

AD-A282 370



RAND

*"The Day After..." Study:
Nuclear Proliferation
in the Post-Cold War World*

Volume I, Summary Report

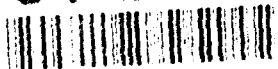
*Marc Dean Millot, Roger Molander,
Peter A. Wilson*

DTIC
ELECTE
JUL 25 1994
S G D

Project AIR FORCE

94 7 21 1 YB

94-23001



DTIC QUALITY INSPECTED 1

The research reported here was sponsored by the United States Air Force under Contract F49620-91-C-0003. Further information may be obtained from the Strategic Planning Division, Directorate of Plans, Hq USAF.

Library of Congress Cataloging in Publication Data

Millot, Marc Dean.

"The day after ..." study : nuclear proliferation in the post-cold war world / Marc Dean Millot, Roger Molander, Peter Wilson.

p. cm.

"Prepared for the U.S. Air Force."

"MR-266-AF."

Contents: v. 1. Summary report

ISBN 0-8330-1459-5

1. United States—Military policy. 2. Nuclear weapons.

3. Nuclear warfare. 4. United States. Air Force—Weapons systems.

I. Molander, Roger C. II. Wilson, Peter (Peter A.), 1943—

III. Title.

UA23.M5743 1993

355.02'17—dc20

93-33243

CIP

RAND is a nonprofit institution that seeks to improve public policy through research and analysis. RAND's publications do not necessarily reflect the opinions or policies of its research sponsors.

Published 1993 by RAND

1700 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138

To obtain information about RAND studies or to order documents,

call Distribution Services, (310) 451-7002

RAND

*“The Day After...” Study:
Nuclear Proliferation
in the Post-Cold War World
Volume I, Summary Report*

*Marc Dean Millot, Roger Molander,
Peter A. Wilson*

*Prepared for the
United States Air Force*

Project AIR FORCE

Accession For	
NTIS	CRA&I <input checked="" type="checkbox"/>
DTIC	TAB <input type="checkbox"/>
Unannounced <input type="checkbox"/>	
Justification	
By	
Distribution /	
Availability Codes	
Dist	Avail and / or Special
A-1	

PREFACE

This study reports the results and analysis of a series of policy exercises conducted under RAND's "The Day After . . ." project on the implications of nuclear proliferation for U.S. national security strategy and policy in the post-Cold War world. The study results and their apparent implications should be of considerable interest to defense planners and policy analysts who are working on the framing, analysis, and "presentation for decisionmaking" of the U.S. and global national security problems attendant on nuclear proliferation—and the proliferation of other so-called "weapons of mass destruction."

The study results also should be of interest to the broad spectrum of individuals in the U.S. Congress, media, academia, and like institutions globally who are tracking and engaging in some fashion the emerging post-Cold War international security issues agenda and associated U.S. and global decisionmaking.

The report should have special appeal to individuals with an interest in political-military gaming and especially to those interested in exercises with a strong "open field" in terms of strategy and policy contents.

This research was conducted in the Strategy, Doctrine and Force Structure Program of RAND's Project AIR FORCE (PAF) for the Director of Plans, Headquarters, United States Air Force. PAF is a federally funded research and development center sponsored by the U.S. Air Force.

CONTENTS

Preface	iii
Figure and Table	vii
Summary	ix
Acknowledgments	xiii
Acronyms	xv
Chapter One	
INTRODUCTION	1
Chapter Two	
DIMENSIONS OF THE PROLIFERATION PROBLEM	3
Post-Cold War Trends	3
Rethinking Approaches to the Proliferation Problem	3
Chapter Three	
"THE DAY AFTER ..." PROJECT	5
Study Goals	5
The Participants	5
Rationale for the Exercise Approach	6
Exercise Format	7
The Scenarios	8
Chapter Four	
POLICY ALTERNATIVES	9
Long-Term Goals Of U.S. Policy Toward Nuclear Proliferation	9
Disposition of the Former Soviet Arsenal	10
Responding to the Use of Nuclear Weapons	11
U.S. Nuclear Weapons Employment Policy	12
Chapter Five	
CONCLUSIONS	13
Slowing or Halting Proliferation	13
"Virtual Abolition"	14
Disposition of the Former Soviet Arsenal	14
Responding to the Threat or Use of Nuclear Weapons	15
Rethinking U.S. Policy on Use of Nuclear Weapons	15

The United States Must Maintain Power Projection Options	15
"Extended Deterrence" Redefined	16
U.S. Reticence About Enforcing a "Nuclear Peace"	16
Defining the National Interest	16
Chapter Six	
IMPLICATIONS FOR THE AIR FORCE	17
Power Projection	17
The Future Role of Nuclear Weapons	18
An Overall Strategy Toward Nuclear Proliferation	19
Appendix: PARTICIPANTS IN ONE OR MORE EXERCISES	21

FIGURE

1. "The Day After ..." Exercise Methodology 7

TABLE

1. Participation in "The Day After ..." Exercises 6

The demise of the Soviet threat has focused attention on the growing threat to U.S. security and international stability posed by the proliferation of nuclear weapons and advanced delivery systems. This report addresses a central question facing U.S. national security planners today: How should the U.S. respond to nuclear proliferation in the post-Cold War world?

The report has two purposes: (1) to illuminate critical policy issues surrounding nuclear proliferation and (2) to present key conclusions and policy implications from "The Day After . . ." project, a RAND study conducted for the Air Force that explored the consequences of nuclear-weapons-related proliferation for U.S. defense strategy.

"THE DAY AFTER" EXERCISES

"The Day After . . ." project was fundamentally exploratory in nature. It comprised four series of policy exercises. Each exercise series presented teams of participants with scenarios that postulated the use of nuclear weapons against the U.S., its allies, or nonaligned third parties and prompted the teams to formulate policy responses. The more than 200 participants were drawn from executive agencies, Capitol Hill, the military services, journalists covering national security, and policy-research organizations in Washington, D.C. The output of each series was a report highlighting policy issues and alternatives for a hypothetical president of the United States.¹

- The first exercise series, "The Day After . . . in the USSR," examined issues arising from the loss of central control over an extant nuclear arsenal and the appearance of multiple nuclear command authorities.
- The second series, "The Day After . . . in the Greater Middle East," examined U.S. capacity and willingness to project power when challenged by a nuclear-armed regional opponent.
- The third series, "The Day After . . . in Korea," in which an important U.S. ally is subject to nuclear attack by a regional opponent, examined the evolving character of the U.S. "extended deterrence" commitment.

