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# The Secret Of Apollo Systems Management In America

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Boom  
Defence and Discovery  
The Oxford Handbook of Project Management  
Digital Apollo  
Rational Accidents  
Space Politics and Policy  
Space Policy in the Twenty-First Century  
Exploring the Unknown, Volume VII, NASA SP-2008-4407, 2008, \*  
Is War Necessary for Economic Growth?  
The Secret of Apollo  
Critical issues in the history of spaceflight  
Spacesuit  
Realizing the Dream of Flight  
Team of Teams  
Space Exploration and Humanity [2 volumes]  
Transatlantic Space Politics  
Inventing the American Astronaut  
Doing the Impossible  
System Engineering Analysis, Design, and Development  
In Peace Prepared  
Von Braun  
The Emergence of Routines  
A Companion to American Technology  
American Defense Policy  
The Secret of Apollo  
History of Acquisition in the Dept. of Defense, Vol. II, Adapting to Flexible Response  
1960-1968, 2013  
The Apollo Murders  
Handbook on Innovation and Project Management  
The Spacefaring Earth  
Organizational Communication Imperatives  
Innovation in Flight  
CubeSats: Invading and Shaping the Space Industry  
History of Acquisition in the Department of Defense  
Research in NASA History  
NASA 50th Anniversary Proceedings: NASA's First 50 Years: Historical Perspectives  
Gower Handbook of Project Management  
Into the Black  
Adapting to Flexible Response, 1960-1968  
Disaster and Crisis Management

Dark Moon

*The Secret Of  
Apollo Systems  
Management  
In America*

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## **CASSIUS AVILA**

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Boom Routledge  
Organizational  
Communication  
Imperatives: Lessons of  
the Space Program, by  
Phillip K. Tompkins,  
provides unparalleled  
insight into the  
communication successes  
and failures of NASA's  
Marshall Space Flight  
Center. It spans a 25-year  
period--from the Apollo  
Program to the present-  
day dilemmas of the  
space program. Much of  
the book focuses on  
communication problems  
involved in the Challenger  
disaster. Tompkins is a  
master of what Clifford  
Geertz called "thick  
description." The result is  
a compelling, richly-  
detailed case study that  
brings alive the field of  
communication to  
students. Organizational  
Communication  
Imperatives eases the job  
of teaching by providing  
students with a narrative  
that stimulates interest,  
contextualizes abstract  
principles, and leads  
students into theory with  
greater understanding.  
Through their study of the  
Marshall Center, students

are exposed to \* how  
complex organizational  
structure changes over  
time. \* how employees  
are affected by these  
changes. \* how an  
organization may react to  
a major crisis. \* how an  
organization responds to  
different types of  
leadership. \* what it takes  
to bring an ailing  
organization back to  
health. The text thus  
provides a more  
comprehensive insight  
into the functioning of one  
organization--rather than  
attempting to describe  
how all organizations  
function--than is offered in  
any other book of this  
type. Yet the analysis  
offered can be applied to  
any organization to  
improve communication.  
Tompkins's work as an  
organizational  
communication consultant  
to the Marshall Center  
during the Apollo  
Program, under legendary  
German rocket scientist  
Wernher von Braun, is  
well known. In 1990,  
Tompkins returned to  
Huntsville to interview top  
management and assess  
the Center's recovery  
since the Challenger  
disaster. The book takes  
the shape of a first-person  
narrative, which gives it  
an accessible, personal

style rarely found in  
textbooks. Students will  
have no difficulty with  
comprehension. It is also  
unusual to present  
primary-source findings in  
a classroom text, as this  
book does. Students gain  
a sense of how original  
research is conducted as  
they use the book, which  
encourages development  
of their critical thinking  
skills. Suggested  
questions for discussion  
and essays, as well as  
class projects and  
exercises, are included in  
an appendix to assist the  
instructor in using the  
book to maximum  
advantage.  
*Defence and Discovery*  
MIT Press  
The space race between  
the United States and the  
Soviet Union during the  
Cold War is well  
documented, but few are  
aware that Canada, too,  
was an early contender in  
space exploration. Indeed,  
in 1962, Canada bested  
the more powerful United  
Kingdom to become the  
third nation to reach outer  
space. Defence and  
Discovery presents the  
first comprehensive  
investigation into the  
origins, development, and  
impact of Canada's space  
program. Through  
meticulous research,

including newly declassified material, it demonstrates the central role of the military in Canada's early space research. Moreover, it reveals the technological, political, and strategic implications of the country's early innovation in space-research technology, and its subsequent turn from this arena. A striking contribution to Canada's military and political history, *Defence and Discovery* illuminates a significant yet understudied period in Canada's growth as a nation.

