

Incidental Paper

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

Guest Presentations — Spring 1982:

Richard D. DeLauer	R. Thomas Marsh
Hillman Dickinson	Thomas H. McMullen
Gerald P. Dinneen	William G. Miller
Richard H. Ellis	Richard G. Stilwell

**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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December 1982 I-82-3

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U.S. - Japan Foundation
United Telecommunications, Inc.
Veronis, Suhler & Associates, Inc.
Voice of America
Warner Amex Cable Communications Inc.

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 Richard D. DeLauer, Hillman Dickinson, Gerald P. Dinneen, Richard H. Ellis, R. Thomas Marsh, Thomas H. McMullen, William G. Miller and Richard G. Stilwell.

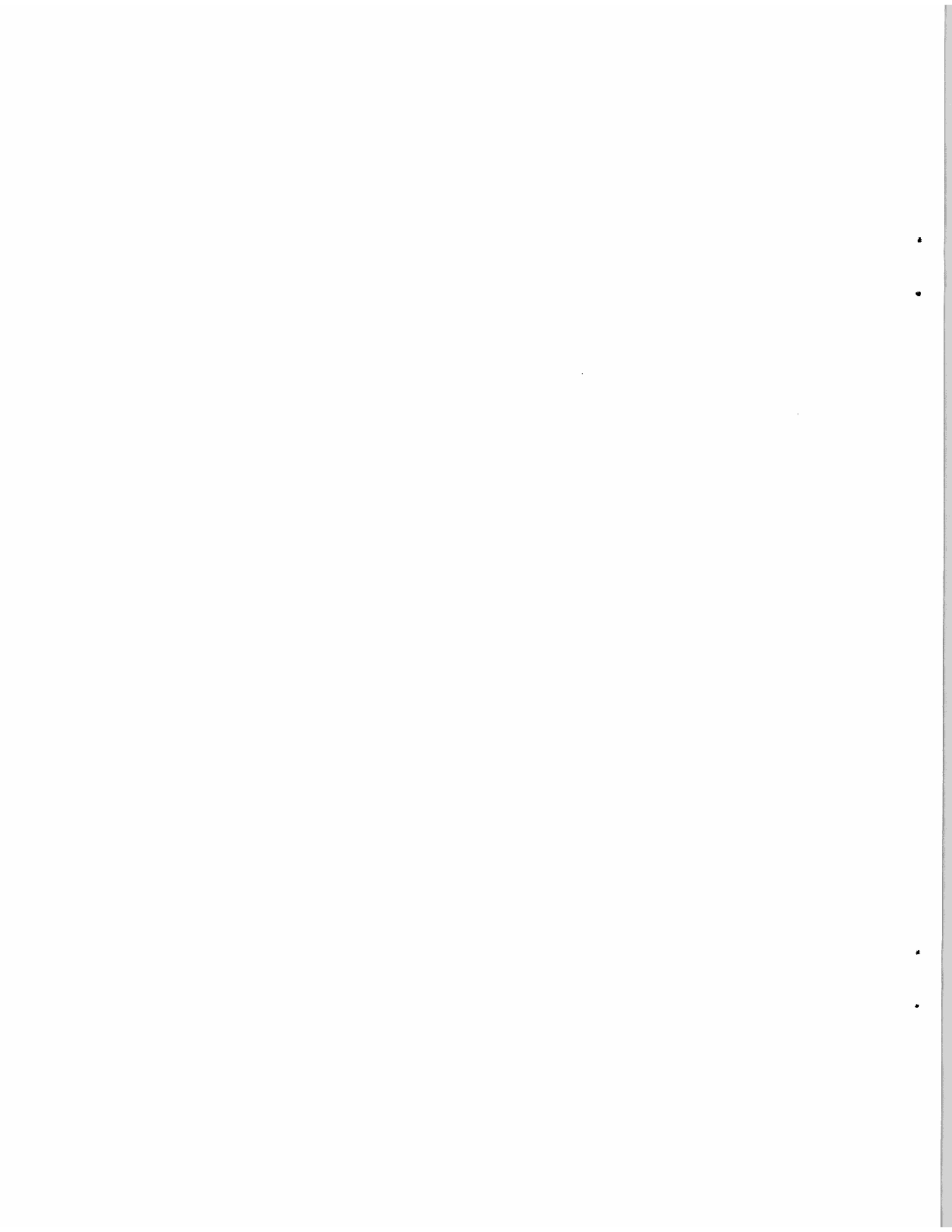
The collaboration of The MITRE Corporation made this publication possible. Robert Everett's initial interest in the seminar and John Jacobs' continuing participation from its inception to the present provided encouragement at critical times and constant intellectual stimulation. John Jacobs and Charles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