¹Marc Dean Millot, Molander, Roger C., Wilson, Peter A., *"The Day After . . .": Nuclear Proliferation in the Post-Cold War World*, Volume II, *Main Report*, RAND, Santa Monica, CA, July 1993.

- The fourth series, "The Day After . . . in South Asia," involved nuclear conflict between two traditionally hostile but newly nuclear-armed states, neither of which is closely allied with the United States.

CENTRAL POLICY ISSUES

Participants identified three sets of issues that policymakers are likely to face in grappling with the problems posed by nuclear proliferation. They then suggested alternatives for addressing them.

1. **A More Activist Approach Toward Nuclear Proliferation**—During the Cold War the U.S. has viewed nuclear proliferation as a secondary security concern. This view is changing. While most participants favored greater emphasis on non-proliferation policies such as the nuclear Nonproliferation Treaty (NPT), they also doubted that such policies would succeed. Many were struck by the fact that the nonproliferation regime's few "problem cases" were the countries most likely to threaten U.S. interests in the future. With the acceleration of the potential for nuclear proliferation in recent years, the urgency of pursuing more active non-proliferation policies is increasing.

Three main alternatives for contending with this problem emerged:

- a. Offering security guarantees to governments that might be tempted to acquire nuclear weapons to assure their own security
 - b. Pressing for "virtual abolition" of nuclear weapons worldwide
 - c. Accepting the inevitability of proliferation and attempting to build a stable multipolar deterrence regime.
2. **Responding to the Threat or Use of Nuclear Weapons**—Many participants advanced a new thesis concerning the utility of nuclear weapons: that a large nuclear arsenal no longer provides the United States with a net national security benefit. In part as the lesson of DESERT STORM, they saw the U.S. military as capable of maintaining clear military superiority over potential regional opponents—with attendant deterrent effects on such adversaries—by non-nuclear means. Three subthemes emerged during the discussion of this issue:
 - a. **New U.S. Power Projection Options**—In the face of an enemy with a small, survivable nuclear arsenal, most participants judged force projection plans based on the DESERT SHIELD experience to be seriously deficient. In this context, participants tended to oppose emphasizing investments in nuclear counterforce options as a means of neutralizing a small and hard-to-destroy nuclear arsenal. Instead, they favored high-confidence, damage-limiting capabilities, combining accurate conventional weapons, advanced C³I systems, active defense, and tactics designed to minimize the exposure of U.S. forces.

- b. **U.S. Reticence About Enforcing a "Nuclear Peace"**—Many participants challenged the notion that the United States has an immediate stake in forcefully diminishing the military and political utility of any next-use of nuclear weapons and doubted that our long-term interest in a no-use norm was sufficient to justify action to the U.S. public.
 - c. **Defining the National Interest**—The exercises challenged the participants to come to judgment on "vital" U.S. national security interests. Two exercises ("The Day After . . . in the USSR" and "The Day After . . . in South Asia") were not seen as placing vital U.S. interests immediately at risk. In both, the dominant inclination—while a somewhat "unhappy consensus"—was one of nonintervention. On the other hand, in the two scenarios that involved substantial threats to U.S. economic and security interests ("The Day After . . . in the Greater Middle East" and "The Day After . . . in Korea"), the dominant schools of thought favored military engagement (with a strong preference against reliance on nuclear weapons).
3. **Rethinking U.S. Policy on Using Nuclear Weapons**—All four exercises revealed a strong tendency for the U.S. to rely on conventional, rather than nuclear, means to extend military security guarantees to friends and allies. Although there was no consensus, many participants argued that it is counterproductive—and for the foreseeable future probably unnecessary—to base extended deterrence on nuclear guarantees, even in the face of possible nuclear provocation by an opposing regional power.

Overall, the exercises emphasized that the U.S. needs to rethink fundamental aspects of its military strategy. Furthermore, consideration of nuclear-armed adversaries should become a critical factor in defining the shape and design of future U.S. forces.

IMPLICATIONS FOR THE AIR FORCE

The results of "The Day After . . ." exercises provide Air Force planners with an "early warning" of a forthcoming comprehensive and challenging national debate about U.S. national security strategy after the Cold War. As that debate progresses, the decisions on three interlocking nuclear proliferation-related issues will have a profound effect on the roles, missions, and shape of the U.S. Air Force:

- Ensuring a credible power projection capability against potential regional nuclear adversaries
- Charting the future role of nuclear weapons in U.S. defense strategy
- Developing an overall long-term strategy toward the nuclear proliferation threat.

The Air Force is in a unique position to influence the national decision on each of these issues.

On Power Projection

Broad agreement exists on the desirability of maintaining a potent and viable U.S. power projection capability to counter future would-be regional hegemons who would challenge U.S. and global "vital interests." This view was reflected in the exercises in a strong consensus in support of a U.S. effort to develop a very high confidence, conventional, damage-limiting capability against the nuclear arsenals of potential regional adversaries. Meeting this extraordinarily demanding objective—if it can be done at all—assuredly will require a multifaceted approach, integrating offense, active and passive defense, and advanced surveillance and command and control capabilities.

An overarching operational need is to engage the regional opponent with forces that can operate effectively from beyond the enemy missile range or independently of fixed bases. Classic "force projection" deployments of air and ground units like DESERT SHIELD probably will occur only after the regional nuclear adversary's long-range bombardment capability has been suppressed to a point where the U.S. theater commander believes that his regional active and passive defense could absorb any surviving "escapees" from counterforce efforts. Air power is uniquely suited to the missions implied by these concerns.

On the Future Role of Nuclear Weapons

The future role of nuclear weapons in U.S. defense strategy is a critically important and unresolved issue. One major policy issue in this context is whether the United States will maintain the option of delivering small numbers of nuclear weapons in limited theater or "pre-strategic" operations with other than ICBMs or U.S.-based long-range bombers. In particular, do military or political needs exist to retain forward-based nuclear-capable aircraft? The resolution of this question hinges in part on whether advanced conventional munitions can substitute for nuclear weapons in theater missions to reassure allies and to deter potential aggressors.

