Incidental Paper

Seminar on Command, Control, Communications and Intelligence

Guest Presentations — Spring 1980:

William E. Colby	**Lee Paschall**
B. R. Inman	**Robert Rosenberg**
William Odom	**Raymond Tate**
Lionel Olmer	**A. K. Wolgast**

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

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December 1980 I-80-6

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

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

Printing 5

April 1985

PROGRAM ON INFORMATION RESOURCES POLICY

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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 E. Colby, B. R. Inman, William Odom, Lionel Olmer, Lee Paschall, Robert Rosenberg, Raymond Tate and A. K. Wolgast.

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, assisted by Anne Erickson, enthusiastically applied their 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. Frances Jonuskis, Dorothy Statkus and Barbara Vachon 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

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Preface

On August 11, 1980 the New York Times reported that President Carter had issued three Presidential Directives (PDs 53, 58 and 59) calling "for the study of several approaches to coping with a nuclear attack:

- Hardening command centers and communications posts by placing them underground or protecting them with concrete.
- Dispersing communications networks and making them redundant so that messages could continue to be sent after critical equipment was knocked out.
- Improving warning and evacuation techniques".

These concrete provisions apparently reflect heightened government attention to the nation's "nervous system", namely its command, control, communications and intelligence capabilities, relative to its "muscle", i.e., its weapons and the means for emplacing and using them.

Detailed elsewhere* is the broad significance of information resources as "social nervous systems", including their role in national and international security and their relation to "muscles". The Program on Information Resources Policy has focused attention on the organizing role of information resources in government and business through a graduate course on "Command, Control, Communications and Intelligence (C^3I) in Government and Business".

This course was first offered at Harvard's Kennedy School of Government in the spring of the 1979-80 academic year. It examined the changes since World War II in the conception, technologies and institutional framework of information resources and the implications of these changes for national security policy and linked domestic policies. The course and related Program research address the relationship between information resources and government policy choices or corporate strategic alternatives. They aim to fill a gap.

When not just relating war stories, most academic or professional approaches to intelligence emphasize political science or international politics but pay scanty attention to managerial, administrative or technological factors. Business schools and practitioners emphasize the techniques and the technicalities of management information systems (MISs), but they pay little attention to mutual influences between these and strategic goals. The Program's ultimate aim is to synthesize the best of both these approaches as well as to carry forward where both leave off.

In 1979-80 the students were exposed not only to faculty, but also to several current or former government officials responsible — through several administrations — for recom-

*Oettinger, Anthony G., "Information Resources: Knowledge and Power in the 21st Century "*Science, 209*, pp 191-198. 4 July 1980.

mending or carrying out decisions of the type reportedly made by President Carter. That students were exposed to only one business representative reflects the gap between the aims of the course and their realization.

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.

Anthony G. Oettinger

Introduction

The presentations and discussions in this volume explore relationships among three key aspects of private or public management:

1. The strategic goals of organizations;
2. The processes that decision makers use both to learn about the "outside world" (intelligence) and also to run and monitor their own organizations (command and control);
3. The technical means for carrying out intelligence, command and control processes in support of the formulation and pursuit of strategic goals.

Although national and international security affairs provide most of the illustrations, with one example drawn from the oil industry, the generic insights offered here should prove useful in managing for the survival and success of any organization.

Command, Control, Communications and Intelligence (C^3I) at the Policy Level — William Odom

Partly through his closeness to the President of the United States, partly by his own nature, General William Odom, Military Assistant to the Assistant to the President for National Security Affairs, has unusual sensitivity to the question of how muscle is related to brain in national affairs, and what happens when command, control, communications and intelligence functions cannot be taken for granted. He speaks about some of the problems he deals with, and about the structure and realities within the government that either help or hinder dealing with those problems.

Worldwide C^3I and Telecommunications — Raymond Tate

Raymond Tate, now a consultant, was formerly Deputy Assistant Secretary of the Navy and Deputy Director of the National Security Agency. He has a unique background that bridges from the environment of the White House basement to the outside world — with vertical integration from the national leadership to the "grunt" in the field. He has weathered a number of national crises, has had experience in both command situations and intelligence, and thus offers a valuable personal context on national affairs.