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

Anthony G. Oettinger

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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 were appropriate in a university classroom.

Strategic Connectivity

Richard H. Ellis

General Ellis has recently relinquished responsibility for the nation's major nuclear deterrent force, which includes bombers, tankers, reconnaissance aircraft and intercontinental ballistic missiles. He also wore a second hat as head of something that has a great deal of significance for command, control, communications and intelligence: the Joint Strategic Connectivity Staff. He began his career as an aviation cadet in World War II, rising to deputy chief of staff, Far East Air Forces before the war's end. He has been vice commander in chief of USAFE and has commanded the 6th Allied Tactical Air Force, Allied Air Forces in Southern Europe, the 16th Air Force in Spain, Allied Air Forces Central Europe, and finally USAFE itself. He directed the Joint Strategic Connectivity Staff at Offutt Air Force Base from its founding in summer 1980 until his retirement, and directed the Joint Strategic Target Planning Staff, also at Offutt. He brings this wealth of experience in operations, war plans and policymaking to bear on the C³I problem.

Planning for Defense-Wide Command and Control

Hillman Dickinson

The office General Dickinson occupies is not one with a long history or tradition. He is the first occupant: he created it, in response to perceptions like those we have seen in our studies. Command, control and so forth are meant to have an integrated function - in theory. In practice it wasn't necessarily happening that way. The Office of the Joint Chiefs, one of whose missions is to tap the old military establishment, set up a directorate to bring some harmony into such matters. We invited General Dickinson to reflect on that experience, as well as any other aspects of his career that help shed light on problems and opportunities in command and control. He has seen service as a commander in Vietnam, but the backbone of his career has been technology: nuclear test detection sensors, combat support systems, target acquisition intelligence, electronic warfare, and his springboard to his present post: the first command of the Army's C³I Research, Development and Acquisition Command.

A Tactical Commander's View of C³I

Thomas H. McMullen

General McMullen's has been a military family for three generations; his father made the transition when the Army Air Corps became a separate service, and the son has made his life in Air Force system acquisition and tactical aviation — flying fighters and seeing command and control work as a forward air controller in Vietnam. He has been a test pilot, worked in R&D, been associated with Gemini, Apollo and the B-1 bomber and the A-10 attack aircraft, and seen systems from the acquisition side as well. He comments:

“None of these is specifically command and control; yet command and control is really the business I've been in all my life.” About his last-minute substitution for scheduled speaker General Wilbur Creech, TAC's commander, he adds wryly: “That's how the command and control process works. General Creech stayed in control. When he couldn't come, he commanded me to. The process, it seems to me, is alive and well.”

C³ Priorities

Gerald P. Dinneen

Dr. Dinneen, as Assistant Secretary of Defense for Communications, Command and Control, and Intelligence during the Carter administration, represents decision-making power and responsibility in the C³ field. His background lies in MIT's influential Lincoln Laboratory, one of whose prime contributions to modern technology was the pioneering Whirlwind computer; Lincoln was also the birthplace of the long-lived SAGE air defense system. Dr. Dinneen's orientation, though, is far from being merely that of the R&D specialist. His views are boldly stated, and the discussion that follows ranges knowledgeably, and sometimes provocatively, through the thicks of C³ policy and application.

