

Incidental Paper

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

**Guest Presentations, Spring 1994:**

Thomas P. Quinn, Lewis S. Wallace, Jr.,  
John E. Rothrock, John A. Leide,  
Keith R. Hall, James D. Davis,  
Albert Edmonds, Richard L. Layman,  
William R. Clontz, Richard T. Reynolds

**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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and Control**

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Project Director:  
Anthony G. Oettinger

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

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 smoothed. Substance has, as far as possible, been left unaltered. All guests made their presentations in an open forum, forewarned that neither classified nor proprietary matters are appropriate in a university classroom.

Much of the 1994 seminar series focused on new demands being placed on the United States and the new world order resulting from dramatic changes in the international geopolitical picture in recent years—breakup of the former Soviet Union and continued turbulence in that regime, a volatile peace in Southwest Asia following the Persian Gulf War and new conflicts that threaten global peace and stability. Many of the speakers emphasized new threats to U.S. national security caused by the changing global geopolitical landscape. The promise of emerging technologies in responding to these threats served as a central underlying theme, while each speaker highlighted final concerns that are forcing not only widesweeping organizational changes in the U.S. defense establishment, but also a significant shift in the conceptual framework of DoD's doctrine and the strategy of National Command Authorities that drives U.S. national security policy. Each emphasized the ever-increasing importance of good intelligence and of effective command and control and interoperability of forces in the success or failure of future armed conflict.

## 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, has 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 his 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 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 1993.*** [164 pages; August 1994/Incidental Paper: I-94-5]

This year's seminar series focused on new demands being placed on the United States and the new world order resulting from dramatic changes in the international geopolitical picture in recent years. Many speakers emphasized new threats to U.S. national security caused by the changing global geopolitical landscape and each emphasized the ever-increasing importance of effective command and control and interoperability of forces in the success or failure of future armed conflict.

**Randall M. Fort**, Deputy Assistant Secretary for Functional Analysis and Research, Bureau of Intelligence and Research, Department of State: "The Role of Intelligence in Economic and Other Crises."

**Barry M. Horowitz**, President and CEO, MITRE Corporation: "The Emergence of Data Systems: Cost and Technical Change in Military Systems."

**Walter Jajko**, Director, Special Advisory Staff, Office of the Under Secretary for Policy, Department of Defense: "Defense Intelligence: Adaptability, Character, and Capability."

**Major General Gary W. O'Shaughnessy**, Commander, Air Force Intelligence Command and Director, Joint Electronic Warfare Center: "The Structure and Missions of the Air Force Intelligence Command."

**Read Admiral Edward D. Sheaffer**, Director of Naval Intelligence: "Naval Intelligence in the Post-Cold War Era."

**Nina J. Stewart**, Executive Assistant to the Director of Central Intelligence: "Infrastructure for Security."

**Vice Admiral Jerry O. Tuttle**, Director of Space and Electronic Warfare: "The Copernican Pull."

**Michelle K. Van Cleave, Esq.**, Assistant Director for National Security Affairs and General Counsel, White House Office of Science and Technology Policy: "Intelligence: The Science and Technology Connection."

***Guest Presentations, Spring 1992.*** [186 pages; August 1994/Incidental Paper: I-94-4]

This year's seminar series focused on evolving threats to U.S. national security as Congress and National Command Authorities struggled to redefine America's global geopolitical interests and

the organizational changes needed to meet them. Several speakers emphasized the stakes for new and advanced technologies in this national debate.

**Roscoe M. Cougill**, Director, Command, Control, Communications and Computer Systems Directorate: "C<sup>3</sup> During Desert Shield and Desert Storm."

**Richard L. Haver**, Assistant to the Secretary of Defense for Intelligence Policy: "The Process of Reorganization within the U.S. Intelligence Community."

**James J. Hearn**, Deputy Director for Information Systems Security, NSA: "Information Systems Security."

**Frank B. Horton**, Deputy Chief of Staff/Intelligence, HQ Strategic Air Command: "Command Plan and C<sup>3</sup>I."

**Richard J. Kerr**, Deputy Director of Central Intelligence: "The Evolution of the U.S. Intelligence System in the Post-Soviet Era."

**Albert R. Lubarsky**, Director, C<sup>3</sup>I for Counternarcotics, Department of Defense: "C<sup>3</sup>I in Transition."

**Richard C. Macke**, Director, Command, Control, Communications and Computer Systems, The Joint Staff: "C<sup>4</sup>I for the Warrior."

**John M. McConnell**, Director for Joint Staff Intelligence, J2: "The Role of the Current Intelligence Officer for the Chairman of the Joint Chiefs of Staff."

