

Incidental Paper

**Seminar on Command, Control,
Communications, and Intelligence**

Guest Presentations, Spring 1989:

Stuart E. Johnson, John F. Magee,
John T. Myers, Charles A. Zraket,
James M. Fox, David Y. McManis,
Robert T. Herres

**Program on Information
Resources Policy**

Harvard University
Center for Information Policy Research
Cambridge, Massachusetts

An incidental paper of the Program on Information
Resources Policy

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Project Director:

John F. McLaughlin

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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 from MITRE's Publications and Graphics Department and Word Processing Center.

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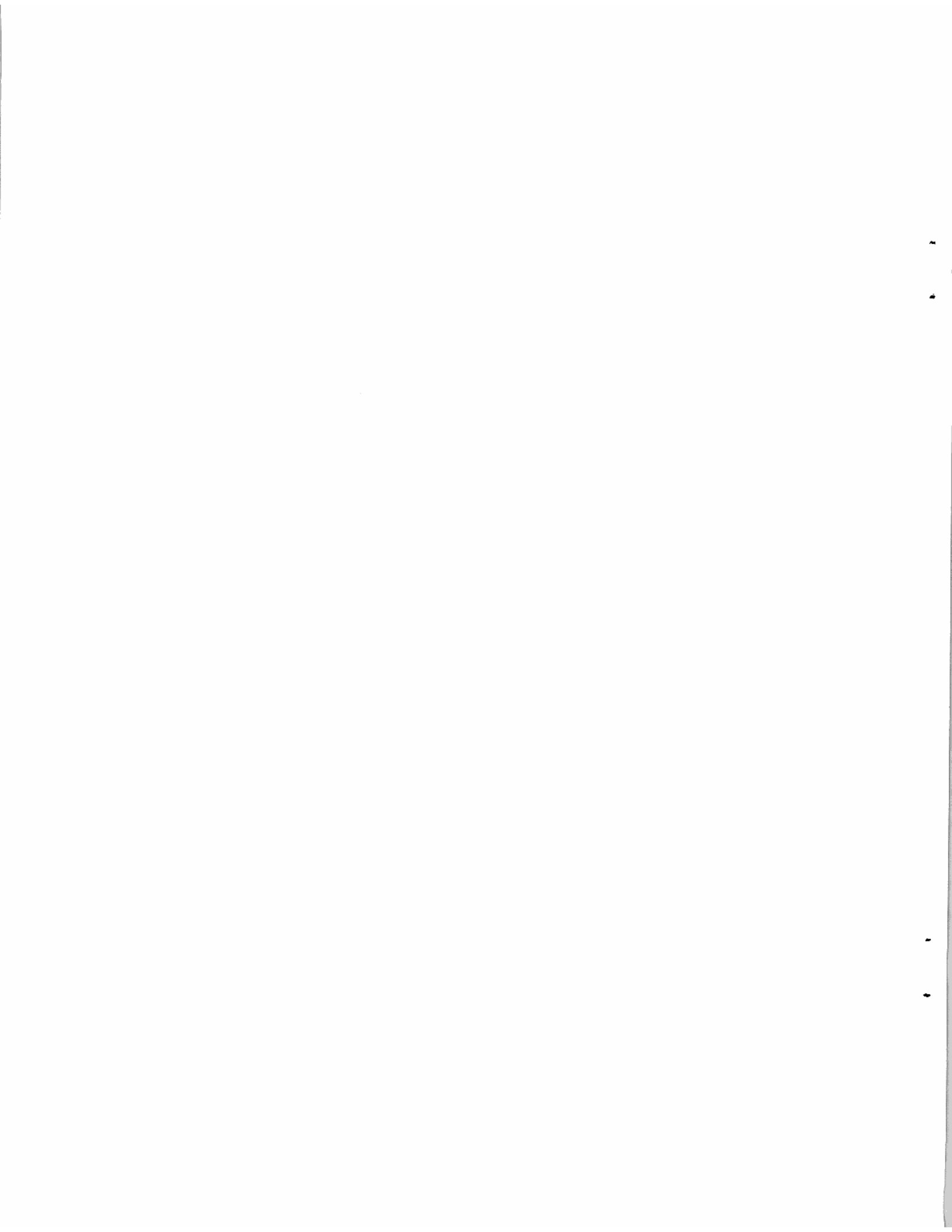
The responsibility for any sins of omission or commission nonetheless remains entirely ours.

John F. McLaughlin
Anthony G. Oettinger

Introduction

The papers in this volume are lightly edited transcripts of 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. All guests made their presentations in open forum, forewarned that neither classified nor proprietary matters are appropriate in a university classroom.