The Air Force finds itself as the only service that will maintain the "full range" of nuclear weapons delivery systems during the rest of this decade, from short-range "tactical" to long-range "strategic" capabilities. By its actions—choosing to articulate and strongly promote the military and political rationale for maintaining a forward-based nuclear capability—or its inaction—choosing to allow the number of dual-capable aviation units to decrease steadily—the Air Force could significantly affect the outcome of this debate.

On an Overall Strategy Toward Nuclear Proliferation

Assuming no decrease in the U.S. commitment to maintain a robust power projection capability as part of its extended deterrence commitment to friends and allies, nuclear proliferation becomes a central post-Cold War national security issue. In this context, the Air Force will have to take a position on whether the U.S. can forgo reliance on nuclear weapons as a means of ensuring that capability.

ACKNOWLEDGMENTS

The authors wish to acknowledge the extensive and useful comments on earlier drafts of this report by John Schrader, David Shlapak, Ken Watman, and Zalmay Khalilzad.

ACRONYMS

CIS	Commonwealth of Independent States
EMP	Electromagnetic Pulse
IRBM	Intermediate-Range Ballistic Missile
MRC	Major Regional Contingency
NPT	Nuclear Nonproliferation Treaty
NSC	National Security Council
PAF	Project AIR FORCE
SLBM	Submarine-Launched Ballistic Missile
SSBN	Fleet Ballistic Missile Submarine
RV	Reentry Vehicle

This report addresses a central question facing U.S. national security planners today: How should the U.S. respond to the range of problems posed by the potential proliferation of nuclear weapons and advanced delivery systems in the post-Cold War world?

This report has two purposes: (1) to illuminate critical policy issues surrounding nuclear proliferation and (2) to present key conclusions and policy implications from RAND's "Day After . . ." project, a study conducted for the Air Force that explored the consequences of nuclear proliferation for U.S. defense strategy in the post-Cold War world.¹ An appreciation of these issues should help inform a wide range of defense analysis and decisions on future force structure, military strategy, and operational doctrine.

The report has six chapters. Chapter Two outlines the current context of the nuclear proliferation problem. Chapter Three describes the goals and approach of the "Day After . . ." project. Chapter Four discusses key policy problems raised by the study. Chapter Five explores alternatives for addressing these problems. Chapter Six discusses the implications for the Air Force.

¹This summary report has two companion volumes. Volume II, directed mainly to members of the analytic community, presents a comprehensive account of "The Day After . . ." project's methodology and narrates the course of the exercises as we conducted them. Volume III, directed mainly toward educators and students, provides the materials necessary to stage "The Day After . . ." exercises.

DIMENSIONS OF THE PROLIFERATION PROBLEM

The starting point of the "The Day After . . ." project is the steady diffusion of nuclear weapons-related technologies. The number of countries technically able to build or acquire nuclear weapons will continue to grow. Furthermore, such weapons will become progressively easier to manufacture as production technologies advance and diffuse globally. In this context, some growth in the number of nuclear weapons states—nations that maintain "in-being" nuclear arsenals—is inevitable. Perhaps even more likely to increase are the countries that maintain "virtual" nuclear arsenals—those that can be activated on short notice or within a nation's "strategic warning time." The loss of central control over an existing nuclear arsenal could further increase the number of nuclear-weapon states.

POST-COLD WAR TRENDS

Trends in international relations set in motion by the end of the Cold War also increase the likelihood that the growing number of countries will be able to develop and deploy nuclear weapons. First, many political restraints that existed over the past 40 years have been weakened. The "nuclear weapons option" could be reconsidered by the national leaderships of many countries, including former allies of the U.S. and the Soviet Union, as well as members of the formerly nonaligned world. Second, the end of the Cold War has intensified the disintegration of multiethnic states and increased the possibilities for wars to redraw national borders. From Eastern Europe through Central Asia, territorial conflicts among nationalistic ethnic groups are a worrisome source of instability.

RETHINKING APPROACHES TO THE PROLIFERATION PROBLEM

Given these realities, the possibility of nuclear weapon "use" by a new nuclear power—from brandishing in crisis to actual detonation in conflict—is worthy of attention. At a minimum, the United States probably will face crises in which a new nuclear power brandishes nuclear weapons. Consequently, a critical need exists to revisit our national approach to the nuclear proliferation problem. Several reasons for such a review are readily apparent.

First, for most of the past four decades, countering threats to U.S. security from the spread of nuclear weapons has been secondary to containing Soviet expansionism

and influence. After a very brief and largely fruitless effort to deny the United Kingdom and France access to nuclear weapons technology, the U.S. quickly turned to the problem of integrating the British and French arsenals to deter Soviet aggression in Europe. The desire to thwart Soviet efforts to gain geopolitical advantage in key regions constrained the United States in its efforts to keep such friends as Israel and Pakistan from acquiring nuclear weapons; although in the case of Israel, the intricacies of the Middle East conflict also played their role. U.S. efforts to discourage South Korea and Taiwan from developing nuclear weapons proved largely successful. By accepting the continuation of civilian nuclear projects, however, the United States enabled these states to protect the option to pursue military programs at a later date. Security guarantees may have allowed the United States to limit these countries' nuclear weapons potential, but Cold War considerations discouraged the United States from bringing the full weight of its power to bear in the cause of non-proliferation. With the Cold War ended, the problem of combatting nuclear proliferation should gain new stature.

Second, the U.S. has treated proliferation as an issue to be addressed primarily through diplomacy. Current U.S. strategy toward nuclear proliferation emphasizes nonproliferation through persuasion, the norm of the Nuclear Non-Proliferation Treaty (NPT), and export controls. These policies, however, have suffered from a lack of comprehensive inspection and enforcement mechanisms. Furthermore, the U.S. defense community has barely begun to consider the military dimension of a strategy to address the proliferation problem, such as options to extend nuclear deterrence beyond Europe and Japan, extend negative security assurances to potential nuclear adversaries, or preemptively eliminate nascent nuclear arsenals.

If current nonproliferation policies fail, what will the United States do? More specifically:

- If more than one nuclear power emerges from the former Soviet Union, how will the United States limit the damage to its national security interests and strategy?
- If Iran or Iraq gets the bomb, how will the United States manage subsequent threats to the free flow of Persian Gulf oil?
- If a new nuclear power uses nuclear weapons against U.S. forces or allies, how should the U.S. respond?
- If a nuclear crisis between third parties erupts where U.S. national interests are not immediately at stake, how should the United States respond?

The "Day After . . ." study was designed to explore these kinds of questions.

This chapter describes the goals and methods of "The Day After . . ." project.