**The Oxford Handbook of Project Management**

Adventures Unlimited Press  
From the New York Times bestselling author of *My Share of the Task* and *Leaders*, a manual for leaders looking to make their teams more adaptable, agile, and unified in the midst of change. When General Stanley McChrystal took command of the Joint Special Operations Task Force in 2004, he quickly realized that conventional military tactics were failing. Al Qaeda in Iraq was a decentralized network that could move quickly, strike ruthlessly, then seemingly vanish

into the local population. The allied forces had a huge advantage in numbers, equipment, and training—but none of that seemed to matter. To defeat Al Qaeda, they would have to combine the power of the world's mightiest military with the agility of the world's most fearsome terrorist network. They would have to become a "team of teams"—faster, flatter, and more flexible than ever. In *Team of Teams*, McChrystal and his colleagues show how the challenges they faced in Iraq can be relevant to countless businesses, nonprofits, and organizations today. In periods of unprecedented crisis, leaders need practical management practices that can scale to thousands of people—and fast. By giving small groups the freedom to experiment and share what they learn across the entire organization, teams can respond more quickly, communicate more freely, and make better and faster decisions. Drawing on compelling examples—from NASA to hospital emergency rooms—*Team of Teams* makes the case for merging the power of a large corporation with the

agility of a small team to transform any organization. *Digital Apollo* JHU Press  
Winner of the Emme Award for Astronautical Literature from the American Astronautical Society  
How does one go about organizing something as complicated as a strategic-missile or space-exploration program? Stephen B. Johnson here explores the answer—systems management—in a groundbreaking study that involves Air Force planners, scientists, technical specialists, and, eventually, bureaucrats. Taking a comparative approach, Johnson focuses on the theory, or intellectual history, of "systems engineering" as such, its origins in the Air Force's Cold War ICBM efforts, and its migration to not only NASA but the European Space Agency. Exploring the history and politics of aerospace development and weapons procurement, Johnson examines how scientists and engineers created the systems management process to coordinate large-scale technology development, and how managers and military officers gained control of that process. "Those funding the race

demanded results," Johnson explains. "In response, development organizations created what few expected and what even fewer wanted—a bureaucracy for innovation. To begin to understand this apparent contradiction in terms, we must first understand the exacting nature of space technologies and the concerns of those who create them."

#### Rational Accidents

Government Printing Office

The Oxford Handbook of Project Management presents and discusses leading ideas in the management of projects. Positioning project management as a domain much broader and more strategic than simply 'execution management', this Handbook draws on the insights of over 40 scholars to chart the development of the subject over the last 50 years or more as an area of increasing practical and academic interest. It suggests we could be entering an emerging 'third wave' of analysis and interpretation following its early technical and operational beginnings and the subsequent shift to a focus on projects and their management. Topics

dealt with include: the historical evolution of the subject; its theoretical base; professionalism; business and societal context; strategy; organization; governance; innovation; overruns; risk; information management; procurement; relationships and trust; knowledge management; practice and teams. This handbook is of particular relevance to those interested in the research issues underlying project management.

#### **Space Politics and Policy**

U. S. National Aeronautics & Space Administration

A Companion to American Technology is a groundbreaking collection of original essays that analyze the hard-to-define phenomenon of "technology" in America. 22 original essays by expert scholars cover the most important features of American technology, including developments in automobiles, television, and computing Analyzes the ways in which technologies are organized, such as in the engineering profession, government, medicine and agriculture Includes discussions of how technologies interact with race, gender, class, and other organizing

structures in American society

*Space Policy in the Twenty-First Century* UBC Press

A timely investigation of the causes of technological and scientific stagnation, and a radical blueprint for accelerating innovation. "Read this book for the alternative history of our age." —Peter Thiel, investor and author of *Zero to One* "A must-read for those who seek to build the future." —Marc Andreessen, cofounder of Netscape and Andreessen Horowitz From the Moon landing to the dawning of the atomic age, the decades prior to the 1970s were characterized by the routine invention of transformative technologies at breakneck speed. By comparison, ours is an age of stagnation. Median wage growth has slowed, inequality and income concentration are on the rise, and scientific research has become increasingly expensive and incremental. Why are we unable to replicate the rate of progress of past decades? What can we do to reinvigorate innovation? In *Boom*, Byrne Hobart and Tobias Huber take an inductive approach to the problem.