Air Force C³I Systems

R. Thomas Marsh

General Marsh is the man responsible for the kinds of technology the Air Force fields. He rose from the ranks and had early experience in nuclear weapons technology. His portfolio included involvement with ballistic missile development and command of the Projects Division in the Directorate of Space in the Pentagon before he returned to the Air Force Systems Command as deputy chief of staff for development plans. He

commanded the Electronic Systems Division for nearly four years before stepping up to his present rank and responsibility in early 1981. Knowledgeable and outspoken, he brings us a fund of informed views on the nation's military purpose and the role within it of the Air Force and its rapidly advancing technology.

Policy and National Command

Richard G. Stilwell

General Stilwell retired in 1976 as Commander-in-Chief, United Nations Command, Commander of US forces, Korea, and Commanding General, Eighth Army. In three turbulent years he made a decisive contribution to the honing of US-Korean military teamwork. Previously he had commanded an infantry regiment in Korea, then moved to SHAPE in Europe as Chief of Strategic Planning and served as General Westmoreland's chief of staff in Vietnam, headed the Military Assistance Command in Thailand, commanded the XXIV US Army Corps in Vietnam, and found time to serve as an instructor at the Army War College and Commandant of Cadets at West Point. As Deputy Chief of Staff, US Army, he gained important experience with the Joint Chiefs of Staff and was a member of the military staff of the US delegation to the United Nations; he then commanded the Sixth Army. Out of this wealth of experience, he tells us what command and control (that complex abstraction) means when it is applied to cases — including the famous “tree-cutting incident” in Korea in 1976.

The View from the Hot Seat

Richard D. DeLauer

After 23 years in the private sector, Dr. DeLauer was nominated by President Reagan to be the point man in the DoD for science and technology, basic and applied research, development and acquisition of weapons systems, C³, atomic energy and intelligence resources. This makes him the apex of the C³I pyramid. Leaving the Navy after a 15-year career in naval aeronautical engineering, he joined TRW, where he directed the Titan ICBM development program and later the ballistic missile program. He rose to vice president and general manager first of the Systems Engineering and Integration Division, then of TRW itself and, at the time of his move to Washington, was an executive vice president. Now, after a year on the other side of the fence, he is a fountainhead of ideas, experiences and reflections on what is involved in making the complex, sometimes cumbersome defense technology picture emerge from the welter of conflicting interests into the light of day.

Foreign Affairs, Diplomacy and Intelligence

William G. Miller

William Miller seems to qualify as an experienced citizen of the world. His career in the Foreign Service brought him from early experience as a political officer in Iran to service as a presidential emissary under President Carter in a 1979 mission that contributed to the release of the first group of Iranian hostages. Along the way, he rose from a staff position in the Senate to staff director of the Senate Special Committee on National Emergencies and Delegated Emergency Powers, and then to equivalent positions on two Senate select committees investigating the US government's intelligence activities. The first, the Church committee, created the second, the Senate Select Committee on Intelligence, in May 1976, and in doing so brought about a new era of intelligence oversight and a rigorous system of accounting for all intelligence activities. Miller's perhaps unique meld of experience in sensitive areas gives him a slant new to this forum: a view of the diplomatic influences, and the public consequences, of intelligence gathering and use.

