the U.S. Sixth Fleet in the Mediterranean and deputy command of the Pacific Fleet. Since his retirement he has been acting as a consultant in electronic technology applications, serving on the Defense Intelligence Review Panel, several panels of the Defense Science Board, the Navy Space Panel of the National Academy of Sciences, and the C'I panel of the Naval Research Advisory Committee. So his viewpoint combines the field commander's perspective of tactical warfare with the outlook of someone engaged in prodding Washington people into doing the right thing.
Congress and CI
— Charles Rose

Representative Rose enlarges our understanding of the Congressional viewpoint from the perspective of a Congressman interested in information technologies. He is Chairman of the Policy Group on Information and Computers, active in computer and television service to the House as a member of the House Administration Committee, and of special interest to us, he is Chairman of the Subcommittee on Oversight and Evaluation of the House Permanent Select Committee on Intelligence. He covers aspects of the intelligence community's use of automatic data processing, the CI interface and its relationship to organizational arrangements within the Defense Department, and the role of Congressional oversight of intelligence.

Issues in Intelligence
— B.R. Inman

The single speaker among the previous year's guests who rejoined us in 1981, Admiral Inman had just been appointed to his new position after serving jointly as Director of the National Security Agency and Chief of the Central Security Service. He chose to skirt what he called the "personal memoir" of the previous year in favor of a discussion of the principles and problems of intelligence, particularly as they relate to command and control, and some of the central issues facing intelligence today.
<table>
<thead>
<tr>
<th>ACO</th>
<th>Administrative Contracting Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADP</td>
<td>automated data processing</td>
</tr>
</tbody>
</table>
| AEGIS     | Air Force: a predecessor of JTIDS program  
Navy: surface-borne electronic warfare system |
| AFCEA     | Armed Forces Communication Electronic Association |
| AFSC      | Air Force Systems Command          |
| ARMAC     | Army Materiel Acquisition Study    |
| AT&T      | American Telephone and Telegraph Co. |
| AUTODIN   | Automatic Digital Network          |
| AUTOSEVOCOM | Automatic Secure Voice Communications System |
| BETA      | Battlefield Exploitation and Target Acquisition System |
| CDRL      | Contract Data Requirements List. Specifies deliverable data under a contract. |
| CEO       | Chief Executive Officer            |
| CEWI      | combat electronic warfare intelligence |
| CINCPAC   | Commander-in-Chief, Pacific        |
| CNO       | Chief of Naval Operations          |
| COC       | Command Operations Center          |
| COMSEC    | communications security            |
| CI        | command, control, communications and intelligence |
| DAR       | Department of the Army             |
| DARCOM    | US Army R&D organization, Fort Monmouth, NJ |
| DCA       | Defense Communications Agency      |
| DDR&E     | Director, Defense Research and Engineering (now Undersecretary of Defense Research & Engineering) |
| DMZ       | Demilitarized Zone                 |
| DOD       | Department of Defense              |
| DSB       | Defense Science Board              |
| EDS       | Electronic Data Systems Corporation |
| EIA       | Electronic Industries Association  |
| ESS       | Electronic Switching System        |
| FLTSAT    | US Navy Fleet Satellite Communications System |
| HUD       | Department of Housing and Urban Development |
| HUMINT    | human intelligence (data collected by or from human sources) |
| ICBM      | intercontinental ballistic missile  |
| IFF       | identification, friend or foe       |
IOC  initial (or interim) operational capability
IR   industrial relations (also infrared)
JCS  Joint Chiefs of Staff
LANTCOM  Atlantic Command
LEASESAT  leased satellite communications facilities
LIFO  last in, first out
LRIP  low rate initial production
LSI  large scale integration
LST  landing craft
MBA  Master of Business Administration
MEGO  "my eyes glaze over"
MIFASS  US Marine Corps artillery fire and tactical air control system
MIL-STD  military standard
MOPS  mega-operations per second
MRASM  medium-range air-to-surface missile
MTBF  mean time between failures
NASA  National Aeronautics and Space Administration
NATO  North Atlantic Treaty Organization
NORAD  North American Air Defense Command
NSA  National Security Agency
NSC  National Security Council
OMB  Office of Management and Budget
PABX  Private Automatic Branch Exchange
PFIAB  President's Foreign Intelligence Advisory Board
PSAC  President's Science Advisory Committee
PTT  postal, telephone and telegraph agencies
P&L  profit and loss
QRC  quick response capability
RADCOM  Research and Development Command
RAF  Royal Air Force (United Kingdom)
RCA  Radio Corporation of America
RDF  rapid deployment force
RDJTF  Rapid Deployment Joint Task Force
ROK  Republic of Korea
R&D  research and development
SAC  Strategic Air Command
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEC</td>
<td>Securities and Exchange Commission</td>
</tr>
<tr>
<td>SECDEF</td>
<td>Secretary of Defense</td>
</tr>
<tr>
<td>SPO</td>
<td>System Program Office</td>
</tr>
<tr>
<td>SSG</td>
<td>Space Systems Group</td>
</tr>
<tr>
<td>SW</td>
<td>Software</td>
</tr>
<tr>
<td>TACAMO</td>
<td>&quot;Take Charge And Move Out&quot; — acronym for airborne communications link with strategic submarine force</td>
</tr>
<tr>
<td>TACC</td>
<td>Tactical Air Control Center</td>
</tr>
<tr>
<td>TACFIRE</td>
<td>US Army tactical fire control system</td>
</tr>
<tr>
<td>TASES</td>
<td>Tactical Airborne Signal Exploitation System</td>
</tr>
<tr>
<td>TOC</td>
<td>Tactical Operations Center</td>
</tr>
<tr>
<td>USAFE</td>
<td>Headquarters, US Air Force Europe</td>
</tr>
<tr>
<td>USDR&amp;E</td>
<td>Undersecretary of Defense for Research and Engineering</td>
</tr>
<tr>
<td>VLSI</td>
<td>very large scale integration</td>
</tr>
<tr>
<td>VHSIC</td>
<td>very high speed integrated circuit</td>
</tr>
<tr>
<td>WWMCCS</td>
<td>World Wide Military Command and Control System</td>
</tr>
</tbody>
</table>