***Guest Presentations, Spring 1991.*** [208 pages; February 1993/Incidental Paper: I-93-1]

This year's seminar series stressed the role of intelligence in organizations. A number of speakers addressed the challenges confronting the U.S. intelligence apparatus in the Post-Cold War political environment.

**Lt. Col. C. Kenneth Allard**, USA, Special Assistant to the Under Secretary of Defense (Acquisition): "Thinking About Command and Control."

**Duane P. Andrews**, Assistant Secretary of Defense (C<sup>3</sup>I): "Restructuring the World of C<sup>3</sup>I."  
**John H. Cushman, Sr.**, Lt. Gen. USA (retired): "Desert Shield/Desert Storm and the Future of Force Projection."

**Carnes Lord**, Assistant to the Vice President for National Security Affairs: "Bureaucratic Problems in Formulating National Strategy."

**Eugene B. Lotochinski**, Vice President, Marketing, Northern Telecom World Trade: "Global Communications Capabilities for the Banking Industry."

**David Y. McManis**, National Security Agency/CSS representative to DOD: "Technology, Intelligence and Command."

**John M. Ruddy**, Vice President, The MITRE Corporation: "Military Use of Satellite Communications."

**Paul R. Schwartz**, Major General, USA: "Coalition Command and Control in Desert Shield/Desert Storm."

**Charles L. Stiles**, President, Technology and Planning Assoc. Inc.: "The U.S. Sinai Support Mission."

**Joseph S. Toma**, Chief, Special Action Division, Joint Staff J6-A: "C<sup>3</sup>: A View from Inside the Joint Staff."

***Guest Presentations, Spring 1990*** [146 pages; December 1991/Incidental Paper: I-91-3]

This year's seminar series stressed the role of intelligence in organizations. A number of speakers addressed the challenges confronting the U.S. intelligence apparatus in the Post-Cold War political environment.

**Lt. Gen. James Cassity, Jr.**, USAF, Director, Command, Control & Communications (J-6), Joint Chiefs of Staff: "Restructuring Military Policy to Reflect Worldwide Political Changes."

**Kenneth M. Duberstein**, President and CEO of The Duberstein Group, formerly Chief of Staff to President Reagan: "The White House Information Process."

**Thomas K. Latimer**, Staff Director, House Permanent Committee on Intelligence, U.S. House of Representatives: "The Congressional Intelligence Committees."

**James W. Lucas**, Dean, School of Professional Studies, Defense Intelligence College: "The Information Needs of Presidents."

**Gordon Negus**, Executive Director, Defense Intelligence Agency: "Intelligence in Support of U.S. Foreign Policy."

**Vice Admiral W.O. Studeman**, Director, National Security Agency: "The Philosophy of Intelligence."

**Major Gen. C. Norman Wood**, Assistant Chief of Staff/Intelligence, U.S. Air Force: "The Policy Aspect of Intelligence."

**Col. Joseph Zadarecky, II**, Chief, Tactical Command and Control Division, Directorate of Operations, HQ U.S. Air Force: "The Role of the Air Force in U.S. Counternarcotics Policy."

***Guest Presentations, Spring 1989*** [132 pages; August 1990/Incidental Paper: I-90-3]

This year's presentations included continuing assessments of the Defense Reorganization Act of 1986, a look at the impact of new technologies on C<sup>3</sup>I planning and perspectives on intelligence, command and control activities in some civilian domains.

**James M. Fox**, Assistant Director in Charge, New York City, Federal Bureau of Investigation: "Crisis Management at the FBI."

**Robert T. Herres**, General, USAF, and Vice Chairman, Joint Chiefs of Staff: "The Role of the Joint Chiefs After the 1986 Defense Reorganization Act."

**Stuart E. Johnson**, Director, Strategic Concepts Development Center, INSS, National Defense University: "Command and Control Education and Research."

**John F. Magee**, Chairman of the Board, Arthur D. Little, Incorporated: "Some Business Analogies to C<sup>3</sup>I."

**David Y. McManis**, Director, Operations Security Organization, National Security Agency: "National Security and the 'Democratization' of Information."

**John T. Myers**, Lieutenant General, USA, and Director, Defense Communications Agency: "Future Directions for Defense Communications."



**Charles A. Zraket**, President and CEO, The MITRE Corporation: "Four Vital Issues in C<sup>3</sup>I."

*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 C<sup>4</sup>I<sup>2</sup> Department/Director of Intelligence: "Getting in Front of C<sup>4</sup>I<sup>2</sup> Problems."

**Ruth M. Davis**, President, Pymatuning Group, formerly an Assistant Secretary of Energy and Deputy Under Secretary of Defense: "Putting C<sup>3</sup>I 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 C<sup>3</sup>I 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 C<sup>3</sup>I 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: "C<sup>3</sup>I: A National Security Council Perspective."