STUDY GOALS

The project was designed to survey the Washington policy support community's thinking on a range of issues surrounding nuclear-weapons proliferation. It was fundamentally exploratory in nature. Its goal was to identify issues and gain a sense of the alternative strategies and policies likely to be considered in the policy debate in the Washington.

THE PARTICIPANTS

To meet our objective, we sought a group of participants broadly representative of the people who directly support the development of U.S. defense policy and who are likely to participate in the future development, shaping, and "marketing" of policy options to cope with nuclear proliferation and its consequences. The sample was not statistically random; we purposely sought out the people who participated in our exercises. We also sought a broad range of views and individuals from all points on the political spectrum. We sought civilians as well as military personnel, people from outside the government as well as those within, and junior staffers as well as their seniors.

We drew upon both current staffers and individuals who once served in the government but now hold jobs as defense consultants. We also included defense analysts from public information institutions such as the International Institute of Strategic Studies, the Center for Strategic and International Studies, the Natural Resources Defense Council, The Brookings Institution, the American Academy of Arts and Sciences, the Washington Council on Nonproliferation, and the Committee for National Security. We also selected from the community of defense journalists from the major print media, such as *U.S. News & World Report*, *The Washington Post*, and the *Wall Street Journal*. In addition we drew upon other participants not easily categorized into particular groups, as well as some foreign officials. Whether we met our goal of balanced representation is for the reader to decide after reviewing Table 1 (that categorizes the participants in "The Day After . . ." exercises according to the

Table 1
Participation in "The Day After . . ." Exercises

Institution	At Least One	"USSR"	Greater Middle East	Korea	South Asia
OSD	13	6	7	3	6
Joint Staff	6	4	2	2	4
Air Staff	32	12	9	15	10
Other DoD	17	9	7	4	1
State/Arms Control and Disarmament Agency	13	11	3	2	3
DoE/Labs	4	1	1	2	2
Intelligence Community	13	5	5	2	0
Capitol Hill	20	20	5	2	3
RAND	39	19	9	27	5
Other Defense Consulting	26	14	13	10	3
Public Information Organizations	30	18	8	8	6
Media	5	4	1	1	2
Other	21	20	2	1	1
TOTAL	239	143	77	79	46

institutions that make up the Washington policy support community), examining the appendices listing the individual participants (see the Appendix), and reading the results and analysis documented herein.

RATIONALE FOR THE EXERCISE APPROACH

The research team considered a number of alternative methods to explore how the Washington policy support community might approach the problem of proliferation. One approach we considered was to conduct an extensive review of the related literature, including nuclear proliferation, strategic relations in the post-Cold War world, and regional security. This approach had the advantage of building on existing opinion and knowledge. The method was rejected, however, because the research team's purview would have been restricted to the small segment of the policy community that publishes. The team also considered an extensive program of interviews that would allow us to examine individuals' views in some detail. This approach was rejected as too time-consuming. A survey employing a questionnaire was considered briefly because it would simplify the process of comparing and contrasting views. This approach was rejected for a number of reasons: the team had no way of creating a random sample of the relevant community, the results expressed in percentages might suggest more accuracy and precision than the research team could claim, and responses would depend too much on the wording of questions.

The research team also considered two-sided gaming, with one group of participants playing the United States and another a new nuclear power. In this approach, alternative scenarios could be explored while the views of participants would be put to the test of a concrete situation as well as to the views of other participants. This method was rejected because the individual games might proceed quite differently, and this would limit the ability of the research team to compare participants' strate-

gies, policies, and options. Gaming would also place heavy demands on the research team because running the games would be time-consuming and distract team members from observing the participants.

EXERCISE FORMAT

The approach we selected involved a large number and wide range of defense experts in a series of "case study"-type exercises designed to focus debate and discussion on concrete proliferation-related problems. The basic concept was to present groups of participants with hypothetical crises and to ask them to develop appropriate policy responses. Reflecting the enormous changes flowing from the political revolutions in Eastern Europe and the former Soviet Union between 1989 and 1991, the Persian Gulf War, and the continued military tension in South and East Asia, four scenarios developed for the series of exercises were employed as the research team's primary vehicle for research. While they involved particular countries and regions of concern to U.S. policymakers today, the scenarios were written to highlight and explore more general policy problems related to nuclear-weapons proliferation.

Each exercise began with an examination of the decisions confronting a U.S. President on "The Day of . . ." a critical change in the nuclear status quo within the context of the scenario of the exercise. Groups of 6 to 12 participants acted as teams of advisors to the President of the United States. Each group met in a deliberative process akin to a meeting of the National Security Council (NSC)-level officials that might occur immediately before an NSC meeting with the president. The output of the first step (and subsequent steps) was a decision memo addressed to the president. In a second step, the exercise turned to "The Day After . . ."—nuclear use in that same scenario context. As a final decision point, the exercise moved to "The Day Before . . ."—months or years before the envisioned "Day of . . ."—and considered the challenge of adopting policies today to minimize the prospects that such scenarios would occur and to mitigate their consequences. Figure 1 shows the selected methodology.

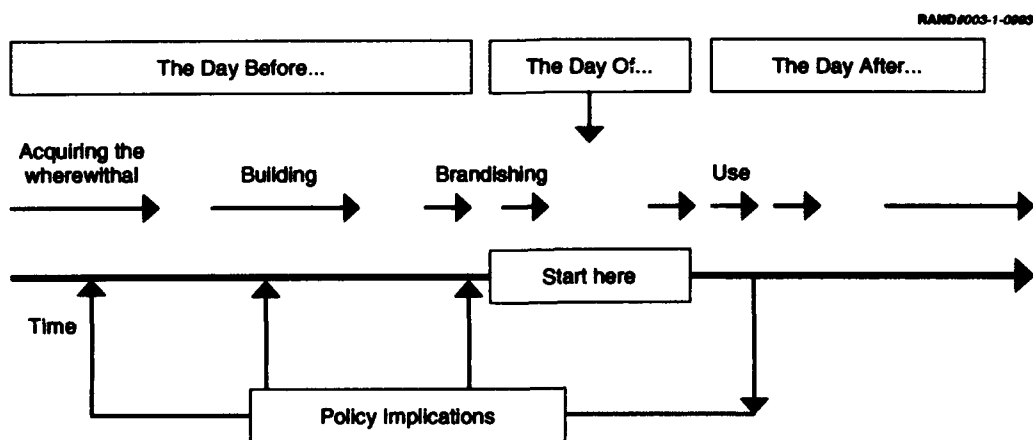


Figure 1—"The Day After . . ." Exercise Methodology

THE SCENARIOS

The project comprised four exercise scenarios.

