Incidental Paper

Seminar on Intelligence, Command, and Control

Guest Presentations, Spring 1993:
Barry M. Horowitz, Randall M. Fort,
Gary W. O'Shaughnessy, Nina J. Stewart,
Walter Jajko, Edward D. Sheafer,
Michelle K. Van Cleave, Jerry O. Tuttle

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 Intelligence, Command, and Control

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I-94-5. August 1994

Project Director:
Anthony G. Oetinger

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Acknowledgments

For their willingness to travel to Cambridge to share their experience with our students at the Kennedy School of Government, we are deeply grateful to Barry M. Horowitz, Randall M. Fort, Gary W. O'Shaughnessy, Nina J. Stewart, Walter Jako, Edward D. Sheafer, Michelle K. Van Cleave, and Jerry O. Tuttle.

The collaboration of The MITRE Corporation made this publication possible. We are indebted to the many people at MITRE who provide editorial and production support, and to Barry Horowitz for his continued encouragement and support.

We also wish to thank Doug George for his logistical efforts on behalf of the seminar.

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

Will M. Jenkins
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 1993 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 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.

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: "C3 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."


Frank B. Horton, Deputy Chief of Staff/Intelligence, HQ Strategic Air Command: "Command Plan and C3I."

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, C3I for Counternarcotics, Department of Defense: "C3I in Transition."


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."

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.


Duane P. Andrews, Assistant Secretary of Defense (C3I): "Restructuring the World of C3I."

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.”


Joseph S. Toma, Chief, Special Action Division, Joint Staff J6-A: “C3: 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.”


This year’s presentations included continuing assessments of the Defense Reorganization Act of 1986, a look at the impact of new technologies on C3I 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 C3I.”


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 C3I.”

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.”


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.”

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."


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."


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."


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


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."


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."


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


(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.”


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.”


**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.”


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.”