**Michael J. Zak**, vice president, marketing, Concord Communications, Inc.: "Coming of Age in C<sup>3</sup>I."

***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 (C<sup>3</sup>) 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: "C<sup>3</sup>I 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

ACOM	U.S. Atlantic Command
ACOS	Assistant Chief of Staff
ADM	acquisition decision memorandum
AFIC	Air Force Intelligence Center
AFMIC	Air Force Military Intelligence Center
AID	U.S. Agency for International Development
AIS	automated information system
AO	area of operations
AOC	airlift operations center
ARPA	Advanced Research Projects Agency (for a period, DARPA)
ASAS	All-Source Analysis System (U.S. Army)
ASAT	antisatellite
ASD	Assistant Secretary of Defense
ASTRA	Air Staff training officer
ATGM	antitank guided missile
ATO	air tasking order
BDA	bomb or battle damage assessment
BUR	bottom-up review
C <sup>2</sup> IPS	command and control intelligence processing system (USAF)
C <sup>3</sup> I	command, control, communications and intelligence
CB	citizen's band
CCP	Consolidated Cryptologic Program
CDR	critical design review
CE	communications and electronics
CENTAF	U.S. Air Forces, Central Command
CENTCOM	U.S. Central Command
CEOI	communications-electronics operations instruction
CEP	circular error probable
CIA	Central Intelligence Agency
CINC	commander in chief
CIO	Central Imagery Office
CIP	counterintelligence program
CIPMS	combat intelligence processing message system
CNN	Cable News Network
COCOM	U.S. Coordinating Committee for Exports
CODIB	Community Data Interchange Board
COINS	Community On-line Intelligence Network System
COMINT	communications intelligence
COMSEC	communications security
CONUS	continental United States
COTS	commercial off-the-shelf
CSS	combat support system
CTAPS	Contingency TAC Automated Planning System
DAB	Defense Acquisition Board
DAES	Defense Acquisition Executive Summary
DARPA	Defense Advanced Research Projects Agency (now ARPA)
DART	deployable automatic relay terminal

## Glossary

DASD	Deputy Assistant Secretary of Defense
DCA	Defense Communications Agency, now DISA
DCE	data circuit terminating equipment
DCI	Director of Central Intelligence
DCN	Data Communications Network (DOD)
DDN	Defense Data Network
DIA	Defense Intelligence Agency
DISA	Defense Information Systems Agency
DISN	Defense Information Systems Network
DLA	Defense Logistics Agency
DMI	Director, Military Intelligence (Director, DIA)
DOD	Department of Defense
DOT&E	Director, Operational Test and Evaluation
DPKO	Department of Peacekeeping Operations (U.N.)
DRB	Defense Resources Board
DSP	Defense Satellite Program
DT&E	development test and evaluation
EDM	engineering development model
EHF	extremely high frequency
ELF	extremely low frequency
EUCOM	European Command
EW	electronic warfare
FAA	Federal Aviation Administration
FASTC	Foreign Aerospace Science and Technology Center
FBI	Federal Bureau of Investigation
FCIP	Foreign Counterintelligence Program
FEMA	Federal Emergency Management Agency
FIC	Foreign Intelligence Command
FORSCOM	Forces Command
FRG	Federal Republic of Germany
FRP	Federal Radionavigation Plan
FSTC	Foreign Science and Technology Center (U.S. Army); Federal Software Testing Center
GCCS	Global Command and Control System
GDIP	General Defense Intelligence Program
GPS	Global Positioning System
GSA	General Services Administration
HF	high frequency
HQDA	Headquarters, Department of the Army
HUMINT	human intelligence
I&W	indications and warning
IAS	information access service (AT&T)
ICBM	intercontinental ballistic missile
IIR	integrated intelligence report
IMA	individual mobilization augment
INSCOM	Intelligence and Security Command (U.S. Army)
IPB	intelligence preparation of the battlefield