The first, "The Day After . . . in the 'USSR'," examined issues arising from the loss of central control over an existing nuclear arsenal and the appearance of multiple nuclear command authorities. This type of scenario now appears quite plausible in light of the Soviet Union's breakup. Other nuclear armed countries—such as China, North Korea, India, and Pakistan—could follow a similar route.

The second scenario, "The Day After . . . in the Greater Middle East," examined U.S. capacity and willingness to project power when challenged by a nuclear-armed regional opponent. A central concern here was that future U.S. decisions to intervene in regional conflicts may be made "under the nuclear gun" with attendant military and political constraints not seen in Operation DESERT STORM.

The third scenario, "The Day After . . . in Korea," in which an important U.S. ally is subject to nuclear attack by a regional opponent, examined the evolving character of the U.S. "extended deterrence" commitment. Of particular interest is the prospect that in such a context missions previously assigned to nuclear weapons might be assumed by conventional forces.

The fourth, "The Day After . . . in South Asia," involved nuclear conflict between two traditionally hostile but newly nuclear-armed states, neither closely allied with the United States. This scenario raised basic issues about the U.S. role in maintaining a global nuclear peace.

We cannot and do not claim that our findings have statistical relevance or that the policy alternatives described in this report are the only ones existing in the Washington policy support community. We do believe that we have uncovered the major schools of thought, that is, the ones that will dominate policy debate in Washington in at least the near future.

This chapter presents policy options identified by participants during the study as the most credible for dealing with the principal proliferation-related problems of the post-Cold War era.

LONG-TERM GOALS OF U.S. POLICY TOWARD NUCLEAR PROLIFERATION

If the U.S. were to take up the challenge of identifying and leading a global navigation toward long-term nonproliferation goals, group discussion in the "Day After . . ." exercise suggests three alternative policies worthy of consideration.

- 1. A highly restrictive two-tiered international system of nuclear "haves" and "have-nots."** This goal rests on two principal assumptions: that the existing "have-nots" (and perhaps all the "haves" beyond the permanent members of the U.N. Security Council) can be convinced that nuclear weapons are not needed to assure their security and that with increased efforts even determined would-be "haves" can be denied access to nuclear weapons. Achieving this outcome will require a serious U.S. effort to address the security concerns of allies and friends (through credible "extended deterrence" assurances) as well as potential adversaries (through negative security assurances). It will also require a far stricter nuclear weapons-related export control regime and a far more effective means of inspection and enforcement than exists today.
- 2. An ever-expanding nuclear club with new members integrated into the nuclear order and educated to norms of nuclear behavior and balances.** This alternative assumes that: from time to time, current "have-not" nations or new nations will decide that nuclear weapons are an imperative for their security and that the world community cannot muster the political will necessary to impose a truly tight nonproliferation regime to thwart such efforts. As numbers grow, this approach implies an ability—yet to be demonstrated—to create a web of stable bilateral and multiparty nuclear deterrence relationships, almost certainly in individual cases starting from some dynamic and danger-laden environment. On the technical side, it will have to include programs that transfer technology to assure reliable command and control, safe weapons, and a minimized risk of crisis instability.

- 3. The "virtual abolition" of nuclear arsenals underwritten by a comprehensive and intrusive international inspection and enforcement regime.** This option assumes that the Nonproliferation Treaty is doomed to failure because the "two-tiered" regime of nuclear "haves" and "have-nots" lacks legitimacy; on balance, nuclear weapons no longer serve U.S. national security interests; and U.S. conventional military capabilities will continue to be vastly superior to those of any conceivable adversary. According to this option, if they could agree to eliminate all but that small number of nuclear weapons required to deter nuclear attacks on their homelands—and a "virtual nuclear arsenal" of nuclear weapons production capability to hedge against breakout from the regime, virtual nuclear abolition by today's major nuclear powers would tend to delegitimize the efforts of other states to pursue nuclear weapons. Furthermore, it would legitimate efforts by the United States and the "former" major nuclear powers to resort to assertive means to halt proliferation.

Establishing a "no-nuclear" norm would legitimate the highly intrusive challenge inspections necessary to assure compliance with nonproliferation and provide warning of potential breakouts from the regime. The warning gained by intrusive inspections would give the international community time to respond with a graduated series of economic and political sanctions. It also would provide an opportunity to build international consensus for military operations by the former major nuclear powers through the use of advanced conventional weaponry against nascent nuclear arsenals should that step become necessary.

The design and execution of a virtual abolition strategy would have to take into account the risk that one or more potential international predators might perceive the new nuclear-weapon environment as an opportunity to overturn the international status quo. After all, by historic standards, small at-the-ready arsenals of the declared nuclear-weapons states might be viewed as a less daunting military capability to challenge during a covert nuclear buildup.

DISPOSITION OF THE FORMER SOVIET ARSENAL

Group deliberation in "The Day After . . . in the 'USSR'" covered three possible policies regarding the ultimate disposition of the former Soviet Union's nuclear arsenal:

- 1. Peaceful Russification** assumes that the non-Russian republics will be convinced that it is in their continuing interest to forswear nuclear weapons. If concerns about potential future Russian coercive efforts are not allayed in Ukraine, for example, the U.S. may be asked to extend security guarantees as a condition of assuring denuclearization. In this context, an aggressive U.S. policy that insists on Russification risks isolating the non-Russian republics from the West. Such a U.S. policy could cause the non-Russian republics (particularly Ukraine) to tighten their grip on the nuclear weapons already in their possession and consider ways to acquire such weapons independently.

2. **Confederal Control** as an alternative outcome assumes the feasibility of reversing the disintegration of the Commonwealth of Independent States (CIS)—at least insofar as nuclear weaponry is concerned—and of creating stable arrangements for shared interrepublic command and control. This option emerges if it becomes clear—for whatever reasons—that peaceful Russification is not possible. A “too early” U.S. policy shift toward confederal control, however, might be seen in Russia as an unfriendly effort to tie Russia down in the complexities of such an arrangement and could be an excuse for forceful Russification. Furthermore, if adopted “too late,” confederal control could encourage fractionation.
3. **Controlled Fractionation** as an alternative assumes that Russia would not interfere if one or more non-Russian republics decide to become nuclear powers and that a sustainable balance of “responsible” nuclear powers can be created in the former Soviet Union. Such an outcome, and containment of the international effects of such fractionation on proliferation, could not be accomplished without substantial U.S. involvement. As noted above, if Russia is relentless in insisting that Russification is the only acceptable outcome, a U.S. move to explore fractionation may be seen as hostile. The risk also exists that talks on controlled fractionation will fail, setting the scene for an interrepublic crisis and possibly even a conflict leading to nuclear weapon use.