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GLOSSARY

AAW	air-to-air warfare	CENTAG	Headquarters Central Army Group (NATO)
ABM	Anti-Ballistic Missile system	CEO	chief executive officer (of a firm)
ABNCP	airborne national command post	CIA	Central Intelligence Agency
ACCS	Air Control C ³ System	CINC	commander-in-chief
ACE	Allied Command in Europe	CINCAFLANT	Commander-in-Chief, US Air Forces, Atlantic
ADP	automated data processing	CINCEUR	Commander-in-Chief, Europe
AF1	Air Force One (Presidential Aircraft)	CINCLANT	Commander-in-Chief, US Atlantic Command
AFSATCOM	Air Force Satellite Communications Systems	CINCNORAD	Commander-in-Chief, North American Aerospace Defense Command
AFSC	Air Force Systems Command	CINCPAC	Commander-in-Chief, Pacific
AFSCF	Air Force Satellite Control Facility	CINCSAC	Commander-in-Chief, Strategic Air Command
AJ or A/J	anti-jam	CNCE	communications nodal control element
ANMCC	Alternate National Military Command Center	CNO	Chief of Naval Operations
ARC	airborne radio communications	COD	carrier onboard delivery
ASOC	air support operations center	COMSAT	Communications Satellite Corporation
ATAF	Allied Tactical Air Force	Comsec	communications security
ATEC	Automated Technical Control (DCS)	CONUS	continental United States
ATOC	allied tactical operations center (NATO)	COBRA DANE	attack warning radar system
AT&T	American Telephone and Telegraph Corporation	CRC	control and reporting center
AUTODIN	Automatic Digital Network	CRP	control and reporting post
AUTOVON	Automatic Voice Network	C ²	command and control
AWACS	Airborne Warning and Control System	C ³	command, control and communications
BAI	battlefield air interdiction	C ³ I	command, control, communications and intelligence
BETA	Battlefield Exploitation and Target Acquisition System	DARPA	Defense Advanced Research Projects Agency
BMEWS	Ballistic Missile Early Warning System	DASC	direct air support center
BMO	Ballistic Missile Office, Norton Air Force Base, California		
CCD	charge-coupled device		

DCA	Defense Communications Agency	FLTSAT	Navy fleet satellite system
DCI	Director of Central Intelligence	GAO	General Accounting Office (U.S. Congress)
DCS	Defense Communications System	GDIP	General Defense Intelligence Program
DC ³ A	defense command, control and communications agency	GPS	Global Positioning System
DEFCON	defense condition (stage of strategic alert)	GWEN	Ground Wave Emergency Network
DET	detachment	HAVE QUICK	anti-jam radio system
DIA	Defense Intelligence Agency	HERRT	headquarters emergency reconstitutable relocation teams
DMZ	demilitarized zone separating North and South Korea	HEW	(Department of) Health, Education and Welfare
DoD	Department of Defense	HF	high frequency
DP	data processing	IC	intelligence community
DRB	Defense Resources Board	ICBM	intercontinental ballistic missile
DSARC	Defense System Acquisition Review Council (OSD)	IFF	identification, friend or foe
DSB	Defense Science Board	IOC	initial operational capability
DSCS	Defense Satellite Communications System	IFR	instrument flight rules
ECM	electronic countermeasures	IR	infrared
ESD	Electronic Systems Division, Air Force Systems Command	JCS	Joint Chiefs of Staff
EHF	extra high frequency	JCSE	joint communications support element
EIA	Electronic Industries Association	JDA	Joint Deployment Agency
ELF	extra low frequency	JPAM	joint program assessment memorandum
Elint	electronic intelligence	JSA	Joint Security Area (at Korean armistice line)
EMP	electromagnetic pulse (effect of nuclear blast)	JSCS	Joint Strategic Connectivity Staff
ENSCE	enemy situation correlation elements	JSPD	joint strategic planning document
EUCOM	European Command	JSTPS	Joint Strategic Target Planning Staff
FAA	Federal Aviation Administration	JTF	joint task force
FBI	Federal Bureau of Investigation	JTIDS	Joint Tactical Information Distribution System
FEBA	forward edge of the battle area	J3	Director of Operations
FH	frequency hop (anti-jamming technique)	J6	Director of Communications