The central theme of the seminar, as in previous years, was the manner in which institutions structure intelligence, command and control activities to serve as their organizational nervous systems. Each of our speakers addressed some aspect of how organizations gather and use information in order to survive and prosper in a hostile world.



Proceedings of the Harvard Seminar on Intelligence, Command, and Control

John F. Kennedy School of Government
Harvard University

Anthony G. Oettinger, Professor of Information Resources Policy, and John F. McLaughlin, Executive Director of the Program on Information Resources Policy, have had a continuing interest in the ways in which institutions draw on systems of people, policies, and technologies to gather and use information for survival and growth. Since 1980 their graduate seminar on intelligence, command, and control has explored this topic with a series of guest speakers from military organizations, civil government, and businesses. While the guest speakers tend to be practitioners of the decision-making process, some are theoreticians who attempt to see patterns in the chaos of day-to-day crises. Taken as a whole, the eight-volume series chronicles the recent history of this field.

The following descriptions of previous volumes identify the speakers' roles at the time of their presentations.

Guest Presentations, Spring 1988 [176 pages; March 1989/Incidental Paper: I-89-1]

Speakers in this series addressed a variety of topics, but two themes predominated. The first of these was the reorganization of the U.S. Department of Defense in accordance with the Goldwater-Nichols Reorganization Act of 1986. The second major theme was the role of Special Operations Forces and Low Intensity Conflict (SOF/LIC) in defense planning and organization.

Frank J. Breth, Brigadier General, USMC, Director of C⁴I² Department/Director of Intelligence: "Getting in Front of C⁴I² Problems."

Ruth M. Davis, President, Pymatuning Group, formerly an Assistant Secretary of Energy and Deputy Under Secretary of Defense: "Putting C³I Development in a Strategic and Operational Context."

Robert T. Herres, General, USAF, and Vice Chairman, Joint Chiefs of Staff: "Strengthening the Chairman of the Joint Chiefs of Staff."

Rae M. Huffstutler, Deputy Director for Administration, formerly Director, National Photographic Interpretation Center, Central Intelligence Agency: "Intelligence Sources and Their Applications."

Robert C. Kingston, General, USA, (ret.), formerly Commander-in-Chief, United States Central Command: "The Special Operations Command: Structure and Responsibilities."

James R. Locher, III, Professional Staff Member, Senate Committee on Armed Forces: "Special Operations and Low Intensity Conflict: A Congressional Perspective."

Earl F. Lockwood, President and Chief Executive Officer, Betac Corporation: "The Evolution of Special Operations Forces."

John F. McLaughlin, Executive Director, Program on Information Resources Policy, Harvard University: "The Rise in Low Intensity Conflict: A Theory."

Richard L. Thornburgh, Director, Institute of Politics, Kennedy School of Government, Harvard University, formerly Governor of Pennsylvania: "Three Mile Island: A Case Study in C³I for Crisis Management."

Jerry O. Tuttle, Vice Admiral, USN, and Director, Command, control and Communications Organization of the Joint Chiefs of Staff (J-6): "Tailoring C³I Systems to Military Users."

Guest Presentations, Spring 1987 [192 pages; May 1988/Incidental Paper: I-88-1]

Speakers explored the information requirements of national, military, and business organizations at a time of technological and organizational change in the military and civilian worlds. The reorganization of the U.S. Department of Defense in accordance with the Goldwater-Nichols Defense Reorganization Act of 1986 was the occasion for analysis and re-evaluation.

Archie D. Barrett, professional staff, House Armed Services Committee, formerly military staff assistant to the Executive Secretary of the Defense Organization Study: "Defense Reorganization: A View from the House."

Robert L. DeGross, provost, Defense Intelligence College: "Teaching Intelligence."

Fred R. Demech, Jr., captain, U.S. Navy, formerly executive director, the President's Foreign Intelligence Advisory Board: "Making Intelligence Better."

Greg Foster, senior fellow, Institute for National Strategic Studies, National Defense University: "The National Defense University's Command and Control Program."

James R. Locher, III, professional staff, Subcommittee on Projection Forces and Regional Defense, Senate Committee on Armed Services: "Defense Reorganization: A View from the Senate."

George C. Lodge, professor, Harvard Graduate School of Business Administration, formerly director of information, U.S. Department of Labor and Assistant Secretary of Labor for International Affairs: "Ideology and National Competitiveness."

Eugene B. Lotochinski, vice president, market development, Northern Telecom Inc.: "The Information Management Marketplace."

Rodney B. McDaniel, executive secretary, National Security Council: "C³I: A National Security Council Perspective."