The Influence of Policy Making on C^3I — Robert Rosenberg

General Rosenberg, now Assistant Air Force Chief of Staff for Studies and Analysis, was at the time he made his presentation Policy Assistant to the Assistant to the President for National Security Affairs. His view of the C^3I elephant is colored by his responsibilities in that position, which shaded toward intelligence. His perspective is thus distinctive, in that he views the field from the vantage of policy making — how it constrains C^3I, and what possibilities it opens up.

C^3I and the National Military Command System
— Lee Paschall

Before retiring from the military General Paschall directed both the Defense Communication Agency and the National Communications System. That mammoth management job gives him a first-hand basis for judging how C^3 is applied in daily reality — political, operational, technical, human. Such a system is ordinarily taken for granted — or cursed — by those without background or experience. The practical experience of its chief is a unique view.

Oil Crisis Management
— A. K. Wolgast

"Pete" Wolgast has held a wide variety of positions in Exxon. As manager of Exxon International's Company's Planning and Analysis Department he speaks with some authority about the fairly elaborate, sophisticated C^3I effort involved in the 1973-74 oil crisis and in the continuing critical petroleum shortage throughout the world.

The Developing Perspective of Intelligence
— William E. Colby

Intelligence clearly is an essential part of the input used by the command and control process. The Central Intelligence Agency is the United States' primary collector and analyst of intelligence on foreign activity. Bill Colby, as former CIA Director, presents the inside view on the problems involved in acquiring intelligence and delivering it in a useful manner for both strategic and tactical decision making.

Managing Intelligence for Effective Use
— B. R. Inman

B. R. Inman, the current Director of the National Security Agency, also doubles as Chief of the Central Security Service. In his discussion, however, he ranges across his background in a variety of intelligence-related positions throughout the governmental structure, and synthesizes that variety of viewpoints. He considers policy goals, constitutional and statutory structures, and comments on the ways in which institutional opportunities and budgetary restraints shape information flows and gathering and use of intelligence.

Watchdogging Intelligence
— Lionel Olmer

Though Lionel Olmer is affiliated with Motorola, he speaks here as the former Acting Executive Secretary of the now defunct President's Foreign Intelligence Advisory Board — where a variety of private-sector figures were involved in a quasi-governmental function in an interesting manner that helps illuminate how the government's brain and nervous system work. Olmer is still involved in advising the intelligence community through his position as consultant to the Intelligence Oversight Board that was created by Executive Order in the aftermath of soul-searching over maintaining the community's integrity.

GLOSSARY

ABM	anti-ballistic missile
ACLU	American Civil Liberties Union
ADCOM	Air Defense Command
ADP	automatic data processing
AID	Agency for International Development (Department of State)
AMTORG	Soviet trade organization
AOPEC	Arab Oil Producing and Exporting Companies
ARAMCO	Arabian American Oil Company
AUTODIN	Automatic Digital Network
AUTOSEVOCOM	Automatic Secure Voice Communications network
AUTOVON	Automatic Voice Network
A-10	close air support Air Force fighter
Blue	color associated in exercises with friendly forces
BMEWS	Ballistic Missile Early Warning System
BOQ	Bachelor Officers' Quarters
CIA	Central Intelligence Agency
CINC	Commander in Chief
CNO	Chief of Naval Operations
COMINT	communications intelligence
COMSEC	communications security
CONUS	continental United States
CPX	communications command and control exercise (literally "command post exercise")
CSS	Central Security Service
CYA	cover your ass
C^2	command and control
C^3I	command, control, communications and intelligence
DCA	Defense Communications Agency
DCI	Director of Central Intelligence
DCPA	Defense Civil Preparedness Agency
DCS	Defense Communications System