In a series of case studies tracking some of the most significant breakthroughs of the past 100 years—from the Manhattan Project and the Apollo program to fracking and Bitcoin—they reverse-engineer how transformative progress arises from small groups with a unified vision, vast funding, and surprisingly poor accountability. They conclude that financial bubbles, while often maligned as destructive and destabilizing forces, have in fact been the engine of past breakthroughs and will drive future advances. In other words: Bubbles aren't all bad. Integrating insights from economics, philosophy, and history, *Boom* identifies the root causes of the Great Stagnation and provides a blueprint for accelerating innovation. By decreasing collective risk aversion, overfunding experimental processes, and organizing high-agency individuals around a transcendent mission, bubbles are the key to realizing a future that is radically different from the present. *Boom* offers a definite and optimistic vision of our future—and a path to unleash a new era of global prosperity.

### **Exploring the**

**Unknown, Volume VII, NASA SP-2008-4407, 2008, \* Yale University Press**

This Handbook was the first APM Body of Knowledge Approved title for the Association for Project Management. Over the course of five editions, *Gower Handbook of Project Management* has become the definitive desk reference for project management practitioners. The Handbook gives an introduction to, and overview of, the essential knowledge required for managing projects. The team of expert contributors, selected to introduce the reader to the knowledge and skills required to manage projects, includes many of the most experienced and highly regarded international writers and practitioners. The Fifth Edition has been substantially restructured. All but two of the authors are new, reflecting the fast-changing and emerging perspectives on projects and their management. The four sections in the book describe: ¶ Projects, their context, value and how they are connected to organizational strategy; ¶ Performance: describing how to manage the

delivery of the project, covering scope, quality, cost, time, resources, risk and sustainability ¶ Process: from start up to close down ¶ Portfolio: the project and its relationship to the organization The discrete nature of each chapter makes this Handbook a wonderful source of advice and background theory that is easy to consult. *Gower Handbook of Project Management* is an encyclopaedia for the discipline and profession of project management; a bible for project clients, contractors and students. *Is War Necessary for Economic Growth?* OUP Oxford

How the twenty-one-layer Apollo spacesuit, made by Playtex, was a triumph of intimacy over engineering. When Neil Armstrong and Buzz Aldrin stepped onto the lunar surface in July of 1969, they wore spacesuits made by Playtex: twenty-one layers of fabric, each with a distinct yet interrelated function, custom-sewn for them by seamstresses whose usual work was fashioning bras and girdles. This book is the story of that spacesuit. It is a story of the triumph over the military-industrial complex by the

International Latex Corporation, best known by its consumer brand of "Playtex"—a victory of elegant softness over engineered hardness, of adaptation over cybernetics. Playtex's spacesuit went up against hard armor-like spacesuits designed by military contractors and favored by NASA's engineers. It was only when those attempts failed—when traditional engineering firms could not integrate the body into mission requirements—that Playtex, with its intimate expertise, got the job. In *Spacesuit*, Nicholas de Monchaux tells the story of the twenty-one-layer spacesuit in twenty-one chapters addressing twenty-one topics relevant to the suit, the body, and the technology of the twentieth century. He touches, among other things, on eighteenth-century androids, Christian Dior's New Look, Atlas missiles, cybernetics and cyborgs, latex, JFK's carefully cultivated image, the CBS lunar broadcast soundstage, NASA's Mission Control, and the applications of Apollo-style engineering to city planning. The twenty-one-layer spacesuit, de Monchaux argues, offers an object

lesson. It tells us about redundancy and interdependence and about the distinctions between natural and man-made complexity; it teaches us to know the virtues of adaptation and to see the future as a set of possibilities rather than a scripted scenario.