Michael J. Zak, vice president, marketing, Concord Communications, Inc.: "Coming of Age in C³I."

Guest Presentations, Spring 1986. [168 pages; February 1987/Incidental Paper: I-87-1]

The speakers this year addressed a variety of topics, with two predominant themes. The first was the manner in which organizations—military, diplomatic, business—obtain and use intelligence. The second theme was how organizations protect information from the growing threat of electronic interception.

Robert Conley, formerly Deputy Assistant Secretary for Advanced Technology and Analysis and Acting Assistant Secretary for Electronic Systems and Information Technology, Department of the Treasury: "Data Security in the Information Age."

Harold Daniels, Deputy Director for Information Security at the National Security Agency, formerly Assistant Deputy Director for Communications Security: "The Role of the National Security Agency in Command, Control and Communications."

John Grimes, Director of National Security Telecommunications and Director of Defense Programs (C3) of the National Security Council: "Information Technologies and Multinational Corporations."

Bobby R. Inman, president and chief executive officer, Microelectronics and Computer Technology Corporation, formerly Director of the Office of Naval Intelligence, Director of the National Security Agency, and Deputy Director of Central Intelligence: "Technological Innovation and the Cost of Change."

Richard J. Levine, editorial director, data base publishing, Dow Jones & Company: "Data Base Publishing for Business Intelligence."

Mark Lowenthal, acting director, Office of Strategic Forces Analysis, Bureau of Intelligence and Research, Department of State: "The Quest for 'Good' Intelligence."

Clarence E. McKnight, Director for Command, Control, and Communications Systems, Organization of the Joint Chiefs of Staff, formerly Commanding General, U.S. Army Communications Command: "C3I Systems at the Joint Level."

Lionel Olmer, formerly Under Secretary for International Trade, U.S. Department of Commerce, heading the International Trade Administration; currently member of Paul, Weiss, Rifkind, Wharton & Garrison, an international law firm: "Intelligence Techniques for the American Business Community."

Guest Presentations, Spring 1985. [180 pages; April 1986/Incidental Paper: I-86-1]

These presentations examined the link between defense organization and the efficacy of command, control, communications and intelligence, within the context of current debate over reorganization of the Joint Chiefs of Staff.

Archie D. Barrett, professional staff, House Armed Services Committee, formerly military staff assistant to the Executive Secretary of the Defense Organization Study: "Politics and the Military—The Climate for Reform."

Richard D. DeLauer, president, Orion Group Limited, formerly Under Secretary of Defense for Research and Engineering: "A Consultant's View."

Lincoln Faurer, formerly Director of the National Security Agency and Chief, Central Security Service, Fort Meade, Maryland: "The Role of Intelligence Within C3I."

Robert T. Herres, Commander in Chief, unified U.S. Space Command, Aerospace Defense Command, and North American Aerospace Defense Command, and Commander of the Air Force Space Command: "A CINC's View of Defense Organization."

Robert Hilton, consultant specializing in national and international security affairs and political risk analysis; formerly Vice Director for Operations, Joint Chiefs of Staff: "Roles of the Joint Chiefs of Staff in Crisis Management."

Samuel P. Huntington, director, Center for International Affairs, Harvard University, formerly Coordinator of Security Planning for the National Security Council: "Centralization of Authority in Defense Organizations."

Donald Latham, Assistant Secretary of Defense, C3I: "A View from Inside OSD."

Richard G. Stilwell, chairman, Department of Defense Security Review Commission; formerly Deputy Under Secretary of Defense for Policy: "Structure and Mechanisms for Command and Control."

Guest Presentations, Spring 1984. [125 pages; February 1985/Incidental Paper: I-85-2]
These presentations explored the roles of communication, information, and warning systems in peacekeeping, crisis management, and economic security.

Richard S. Beal, until his death in 1984, Special Assistant to the President for National Security Affairs and Senior Director for Crisis Management Systems and Planning: "Decision Making, Crisis Management, Information and Technology."

Stuart E. Branch, Deputy Assistant Secretary for Communications in the Department of State and member, National Communications System and U.S. Communications Security Board of the National Security Council: "C3I and Crisis Management."

Leo Cherne, executive director, Research Institute of America: "Television News and the National Interest."

Hubert L. Kertz, formerly president and managing director, American Bell International, Inc., with **Anthony G. Oettinger**: "With AT&T in Iran."

David McManis, National Intelligence Officer for Warning and Director, National Warning Staff: "Warning as a Peacekeeping Mechanism."