DDI	Deputy Director – Intelligence (CIA)
DDO	Deputy Director – Operations (CIA)
DDS&T	Deputy Director – Science and Technology (CIA)
DEFCON	Defense Condition
DIA	Defense Intelligence Agency
DIV	division
DMZ	demilitarized zone
DoD	Department of Defense
DR&E	Defense Research and Experimentation
DSCS	a defense communications satellite
EC-121	U.S. Navy airborne warning and control aircraft
EIC	Exxon International Company
ELINT	electronic intelligence
EO	Executive Order
EOP	Executive Office of the President
EUR	Europe
EW	electronic warfare
E-4	airborne command post aircraft
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FEA	Federal Energy Administration
FEMA	Federal Emergency Management Agency
FLTSATCOM	U.S. Navy fleet satellite communications system
F-15	advanced U.S. Air Force fighter aircraft
GAO	General Accounting Office (U.S. Congress)
GRU	Soviet military intelligence organization
GSA	Government Services Administration
HF	high frequency
HUMINT	human intelligence (data collected by or from human sources)
IBM	International Business Machines
ICBM	intercontinental ballistic missile
IEA	International Energy Agency
IEEE	Institute of Electrical and Electronics Engineers, Inc.
IOB	Intelligence Oversight Board
ISA	Assistant Secretary of Defense (International Security Affairs) Office of the Undersecretary for Policy

ITT	International Telephone and Telegraph Corporation
I&R	Bureau of Intelligence and Research (Department of State)
JCS	Joint Chiefs of Staff
JRC	Joint Reconnaissance Center
J2	Deputy Chief for Intelligence
J3	Deputy Chief for Operations
J5	Director for Plans and Policy
KGB	Soviet government intelligence organization
LANT	Atlantic
LEASESAT	leased satellite communications services
MARISAT	maritime satellite communications services
MCI	MCI Telecommunications Corporation
MEECN	Minimum Essential Emergency Communications Network
MENS	Minimum Essential Needs Statement
MIL	military
MIRV	multiple independent reentry vehicle missile
MOU	memorandum of understanding
MX	movable missile system
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NBS	National Bureau of Standards
NCA	National Command Authority
NCS	National Communications System
NEACP	National Emergency Airborne Command Post
NICS	NATO Integrated Communications System
NIE	National Intelligence Estimate
NIO	National Intelligence Office
NKP	North Korean Police
NMCC	National Military Command Center
NORAD	North American Air Defense Command
NRO	National Reconnaissance Office
NSA	National Security Agency
NSAM	National Security Action Memorandum
NSC	National Security Council
NSDM	National Security Decision Memorandum
NSSM	National Security Study Memorandum

NTIA	National Telecommunications and Information Administration, Department of Commerce
NWI	Netherlands West Indies
OEP	Office of Emergency Preparedness
OMB	Office of Management and Budget
OPEC	Organization of Petroleum Exporting Countries
OSD	Office of the Secretary of Defense
OSTP	Office of Science and Technology Policy
OTP	Office of Telecommunications Policy
PAC	Pacific
PD	Presidential Directive
PFIAB	President's Foreign Intelligence Advisory Board
PPBS	Planning, Programming and Budgeting System
PRC	Policy Review Committee
PRM	Presidential Review Memorandum
PTT	postal, telephone and telegraph organizations
RCA	Radio Corporation of America
Red	color associated in exercises with enemy forces
RSIOP	Russian (Soviet) SIOP
R&D	research and development
SAC	Strategic Air Command
SAGE	Semi-Automatic Ground Environment air defense system
SALT	Strategic Arms Limitations Talks (or Treaty)
SAR	Selected Acquisition Report
SCC	Special Coordinating Committee
SHF	super high frequency
SIGINT	signals intelligence
SIOP	Single (in some contexts Strategic) Integrated Operations Plan
SLBM	sea-launched ballistic missile
SOD	Supply Operations Division
SPT	support
SR-71	strategic reconnaissance aircraft
S2	Intelligence staff
S3	Operations staff
TACAMO	airborne command post for the ballistic missile submarines
TCCP	Telecommunications Command and Control Program

TOD	Transportation Operations Division
TRW	TRW, Inc.
UFO	unidentified flying object
UHF	ultra high frequency
U.K.	United Kingdom
UN	United Nations
USSR	Union of Soviet Socialist Republics
U-2	high-altitude U.S. reconnaissance aircraft
VHF	very high frequency
VLF	very low frequency
VOR	VHF Omnidirectional Range
WWMCCS	World Wide Military Command and Control System