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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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200 Aiken Lab, Harvard University, Cambridge, MA 02138. (617) 495-4114.
Fax: 617-495-3338
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<th>Glossary</th>
<th>Description</th>
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<tr>
<td>AAA</td>
<td>anti-aircraft artillery</td>
<td>DTC-1</td>
<td>desktop computer 1</td>
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<td>ABM</td>
<td>antiballistic missile</td>
<td>EHF</td>
<td>extremely high frequency</td>
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<td>AFIC</td>
<td>Air Force Intelligence Command</td>
<td>ELINT</td>
<td>electronic intelligence</td>
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<td>ANSI</td>
<td>American National Standards Institute</td>
<td>EMP</td>
<td>electromagnetic pulse</td>
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<td>ARN</td>
<td>air request net</td>
<td>EPA</td>
<td>Environmental Protection Agency</td>
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<td>ASD</td>
<td>Assistant Secretary of Defense</td>
<td>ESC</td>
<td>Electronic Systems Center</td>
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<td>ATO</td>
<td>air tasking order</td>
<td>FBIS</td>
<td>Foreign Broadcast Information Service</td>
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<td>AWACS</td>
<td>Airborne Warning and Control System</td>
<td>FC</td>
<td>field command</td>
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<td>CI</td>
<td>counterintelligence</td>
<td>FIST</td>
<td>fire or first support team; fleet imagery support terminal</td>
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<td>CINC</td>
<td>Commander in Chief</td>
<td>FTC</td>
<td>Force Tactical Commander</td>
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<td>CINCLANTFLT</td>
<td>Commander in Chief, Atlantic Fleet</td>
<td>FYDP</td>
<td>Future Years Defense Program</td>
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<td>CIO</td>
<td>Central Imagery Office</td>
<td>GDIP</td>
<td>General Defense Intelligence Program</td>
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<td>CM</td>
<td>countermeasures</td>
<td>GEO</td>
<td>geosynchronous orbit</td>
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<td>COMSEC</td>
<td>communications security</td>
<td>GL</td>
<td>generation language</td>
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<td>CONUS</td>
<td>continental United States</td>
<td>GPS</td>
<td>global positioning system</td>
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<td>CRADA</td>
<td>cooperative R&amp;D agreement</td>
<td>HUMINT</td>
<td>Human Intelligence</td>
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<td>CTAPS</td>
<td>Contingency Theater Automated Planning System</td>
<td>IMINT</td>
<td>Imagery Intelligence</td>
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<td>DAMA</td>
<td>demand assignment multiple access</td>
<td>INMARSAT</td>
<td>International Maritime Satellite Organization</td>
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<td>DARPA</td>
<td>Defense Advanced Research Projects Agency</td>
<td>INSCOM</td>
<td>Intelligence and Security Command</td>
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<td>DBMS</td>
<td>database management system</td>
<td>IR</td>
<td>infrared</td>
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<td>DCI</td>
<td>Director of Central Intelligence</td>
<td>ISDN</td>
<td>Integrated Services Digital Network</td>
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<td>Defense Data Network</td>
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<td>Joint Defense Intelligence Support System</td>
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<td>Joint Intelligence Center, Atlantic Command</td>
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<td>Defense Information Systems Agency</td>
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<td>Joint Intelligence Center, Pacific Command</td>
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<td>DODIIS</td>
<td>DOD Intelligence Information System</td>
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<td>Joint Operational Tactical System</td>
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<td>DSCS</td>
<td>Defense Satellite Communications Systems</td>
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<td>DS&amp;T</td>
<td>Directorate of Science and Technology</td>
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<td>Abbreviation</td>
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<td>JSTARS</td>
<td>Joint Surveillance Target Attack Radar System</td>
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<td>JTIDS</td>
<td>Joint Tactical Information Distribution System</td>
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<td>MAD</td>
<td>mutual assured destruction</td>
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<td>MCEB</td>
<td>Military Communications and Electronics Board</td>
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<td>MIPS</td>
<td>million instructions per second</td>
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<td>MOS</td>
<td>metal oxide semiconductors</td>
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<td>MRL</td>
<td>multiple rocket launcher</td>
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<td>MTCCS</td>
<td>Marine Tactical Command and Control System</td>
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<td>NCTMS</td>
<td>Navy Computer Telecommunication Master Station</td>
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<td>Naval Ocean Systems Center</td>
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<td>NTCCA</td>
<td>Navy Tactical Command Center Afloat</td>
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<td>OMB</td>
<td>Office of Management and Budget</td>
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<td>operational intelligence</td>
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<td>Officer Tactical Command Information Exchange System</td>
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<tr>
<td>POM</td>
<td>Program Objective Memoranda</td>
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<tr>
<td>RISC</td>
<td>reduced instruction set computer</td>
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<tr>
<td>RORSAT</td>
<td>Soviet radar ocean reconnaissance/surveillance satellite</td>
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<tr>
<td>ROW</td>
<td>rest of the world</td>
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<tr>
<td>RPV</td>
<td>remotely piloted vehicle</td>
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<tr>
<td>SCIF</td>
<td>secure compartmented information facility</td>
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<tr>
<td>SDI</td>
<td>Strategic Defense Initiative</td>
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<tr>
<td>SECEDEF</td>
<td>Secretary of Defense</td>
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<tr>
<td>SEW</td>
<td>Space and Electronic Warfare</td>
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<tr>
<td>SHF</td>
<td>super high frequency</td>
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<tr>
<td>SIGINT</td>
<td>Signal Intelligence</td>
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<tr>
<td>SINGARS</td>
<td>Single-Channel Ground and Air Radio System</td>
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<tr>
<td>SLGRs</td>
<td>small, lightweight GPS receivers</td>
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<td>SPO</td>
<td>system program office</td>
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<tr>
<td>SSC</td>
<td>superconducting supercollider</td>
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<tr>
<td>STU-III</td>
<td>secure telephone unit</td>
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<tr>
<td>TAC-3</td>
<td>Tactical Advanced Computer 3</td>
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<tr>
<td>TADIXS</td>
<td>Tactical Digital Information Exchange System</td>
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<td>TFCC</td>
<td>Tactical Flag Command Center</td>
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<td>TIARA</td>
<td>Tactical Intelligence and Related Activities</td>
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<td>TQM</td>
<td>total quality management</td>
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<tr>
<td>TRI-TAC</td>
<td>Tri-Service Tactical Communications</td>
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<tr>
<td>UHF</td>
<td>ultra high frequency</td>
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<tr>
<td>UIC</td>
<td>unit identification code</td>
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<tr>
<td>VTC</td>
<td>video telecommunications</td>
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<tr>
<td>WWMCCS</td>
<td>Worldwide Military Command and Control System</td>
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