Robert A. Rosenberg, Vice Commander in Chief for the North American Aerospace Defense Command and Assistant Vice Commander for the U.S. Air Force Space Command: "Strategic Defense: A Challenge for C3I."

James W. Stansberry, formerly Commander of the Air Force Electronic Systems Division: "Cost-Effective Rearmament."

W. Scott Thompson, director of programs for the American Security Council Foundation and president, Strategic Research Associates: "U.S. - U.S.S.R. Information Competition."

(The seminar was not held during 1983.)

Guest Presentations, Spring 1982. [181 pages; December 1982/Incidental Paper: I-82-3]
This series of C3I sessions emphasized national security issues, exploring policy and planning as well as procurement and implementation perspectives. Guests discussed not only the impact within the defense community of rapidly expanding technology but also the public consequences—national and international—of intelligence gathering and use.

Richard D. DeLauer, Under Secretary of Defense for Research and Engineering: "The View from the Hot Seat."

Hillman Dickinson, Director for Command, Control and Communications Systems, Joint Chiefs of Staff: "Planning for Defense-Wide Command and Control."

Gerald P. Dinneen, corporate vice president, Science and Technology, Honeywell, Inc., formerly Assistant Secretary of Defense for Communications, Command, and Control, and Intelligence: "C3 Priorities."

Richard H. Ellis, formerly commander in chief, Strategic Air Command: "Strategic Connectivity."

R. Thomas Marsh, commander, Air Force Systems Command: "Air Force C3I Systems."

Thomas H. McMullen, deputy commander, Tactical Air Command: "A Tactical Commander's View of C3I."

William G. Miller, associate dean and professor of international politics, Fletcher School of Law and Diplomacy, Tufts University: "Foreign Affairs, Diplomacy and Intelligence."

Richard G. Stilwell, Deputy Under Secretary of Defense for Policy: "Policy and National Command."

Guest Presentations, Spring 1981. [214 pages; December 1981/Incidental Paper: I-81-9]

The perspective in this volume encompasses the Congress, combatant commands, defense contractors, and technological innovators. As part of an ongoing open forum on C3I, the sessions brought together the intersecting vantage points of industrial suppliers and innovators, government funders and decision makers, and principals in military intelligence.

William O. Baker, formerly chairman, Bell Laboratories, Inc.: "The Convergence of C3I Techniques and Technology."

John H. Cushman, lieutenant general, U.S. Army, (ret.), management consultant, : "C3I and the Commander: Responsibility and Accountability."

Richard D. DeLauer, executive vice president, TRW, Inc.: "A Major Contractor's View of C3I."

B.R. Inman, Deputy Director of Central Intelligence: "Issues in Intelligence."

James M. Osborne, formerly senior vice president, E-Systems, Inc.: "Meeting Military Needs for Intelligence Systems."

David C. Richardson, vice admiral, U.S. Navy (ret.); consultant, Defense Intelligence Review Panel, the Defense Science Board, and other panels: "The Uses of Intelligence."

Charles Rose, U.S. representative; chairman, Policy Group on Information and Computers: "Congress and C3I."

Charles W. Snodgrass, vice president, Financial Planning and Management, Electronic Data Systems Corp., formerly assistant secretary of the Air Force for financial management: "Funding C3I."

Guest Presentations, Spring 1980. [183 pages; December 1980/Incidental Paper: I-80-6]
These first presentations in the series described C3I principally from the perspective of national policymaking in the executive branch.

William E. Colby, counsel, Reid & Priest, formerly Director of Central Intelligence: "The Developing Perspective of Intelligence."

B.R. Inman, director, National Security Agency and chief, Central Security Service: "Managing Intelligence for Effective Use."

William Odom, military assistant to the President's assistant for National Security Affairs: "C3I and Telecommunications at the Policy Level."

Lionel Olmer, Director of International Programs, Morotola, Inc; formerly acting executive secretary, President's Foreign Intelligence Advisory Board: "Watchdogging Intelligence."

Lee Paschall, consultant, formerly director, Defense Communications Agency and manager, National Communications System: "C3I and the National Military Command System."

Robert A. Rosenberg, policy assistant to the President for National Security Affairs, National Security Council Staff: "The Influence of Policy Making on C3I."

Raymond Tate, formerly Deputy Assistant Secretary of the Navy and Deputy Director of the National Security Agency: "Worldwide C3I and Telecommunications."

A.K. Wolgast, manager, Planning and Analysis Dept., EXXON International: "Oil Crisis Management."