RESPONDING TO THE USE OF NUCLEAR WEAPONS

If nuclear weapons are used in a future war, will the effect be to lower the threshold for subsequent nuclear use and cause other states to acquire nuclear weapons? If so, preventing the outbreak of nuclear hostilities or “quenching” the nuclear conflict at an early stage probably should be considered a vital U.S. national interest. Thrusting oneself into a nuclear conflict, however, is not without cost, especially the possibility of nuclear retaliation against the U.S., its overseas forces, or allies. Results of the “Day After . . .” exercises imply two broad alternative policies for the U.S. role in maintaining the indivisibility of the global nuclear peace:

1. **Nonintervention** in which the U.S. responds to nuclear-weapons use only if the attack is directed against the U.S. or its most important allies. This approach assumes that U.S. military capabilities are not now, and probably never will be, equal to the task of eliminating the nuclear forces of one or both parties to a nuclear conflict. It also assumes that the domestic and international political support necessary for such an operation against powers not aligned against the U.S. will not be forthcoming. This policy also implicitly carries the hope that the consequences of the “next use” of nuclear weapons will reinforce a “no use” ethic rather than resulting in the sense that nuclear use is an acceptable tool of statecraft or even a means to military success.
2. **Conditional Intervention** in which the U.S. would only move to stop a nuclear war where it had the military capability and political support to “defang” a nuclear aggressor or quench a bilateral or multilateral nuclear conflict. This policy assumes that the long-term consequences of nonintervention are likely to be worse than the immediate risks of active engagement and that the United States can—with

the political support of the other major powers—"enforce" the nuclear peace at least among states with small nuclear arsenals. The implication is that a highly effective and preferably conventional U.S. damage-limiting capability exists and further that the risks of retaliation against the U.S. or U.S. forces are manageable—possibly through the deployment of defenses.

U.S. NUCLEAR WEAPONS EMPLOYMENT POLICY

The success of Operation DESERT STORM has created the hope that in the post-Cold War world conventional weapons can replace nuclear forces as a means of deterring aggression and reassuring allies. Just how far this trend to deemphasize nuclear weapons will go in years to come is an important issue facing U.S. defense planners. Participants' discussion in the exercises pointed to two broad alternative U.S. policies toward nuclear weapons employment:

- 1. A Continuation of Flexible Response** in which the United States responds to aggression with the level of force required to terminate a war quickly and on acceptable terms—including the possible first use of nuclear weapons. The principal argument behind this posture is that conventional weapons will never match nuclear weapons as a deterrent in the eyes of U.S. allies because an adversary is far less likely to believe he can achieve his military goals at a reasonable cost if he faces the prospect of nuclear rather than conventional retaliation. A flexible response strategy requires that the United States maintain a broad spectrum of nuclear weapons capabilities, although the permanent basing of U.S. nuclear forces on allied territory that characterized the U.S. nuclear posture in Europe presumably would not necessarily be an imperative.
- 2. Virtually No Use** is consistent with a strategy in which nuclear weapons are heavily de-emphasized—such as in the "virtual abolition" approach where the U.S. would rely on a small in-being nuclear arsenal to discourage nuclear attacks on the U.S. and its forces and on a large virtual arsenal to deter breakout. This policy assumes that in the post-Cold War world conventional weapons constitute a viable alternative to nuclear weapons, from both military and political standpoints. For the U.S. to defeat a regional nuclear-armed adversary without resorting to nuclear weapons would require significant improvements in U.S. conventional military capabilities, especially in terms of intelligence gathering and targeting, conventional counterforce capability, and aerospace defense.

The exercises attempted first to identify the dominant features of the emerging landscape—those fundamental issues that U.S. strategists must address in responding to nuclear proliferation. Our conclusions, therefore, are not quantitative but rather a synthesis of the main themes articulated by participants throughout the four series of exercises. These themes fall into three overarching categories:

1. Slowing or halting the spread of nuclear weapons and technology
2. Responding to threatened or actual use of nuclear weapons
3. Rethinking U.S. nuclear weapons employment policy.

SLOWING OR HALTING PROLIFERATION

The wide consensus was that a major focus of U.S. national security policy should be to slow and attempt to reverse nuclear proliferation. Although the exercises centered on the threat of nuclear-weapon use, many participants concluded that U.S. policy should concentrate on preventing such scenarios from becoming possible. This viewpoint spawned significant interest in pursuing a more rigorous and globally inclusive version of the NPT. Nevertheless, participants did not have confidence that the current “two-tiered” system of nuclear arsenal haves and have nots was sustainable in its current form. Participants noted that the few problem cases in the current nonproliferation regime were among the countries that U.S. military planners believed most likely to threaten U.S. interests and allies in the coming years. Further, widespread concern was that the Soviet Union’s breakup would lead Russia and other former Soviet republics to behave irresponsibly in dealing with the export of nuclear weapons-related materials, technology, and expertise.

Also the consensus was that, in the absence of an enforceable agreement among the great powers to support a rigorous nonproliferation regime, more nuclear-armed states would emerge. Most worrisome to many participants was that a powerful motivating force for proliferation might be a nation’s sense of insecurity without the assurance of reliable and powerful outside assistance. They also expressed concern that several important regional powers (especially in and around the former Soviet Union), some hostile to U.S. interests, would find the nuclear option compelling.

"Virtual Abolition"

Given the widespread concern about sustaining a two-tiered nuclear nonproliferation regime, many participants entertained more radical approaches to halt and even reverse nuclear proliferation. During the exercises, one school of thought favored serious examination of a global goal of the "virtual abolition" of nuclear arsenals.

To summarize virtual abolition, many participants said that if the nuclear haves would relinquish all but a handful of weapons, the number of have-nots hoping to become haves would decline. Then the remaining "wannabes" could be isolated and dealt with—if necessary, by force—by the former major nuclear powers on behalf of the world community.