*The Secret of Apollo*  
Vintage

Though more than forty years old, the space age has just begun, and questions about its future abound. What will replace the Space Shuttle? Will the International Space Station justify its \$100 billion potential cost? Are asteroids real threats to Earth or just the subject of science fiction movies? Will humans land on Mars? Will the search for extraterrestrial life be rewarded? In *Space Policy in the Twenty-First Century*, W. Henry Lambright brings together ten top-ranking observers of United States space exploration to address these and other issues relating to the future of the space program. While the U.S. no longer competes with the Soviets for technological "firsts," they argue, ideology and national image remain at the core of space policy, with other factors playing subordinate roles.

Reminding readers of the historical highlights, the authors pose searching questions about the priorities and applications of space science, manned vs. unmanned flights, and commercial access to the space enterprise.

Contributors include: Christopher F. Chyba, SETI Institute and Stanford University; Ronald J. Deibert, University of Toronto; Daniel H. Deudney, the Johns Hopkins University; W. Henry Lambright, Syracuse University; Roger D. Launius, NASA; Karl A. Leib, Syracuse University; John M. Logsdon, George Washington University; Howard E. McCurdy, American University; Scott N. Pace, White House Office of Science and Technology Policy; and Debora L. VanNijnatten, Wilfrid Laurier University.

**Critical issues in the history of spaceflight**  
MIT Press

Who were the men who led America's first expeditions into space? Soldiers? Daredevils? The public sometimes imagined them that way: heroic military men and hot-shot pilots without the capacity for doubt, fear, or worry. However, early astronauts were hard-working and determined

professionals - 'organization men' - who were calm, calculating, and highly attuned to the politics and celebrity of the Space Race. Many would have been at home in corporate America - and until the first rockets carried humans into space, some seemed to be headed there. Instead, they strapped themselves to missiles and blasted skyward, returning with a smile and an inspiring word for the press. From the early days of Project Mercury to the last moon landing, this lively history demystifies the American astronaut while revealing the warring personalities, raw ambition, and complex motives of the men who were the public face of the space program.

Spacesuit Taylor & Francis  
As the dust settles on the 30th anniversary of Apollo 11, information is now coming to light that throws into serious doubt the authenticity of the Apollo record. New evidence clearly suggests that NASA hoaxed the photographs taken on the surface of the Moon. These disturbing findings are supported by detailed analysis of the Apollo images by professional photographer David S Percy ARPS and physicist

David Groves PhD. The numerous inconsistencies clearly visible in the Apollo photographic account are quite irrefutable. Recent research indicates that the errors evidenced in DARK MOON were deliberately planted by individuals determined to leave clues to the faking in which they were unwillingly involved. DARK MOON is the answer to the question-did the Apollo missions really land a man on the Moon and return him alive and well to Earth, or is the record incorrect?

Realizing the Dream of Flight JHU Press  
Winner of the Emme Award for Astronautical Literature from the American Astronautical Society How does one go about organizing something as complicated as a strategic-missile or space-exploration program? Stephen B. Johnson here explores the answer—systems management—in a groundbreaking study that involves Air Force planners, scientists, technical specialists, and, eventually, bureaucrats. Taking a comparative approach, Johnson focuses on the theory, or intellectual history, of "systems engineering" as

such, its origins in the Air Force's Cold War ICBM efforts, and its migration to not only NASA but the European Space Agency. Exploring the history and politics of aerospace development and weapons procurement, Johnson examines how scientists and engineers created the systems management process to coordinate large-scale technology development, and how managers and military officers gained control of that process. "Those funding the race demanded results," Johnson explains. "In response, development organizations created what few expected and what even fewer wanted—a bureaucracy for innovation. To begin to understand this apparent contradiction in terms, we must first understand the exacting nature of space technologies and the concerns of those who create them." *Team of Teams* Springer Science & Business Media  
This engaging survey of the Space Age links science and technology with politics and popular culture, war and peace, and crises and controversies. It examines the history of spaceflight as a mirror of human thought and action across

the Earth. The volume encompasses the new astronomy and sciences of the modern era, the early dreamers and pioneers after 1903, the national competitions of the First World War, the rocket states that prepared for the Second World War, the rivalries and “space race” of the Cold War between the US and USSR, as well as more recent developments including the Space Shuttle, the International Space Station, national space programs, orbital technologies, transhumanism, and military and commercial ventures in space. It also stresses the importance of geography in the geopolitics of spaceflight competition and in the nature of the planetary biosphere. Taking a chronological approach to lived human experience and threshold achievements, the chapters show how these themes have been reflected in literature, art, music, film, and our new digital worlds. This book is essential reading for students of the history of the Space Age, as well as an excellent companion to courses on twentieth-century science and technology, the Cold War, and American history.