## Glossary

IR	infrared
IRM	information resources management
ITAC	Intelligence and Threat Analysis Center (Army)
JCS	Joint Chiefs of Staff
JCSE	Joint Communications Support Element
JDISS	Joint Deployment Intelligence Support System
JFACC	Joint Forces Air Component Commander
JFAST	Joint Flow and Analysis System for Transportation
JIC	Joint Intelligence Center
JMCIS	Joint Maritime Command Information System
JOPES	Joint Operations Planning and Execution System
JOTS	Joint Operational Tactical System
JPL	Jet Propulsion Laboratory (Pasadena, CA)
JROC	Joint Requirements Oversight Council
JRTC	Joint Readiness Training Center
JSOC	Joint Special Operations Command
JTAC	Joint Tactical Advisory Center
JTC <sup>3</sup> S	Joint Tactical C <sup>3</sup> System
JTF	Joint Task Force
JTIDS	Joint Tactical Information Distribution System
JTX	joint training exercise
JUDI	Joint Universal Data Interpreter
JWICS	Joint Worldwide Intelligence Communication System
LAM	Louisiana maneuvers
LAN	local area network
LFT&E	live fire test and evaluation
LOCE	limited operational capability, Europe
LRIP	limited rate of initial production
MAGTF	Marine Air-Ground Task Force
MAISRC	Major Automated Information Systems Review Council
MASINT	measurement and signals intelligence
MCDN	MicroCellular Data Network (Ricochet™)
MCEB	Military Communications and Electronics Board
MDAP	Major Defense Acquisition Program
MENS	mission element needs statement
MFP	major force program
MI	military intelligence
MIB	Military Intelligence Board
MIRV	multiple independently targeted reentry vehicles
MIT	Massachusetts Institute of Technology
MLA	multilateral affairs
MLRS	multiple launch rocket system
MLS	multilevel secure
MO	military observer (U.N.)
MOP	memorandum of policy
MOS	military occupational specialty
MPA	military personnel account

## Glossary

MSE	mobile subscriber equipment
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
NCC	National Command Center
NCO	noncommissioned officer
NDU	National Defense University
NESEA	Naval Electronic System Engineering Activity
NFIB	National Foreign Intelligence Board
NFIP	National Foreign Intelligence Program
NGIC	National Ground Intelligence Center
NGO	nongovernmental organization
NII	national information infrastructure
NMJIC	National Military Joint Intelligence Center
NOAA	National Oceanic and Atmospheric Administration
NPIC	National Photographic Interpretation Center
NRAD	Naval Research and Development Center
NSA	National Security Agency
NSC	National Security Council
NSF	National Science Foundation
O&M	operations and maintenance
ODCSINT	Office of the Deputy Chief of Staff for Intelligence
OMB	Office of Management and Budget
ONR	Office of Naval Research
OPR	office of primary responsibility
OPTEMPO	Army unit of counting
OSD	Office of the Secretary of Defense
OSS	operations support system (USN)
OT&E	operational test and evaluation
PA&E	Program Analysis and Budget
PACOM	U.S. Pacific Command
PC	personal computer
PDM	program decision memorandum
PEO	principal executive officer
POL	petroleum, oil, and lubricants
POM	program objectives memorandum
PSN	package switched network
R&D	research and development
RFP	request for proposals
ROC	required operational capability
RPF	Rwandan Patriotic Front
RPG	repetitive pulse generator
S&IA	security and investigative activities
S&M	scheduling and movement
S&TI	scientific and technical intelligence
SACEUR	Supreme Allied Commander, Europe
SACLANT	Supreme Allied Commander, Atlantic

## Glossary

SALT	Strategic Arms Limitation Treaty (or Talks)
SCI	special compartmented intelligence
SHAPE	Supreme Headquarters, Allied Powers, Europe (NATO)
SHF	superhigh frequency
SIDS	satellite imagery dissemination system
SIGINT	signals intelligence
SOCOM	U.S. Special Operations Command
SOF	Special Operations Forces
SOP	standard operating procedure
SORT	system operational readiness test
STACCS	Simplified Tactical Air Command and Control System
START	Strategic Arms Reduction Treaty (or Talks)
STRATCOM	U.S. Strategic Command
STU	secure telephone unit
T&E	test and evaluation
TBM (E)	theater or tactical battle management
TDA	table of distribution allowance
TEMP	test and evaluation master plan
TIARA	tactical intelligence and related activities
TIPFDLE	troop induction plan; force deployment logistics exercise
TLAM	tactical land attack missile
TOE	table of organization and equipment
TQM	total quality management
TRANSCOM	U.S. Transportation Command
TUSA	Third U.S. Army
U&S	unified and specified
UCCS	Unified Command and Control System
UHF	ultrahigh frequency
UNEF	U.N. Emergency Force
UNMOGIP	U.N. Military Observer Group in India and Pakistan
UNOSOM	U.N. Operations, Somalia
UNPROFOR	U.N. Protection Force (Bosnia)
UNTAC	U.N. Transitional Authority in Cambodia
USAFE	U.S. Air Force Europe
USAICS	U.S. Army Intelligence Center and School
USD	Under Secretary of Defense
USFIC	U.S. Force Intelligence Center
USFK	U.S. Forces, Korea
VLF	very low frequency
WAN	wide area network
WIS	WWMCCS Intelligence System
WWMCCS	Worldwide Military Command and Control System