In the absence of a more thorough analysis, accepting the chain of assumptions in this new approach understandably presented a formidable challenge to most participants. Those who favored serious exploration of this approach recognized many practical problems in the way of success but believed that if virtual abolition appeared feasible, it would be advantageous to the U.S. to lead the way. The intuition of many in this group indicated that U.S. military operations would have a greater chance of success if neither the United States nor its adversary possessed nuclear weapons than if both did. All recognized, however, that a virtual abolition strategy would be diplomatically challenging and carry considerable risks. They sought an in-depth examination of the costs, benefits, and risks of virtual abolition, which is intellectual terra incognita in comparison to a more highly restrictive two-tiered regime or one that attempts to integrate new emerging nuclear powers. Such a study would examine the feasibility of virtual abolition and various approaches to that end, the potential influence of virtual denuclearization by the major powers on nonproliferation globally, the impact of ending our reliance on nuclear weapons in a variety of potential future wars, enforcement regimes, and the possibilities of breakout. The study also would compare the assumptions, costs, and risks of virtual abolition with those of today's two-tiered regime and the option of working toward an expanding club of "responsible" nuclear powers.

Disposition of the Former Soviet Arsenal

The future of the ex-Soviet nuclear arsenal is the main proliferation problem facing the United States and the world today. Failure—by the former Soviet republics and the rest of the world's major powers—to deal with this critical issue will hasten the threats to U.S. and global security outlined in our exercises. While events to date and plans incorporated into the strategic arms reduction agreements suggest the ultimate consolidation of the former Soviet nuclear arsenal under Russian control, the continued tension between Russia and Ukraine on military and other matters is a concern. The protracted draw-down schedule of strategic weapons located outside Russia exacerbates this problem.

RESPONDING TO THE THREAT OR USE OF NUCLEAR WEAPONS

Throughout the exercises, and especially in "The Day After . . . in the Greater Middle East" and "The Day After . . . in Korea," participants came to appreciate the high political and military leverage that a regional power could obtain by possessing a small survivable nuclear arsenal. Put simply, a "recalibration" of the relative importance of different levels of nuclear firepower apparently is ongoing for foreseeable crisis contingencies. In regional contingencies—because of inherent missile defense leakage problems—a small number of missiles can threaten U.S. power projection operations and U.S. efforts to protect the high-value targets (such as national capitals) of regional allies. A regional adversary armed with a few well-hidden mobile medium range nuclear-armed ballistic missiles would present the U.S. with a formidable military and strategic problem. In the exercises, this kind of threat introduced enormous conservatism into the calculations of participants contemplating U.S. military intervention.

RETHINKING U.S. POLICY ON USE OF NUCLEAR WEAPONS

Many military participants advanced a new thesis concerning the utility of nuclear weapons: that a large nuclear arsenal no longer provides the United States with a net national security benefit. As a result of DESERT STORM, they saw the U.S. military as being able to maintain clear superiority over potential regional opponents—with attendant deterrent impact on such threats—by nonnuclear means. The adherents to this new school of thought grew steadily as the exercise series progressed.

Nevertheless, many participants disputed this position. They saw conventional weapons as imperfect substitutes for nuclear weapons. In particular, they believed that nuclear weapons provide a hedge against the possibility that a small forward presence of American troops might not be reinforced in time to halt an enemy's conventional assault. Moreover, they doubted that U.S. regional allies would always consider America's conventional defense to be as great a quality of deterrent to regional aggression—possibly conducted under the shadow of a regional adversary's nuclear arsenal—as the threat of U.S. nuclear retaliation.

Given the possibility of new regional nuclear adversaries, the continuing credibility of the U.S. security guarantee to allies will have to be examined carefully if extended deterrence is to remain an important aspect of U.S. defense strategy. The key issue for defense planners is whether U.S. conventional weapons are a viable substitute for U.S. nuclear capabilities, particularly as judged by potential adversaries and regional allies.

The United States Must Maintain Power Projection Options

In the face of an enemy with a small survivable nuclear arsenal, most participants judged any force projection plans based on the DESERT SHIELD experience to be seriously deficient. Especially in the "Greater Middle East" exercises, a consensus favored operating with fewer forward deployed forces and a U.S. investment in improved theater aerospace defenses and radically enhanced conventional counter-

force capabilities. In this context, participants generally were opposed to emphasizing investments in nuclear counterforce options as a means of neutralizing a small and hard-to-destroy nuclear arsenal.

"Extended Deterrence" Redefined

All four exercises revealed a strong tendency for the U.S. to turn toward greater reliance on conventional means to extend military security guarantees to friends and allies. Many believed that it is militarily, politically, and morally counterproductive and, for the foreseeable future, probably unnecessary to base extended deterrence too heavily on nuclear guarantees even in the face of possible nuclear provocation by an opposing regional power.

U.S. Reticence About Enforcing a "Nuclear Peace"

Many participants challenged the notion that the United States has a stake in forcibly diminishing the military and political utility of any next use of nuclear weapons independent of the particular crisis. This view was particularly true in "The Day After . . . in the 'USSR'" and "The Day After . . . in South Asia." Although participants recognized that the "successful" use of nuclear weapons could undermine the credibility of U.S. nonproliferation policy and precipitate regional nuclear arms races, they judged the United States as unwilling or unable to pay the price necessary to enforce an "indivisible" global nuclear peace. Where the nuclear antagonists are not aligned with the United States, most participants favored what might be called a "Yellowstone strategy"—standing back and allowing the "nuclear fires" to burn out on the territory of the combatants.

DEFINING THE NATIONAL INTEREST

All four exercises challenged the participants to come to judgment on "vital" U.S. national security interests. Two exercises ("The Day After . . . in the 'USSR'" and "The Day After . . . in South Asia") were not seen as placing vital U.S. interests at risk. In both, the dominant inclination—while a somewhat "unhappy consensus"—was one of nonintervention. On the other hand, in the two scenarios that involved substantial threats to U.S. economic and security interests ("The Day After . . . in the Greater Middle East" and "The Day After . . . in Korea"), the dominant schools of thought favored military engagement (with a strong preference against the early use of nuclear weapons).