*Space Exploration and Humanity [2 volumes]*  
Oxford University Press  
Identifying the origins and evolution of innovation and project management, this unique Handbook explains why and how the two fields have grown and developed as separate disciplines, highlighting how and why they are now converging. It explores the theoretical and practical connections between the management of innovations and projects, examining the close relationship between the disciplines.  
*Transatlantic Space Politics* Springer Science & Business Media  
A vital text for understanding the twenty-first-century battlefield and the shifting force structure, this book prepares students to think critically about the rapidly changing world they'll inherit. American Defense Policy, first published in 1965 under the leadership of Brent Scowcroft, has been a mainstay in courses on political science, international relations, military affairs, and American national security for more than 50 years. This updated and thoroughly revised ninth edition, which contains about 30% all-new content, considers

questions of continuity and change in America's defense policy in the face of a global climate beset by geopolitical tensions, rapid technological change, and terrorist violence. The book is organized into three parts. Part I examines the theories and strategies that shape America's approach to security policy. Part II dives inside the defense policy process, exploring the evolution of contemporary civil-military relations, the changing character of the profession of arms, and the issues and debates in the budgeting, organizing, and equipping process. Part III examines how purpose and process translate into American defense policy. This invaluable and prudent text remains a classic introduction to the vital security issues the United States has faced throughout its history. It breaks new ground as a thoughtful and comprehensive starting point to understand American defense policy and its role in the world today. Contributors: Gordon Adams, John R. Allen, Will Atkins, Deborah D. Avant, Michael Barnett, Sally Baron, Jeff J.S. Black, Jessica Blankshain, Hal Brands, Ben Buchanan,



Dale C. Copeland, Everett Carl Dolman, Jeffrey Donnithorne, Daniel W. Drezner, Colin Dueck, Eric Edelman, Martha Finnemore, Lawrence Freedman, Francis Fukuyama, Michael D. Gambone, Lynne Chandler Garcia, Bishop Garrison, Erik Gartzke, Mauro Gilli, Robert Gilpin, T.X. Hammes, Michael C. Horowitz, G. John Ikenberry, Bruce D. Jones, Tim Kane, Cheryl A. Kearney, David Kilcullen, Michael P. Kreuzer, Miriam Krieger, Seth Lazar, Keir A. Lieber, Conway Lin, Jon R. Lindsay, Austin Long, Joseph S. Lupa Jr., Megan H. MacKenzie, Mike J. Mazarr, Senator John McCain, Daniel H. McCauley, Michael E. McInerney, Christopher D. Miller, James N. Miller, John A. Nagl, Henry R. Nau, Renée de Nevers, Joseph S. Nye Jr., Michael E. O'Hanlon, Mancur Olson Jr., Sue Payton, Daryl G. Press, Thomas Rid, John Riley, David Sacko, Brandon D. Smith, James M. Smith, Don M. Snider, Sir Hew Strachan, Michael Wesley, Richard Zeckhauser