LANTCOM	Atlantic Command	OJCS	Office of the Joint Chiefs of Staff
LCC	launch control center	OMB	Office of Management and Budget
LEM	lunar excursion module	opsdep	operation deputy
LTV	Ling Temco Vought Corporation	OSD	Office of the Secretary of Defense
MAC	Military Airlift Command	OTH	over-the-horizon radar
MCE	modular control element	PARCS	perimeter acquisition radar characterization system
MILSTAR	a communications satellite	PAVE PAWS	coastal air defense radar system
MIT	Massachusetts Institute of Technology	PA&E	program analysis and evaluation
MM	Minuteman (ICBM)	PDM	presidential decision memorandum
MRAM	medium-range attack missile	PERT	Program Evaluation and Review Technique
MRCM	medium-range cruise missile	PGM	precision guided munitions
MTI	moving target indicator (radar)	PLSS	Precision Location and Strike System
MTMC	Military Traffic Management Command	POM	program objective memorandum
MX	movable missile system	PPBS	Planning, Programming and Budgeting System
NASA	National Aeronautics and Space Administration	PTARMIGAN	tactical switching system (UK)
NATO	North Atlantic Treaty Organization	PTTs	post, telephone and telegraph networks (commercial communications systems in Europe)
NCA	national command authority(ies)	P&A	programs and analysis
NEACP	national emergency airborne command post	RAF	Royal Air Force (UK)
NMCC	National Military Command Center	RDF	rapid deployment force
NMCS	National Military Command System	RDJTF	rapid deployment joint task force
NMIC	National Military Intelligence Center	REDCOM	Readiness Command
NORAD	North American Air Defense Command	rece	reconnaissance
NORTHAG	Headquarters, Northern Army Group (NATO)	RFI	radio frequency interference
NRL	Naval Research Laboratory	ROK	Republic of Korea
NSC	National Security Council	RSI	rationalization, standardization and interoperability
NSDM	national security decision memorandum	R&D	research and development
OER	officer effectiveness report	SAC	Strategic Air Command

SACEUR	Supreme Allied Commander, Europe (NATO)	TACS	Tactical Air Control System
SAGE	Semi-Automatic Ground Environment air defense system	TACS/TADS	Tactical Air Control System and Tactical Air Defense System
SALT	Strategic Arms Limitation Talks (or Treaty)	TEMPEST	program to accredit electronic equipment for secure military use
SAM	surface-to-air missile	TPFDL	time/place/force deployment list
SCF	satellite control facility	TRADOC	Training and Doctrine Command
SEEK TALK	Air Force radio system with high resistance to jamming	Triad	trio of strategic systems for nuclear response
SHAPE	Supreme Headquarters, Allied Powers in Europe	TRI-TAC	tri-service tactical switching system
SHF	super high frequency	TTS	tactical tracking system
Sigint	signal intelligence	UCLA	University of California at Los Angeles
SINCGARS	Single Channel Ground/Air Radio System (ARMY)	UHF	ultra high frequency
SINTAC	System integre de Navigation, Telecommunication et d' Anti Collision (French air force secure data system)	UKADGE	United Kingdom Air Defense Ground Environment
SIOP	Single Integrated Operation Plan	UN	United Nations
SLBM	submarine-launched ballistic missile	USAFE	U.S. Air Force, Europe
SOP	Standard-operating procedure	USDR&E	Undersecretary of Defense for Research and Engineering
SOTAS	Stand off Target Acquisition System	VHF	very high frequency
SSBN	strategic nuclear submarine	VHSIC	very high speed integrated circuit
STC	satellite tracking center	VLF	very low frequency
SYNTEC	tactical switching system (France)	WHCA	White House Communications Agency
tac	tactical	Wis	WWMCCS Information System
TAC	Tactical Air Command	WWMCCS	Worldwide Military Command and Control System
TACAMO	“take charge and move out” – acronym for airborne communications link with strategic submarine force	WTS	Worldwide Teletype System
TACC	tactical air control center		
TACP	tactical air control party		