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Glossary

ACDA	Arms Control and Disarmament Agency	CPU	central processing unit
AFCEA	Armed Forces Communications and Electronics Association	DAB	Defense Acquisition Board
AI	artificial intelligence	DARPA	Defense Advanced Research Projects Agency
AMIS	Air Force Management Information System	DASD	direct access storage device
AMPE	automated message processing equipment	DCA	Defense Communications Agency
AMRAAM	advanced medium-range air-to-air missile	DCI	Director of Central Intelligence
ASD	Assistant Secretary of Defense	DDR&E	Deputy Director for Research and Engineering
ATF	advanced tactical fighter	DEA	Drug Enforcement Administration
AUTODIN	Automatic Digital Network	DECCO	Defense Contracting Organization
AWACS	Airborne Command and Control System	DIA	Defense Intelligence Agency
BATF	Bureau of Alcohol, Tobacco, and Firearms	DISNET	Defense Information System Network
CCEP	Commercial COMSEC Endorsement Program	DLA	Defense Logistics Agency
CCITT	Comité Consultatif International Télégraphique et Téléphonique — International Radio Consultative Committee	DMS	Defense Message System
CENTCOM	U.S. Central Command	DOD	Department of Defense
CIA	Central Intelligence Agency	DRB	Defense Resources Board
CINC	commander in chief (of a unified or specified command)	DSARC	Defense System Acquisition Resource Council
CINCCENT	Commander in Chief, U.S. Central Command	DSCS	Defense Satellite Communication System
CINCLANT	Commander in Chief, U.S. Atlantic Command	EAM	emergency action message
CINCNORAD	Commander in Chief, North American Aerospace Defense Command	ELV	expendable launch vehicle
CINCPAC	Commander in Chief, U.S. Pacific Command	EOC	emergency operations center (FBI)
CINCSAC	Commander in Chief, Strategic Air Command	EUCOM	U.S. European Command
CINCSpace	Commander in Chief, U.S. Space Command	FAA	Federal Aviation Administration
CINCTrans	Commander in Chief, U.S. Transportation Command	FBI	Federal Bureau of Investigation
CNO	Chief of Naval Operations	GAO	General Accounting Office
COMSEC	communications security	GOSIP	Government Open Systems Interconnect Profile
COMSTA	communications station	GPS	Global Positioning System
		HF	high frequency
		ICBM	intercontinental ballistic missile
		ICS	intelligence community staff
		INF	Intermediate Nuclear Forces
		IR	infrared
		I&W	indications and warning

JCS	Joint Chiefs of Staff	PTT	Postal, Telephone, and Telegraph service
Joint STARS	Joint Surveillance Target Attack Radar System	RF	radio frequency
JPAM	joint program assessment memorandum	RIF	reduction in force
JROC	Joint Requirements Oversight Council	ROE	rules of engagement
JTF	joint task force	SAC	special agent in charge (FBI)
JTIDS	Joint Tactical Information Distribution System	SAC	Strategic Air Command
LAPD	Los Angeles Police Department	SACEUR	Supreme Allied Commander, Europe
LHX	Light Helicopter, Experimental (Army)	SACLANT	Supreme Allied Commander, Atlantic
MCEB	Military Communications and Electronics Board	SAG	scientific advisory group
MFA	major focus area	SAGA	Studies and Analysis Gaming Agency
MSE	mobile subscriber equipment	SALT	Strategic Arms Limitation Treaty
NASA	National Aeronautics and Space Administration	SCINET	Sensitive Compartmented Information Network
NATO	North Atlantic Treaty Organization	SDI	Strategic Defense Initiative
NCA	National Command Authority	SINCGARS	Single-Channel Ground and Air Radio Systems
NCO	noncommissioned officer	SPRAA	Strategic Plans and Resource Analysis Agency
NORAD	North American Aerospace Defense Command	START	Strategic Arms Reduction Talks
NSA	National Security Agency	STU	secure telephone unit
NSC	National Security Council	TCC	telecommunications center
NTM	national technical means	TQM	total quality management
O&M	operations and maintenance	TRADOC	U.S. Training and Doctrine Command
OD	organizational development	TRI-TAC	Tri-Service Tactical Communications
OE	organizational effectiveness	UHF	ultra high frequency
OSD	Office of the Secretary of Defense	USD	Under Secretary of Defense
PAL	permissive action link	VHF	very high frequency
PA&E	Program Acquisition and Evaluation	VHSIC	very high-speed integrated circuit
PDR	program design review	WHCA	White House Communications Agency
PM	project manager	WWMCCS	Worldwide Military Command and Control System
PME	professional military education		
PO	project officer		
POM	Program Objective Memorandum		
PPBS	Planning, Programming, and Budgeting System (DOD)		
PRC	People's Republic of China		