*Inventing the American Astronaut* John Wiley & Sons

Praise for the first edition: "This excellent text will be useful to every system engineer (SE) regardless of the domain. It covers ALL relevant SE material and does so in a very clear, methodical fashion. The breadth and depth of the author's presentation of SE principles and practices is outstanding." —Philip Allen This textbook presents a comprehensive, step-by-step guide to System Engineering analysis, design, and development via an integrated set of concepts, principles, practices, and methodologies. The methods presented in this text apply to any type of human system -- small, medium, and large organizational systems and system development projects delivering engineered systems or services across multiple business sectors such as medical, transportation, financial, educational, governmental, aerospace and defense, utilities, political, and charity, among others. Provides a common focal point for "bridging the gap" between and unifying System Users, System Acquirers, multi-discipline System Engineering, and Project, Functional, and Executive Management education, knowledge, and decision-making for developing systems, products, or services Each chapter provides definitions of key terms, guiding principles, examples, author's notes, real-world examples, and exercises, which highlight and reinforce key SE&D concepts and practices Addresses concepts employed in Model-Based Systems Engineering (MBSE), Model-Driven Design (MDD), Unified Modeling Language (UMLTM) / Systems Modeling Language (SysMLTM), and Agile/Spiral/V-Model Development such as user needs, stories, and use cases analysis; specification development; system architecture development; User-Centric System Design (UCSD); interface definition & control; system integration & test; and Verification & Validation (V&V) Highlights/introduces a new 21st Century Systems Engineering & Development (SE&D) paradigm that is easy to understand and implement. Provides practices that are critical staging points for technical decision making such as Technical Strategy Development; Life Cycle requirements; Phases, Modes, & States; SE Process; Requirements

Derivation; System Architecture Development, User-Centric System Design (UCSD); Engineering Standards, Coordinate Systems, and Conventions; et al. Thoroughly illustrated, with end-of-chapter exercises and numerous case studies and examples, *Systems Engineering Analysis, Design, and Development*, Second Edition is a primary textbook for multi-discipline, engineering, system analysis, and project management undergraduate/graduate level students and a valuable reference for professionals.

*Doing the Impossible*  
Stripe Press  
Curator and space historian at the Smithsonian's National Air and Space Museum delivers a brilliantly nuanced biography of controversial space pioneer Wernher von Braun. Chief rocket engineer of the Third Reich and one of the fathers of the U.S. space program, Wernher von Braun is a source of consistent fascination. Glorified as a visionary and vilified as a war criminal, he was a man of profound moral

complexities, whose intelligence and charisma were coupled with an enormous and, some would say, blinding ambition. Based on new sources, Neufeld's biography delivers a meticulously researched and authoritative portrait of the creator of the V-2 rocket and his times, detailing how he was a man caught between morality and progress, between his dreams of the heavens and the earthbound realities of his life.

System Engineering Analysis, Design, and Development  
Random House

This book examines transatlantic politics through an analysis of 60 years of US-European strategic interaction in space. The significance of space politics for the study of transatlantic relations receives surprisingly little scholarly attention. As a theatre of interaction, transatlantic space politics reflects the vicissitudes of European and US power in the international system. An understanding of space politics is therefore vital in understanding the status and prospect of the transatlantic order. Using established IR theories, the author investigates

transatlantic space politics and proposes a theoretical explanation, which is distinct from the conventional wisdom of the transatlantic security community. More specifically, he distinguishes between the constitutive and regulatory effects of the transatlantic security community, an approach rarely employed in other research in the field. Overall, this book suggests not only that the transatlantic institutional pillar requires repair, but also that the ideational factors need to be revitalised in order to consolidate the transatlantic alliance. This book will be of much interest to students of space power, transatlantic politics, strategic studies, foreign policy and IR/security studies in general.

### **In Peace Prepared**

Springer

Military and defense-related procurement has been an important source of technology development across a broad spectrum of industries that account for an important share of United States industrial production. In this book, the author focuses on six general-purpose technologies:

interchangeable parts and mass production; military and commercial aircraft; nuclear energy and electric power; computers and semiconductors; the INTERNET; and the space industries. In each of these industries, technology development would have occurred more slowly, and in some case much more slowly or not at all, in the absence of military and defense-related procurement. The book addresses three questions that have significant implications for the future growth of the United States economy. One is whether changes in the structure of the United States economy and of the defense-industrial

base preclude military and defense-related procurement from playing the role in the development of advanced technology in the future, comparable to the role it has played in the past. A second question is whether public support for commercially oriented research and development will become an important source of new general-purpose technologies. A third and more disturbing question is whether a major war, or the threat of major war, will be necessary to mobilize the scientific, technical, and financial resources necessary to induce the development of new general-purpose technologies. When the

history of United States technology development in the next half century is written, it will focus on incremental rather than revolutionary changes in both military and commercial technology. It will also be written within the context of slower productivity growth than of the relatively high rates that prevailed in the United States in the 1950s and 1960s or during the information technology bubble that began in the early 1990s. These will impose severe constraints on the capacity of the United States to sustain a global-class military posture and a position of leadership in the global economy.