IMPLICATIONS FOR THE AIR FORCE

The results of "The Day After . . ." exercises provide Air Force planners with an "early warning" of a comprehensive and challenging national debate about U.S. national security strategy after the Cold War. As that debate progresses, the decisions on three interlocking nuclear proliferation-related issues will have a profound effect on the roles, missions, and shape of the U.S. Air Force:

- Ensuring a credible power projection capability against potential regional nuclear adversaries
- Charting the future role of nuclear weapons in U.S. defense strategy
- Developing an overall long-term strategy toward the nuclear proliferation threat.

Through a combination of accident and design, the Air Force is in a unique position to influence decisions on each of these issues.

POWER PROJECTION

Broad agreement exists on the desirability of maintaining a potent and viable U.S. power projection capability to counter would-be regional hegemons who would challenge U.S. and global "vital interests." This viewpoint was reflected in the exercises in the strong consensus supporting a U.S. effort to develop a high-confidence, conventional, damage-limiting capability against the nuclear arsenals of potential regional adversaries.

The capability is termed "damage-limiting" because its objective is to reduce the nuclear threat to U.S. forces and allies. This capability must be "high-confidence" because even a very small number of nuclear weapons can wreak havoc on U.S. power projection operations. Anything less than high confidence is also likely to erode the faith of American allies in U.S. security guarantees and undermine the willingness of American leaders to act. Also this capability must be "conventional" because of America's growing self-imposed restraint on the use of nuclear weapons. Achievement of these objectives is likely to require a multifaceted approach, integrating offense, active and passive defense, advanced surveillance systems, and command and control capabilities, as well as new operational concepts and tactics.

Air forces are particularly suited to support the offensive component of this capability. In any future war against a regional adversary, U.S. leaders will want a military option that enables the United States to defeat the regional opponent without suffering heavy casualties. Many cite the recent experience of Operations DESERT SHIELD and DESERT STORM as the model for future U.S. military operations in a Major Regional Contingency (MRC). This study, and especially the results of the Middle East and Korea exercises, suggests that U.S. military interventions against regional nuclear adversaries—particularly those armed with nuclear-tipped mobile intermediate range ballistic missiles (IRBMs)—will have to change. Intervention in these circumstances calls for a capability to suppress, defend against, and ultimately defeat this long-range bombardment capability before substantial U.S. military formations are deployed to the theater. The overarching operational need is to engage the regional opponent with forces that can operate from locations safely beyond the range of its ballistic missiles. Air power is the natural choice for this "leading edge" of power projection operations in a "nuclear MRC."

Moreover, the high-confidence, conventional damage limiting capability is a sound investment for the Air Force whatever strategy the United States chooses to cope with the proliferation of nuclear weapons and ballistic missiles. Under a continuation of the two-tiered strategy, the capability will be essential to maintain a credible U.S. power projection as insurance against failures of the nonproliferation regime. In an expanding club of nuclear weapons states, the ability to withhold nuclear forces from an effective conventional retaliation against a regional adversary's nuclear attack will help the United States to serve as an example of a "responsible" nuclear power. Should the United States adopt the strategy of virtual abolition, the high-confidence conventional damage-limiting capability will provide a military option for the forcible denuclearization of states violating the new "no nuclear" norm.

The Air Force and its sister services also must decide whether to continue to pay the "tax" incurred to "harden" the electronics of weapon systems against such nuclear effects as electro-magnetic pulse (EMP). Without hardening, American forces could become vulnerable to the quite limited preemptive use of nuclear weapons by regional adversaries. The high-confidence, damage-limiting capability discussed above and the other, more traditional, power projection capabilities must be able to operate in the face of these wide-area nuclear effects. Hardening is insurance against the surprise emergence of a new nuclear adversary. The question of how much insurance is enough will not disappear even if the United States presses for virtual abolition.

THE FUTURE ROLE OF NUCLEAR WEAPONS

The future role of nuclear weapons in U.S. defense strategy is critically important and unresolved. The Air Force is likely to have great influence on the outcome of this ongoing debate. Following decisions taken by the Bush administration in 1991 and reciprocated by the former Soviet Union and its successor states, the Air Force finds itself the only service that will maintain the full spectrum of nuclear weapons during the rest of this decade. The U.S. Army is being totally denuclearized. The U.S. Navy

is following in part, with its tactical nuclear weapons withdrawn from the fleet and indications of a preference to dismantle the stockpiled bombs and cruise missile warheads. Only the submarine-launched ballistic missiles (SLBMs) will be retained, on a smaller fleet of ballistic missile submarines (SSBNs). By the mid-1990s the Air Force will be the only service maintaining a ready arsenal of nuclear weapons designed for use in theater operations.

A major policy issue is whether the United States should choose to maintain the option of delivering a small number of low yield nuclear weapons, perhaps fewer than 50, against military targets from nuclear-capable forces deployed to the theater. This study suggests that there are strongly held views for and against such an option. To some the theater nuclear capability may offer military and political advantages. As a military option, such nuclear forces could provide the United States with an efficient means of countering superior conventional forces in short-warning scenarios, as well as the ability to destroy deeply buried or imprecisely located targets that remain relatively invulnerable to conventional ordnance. Theater nuclear forces also may have political advantages. A president may find it useful to be able to deploy a limited number of nuclear-capable aircraft to a theater to deter regional nuclear aggression. Such a move may demonstrate American will to a potential adversary and reassure a threatened ally. To others, conventional capabilities are, or will soon enough be, nearly perfect substitutes for nuclear weapons in terms of military effectiveness, deterrent value, and reassurance.

As the only service with rapidly deployable nuclear forces at the ready, the Air Force plays a crucial role in this policy decision. It could choose to allow the number of nuclear-capable aviation units to dwindle, the other capabilities supporting theater nuclear operations to atrophy, and the cadre of personnel who take the nuclear dimension of conflict seriously to disappear. Not unlike the Navy and its SLBMs, the Air Force might conclude that the only nuclear weapons necessary are the 500 single reentry vehicle (RV) ICBMs, to be employed as a "last resort" and primarily in retaliation to a nuclear attack on the United States itself. Alternatively, the Air Force might be persuaded that a continuing role exists for a small theater nuclear force. In this case, it must articulate the military and political rationales for maintaining a nonstrategic nuclear capability. If this option has national support, the Air Force will have to decide how to maintain a small nuclear-capable air fleet. A major challenge will be to protect and nurture the cadre of nuclear-trained personnel and integrate them into contingency planning processes in meaningful ways. Before a decision is made, however, the Air Force should carefully examine the arguments for and against retention of this small nuclear force.

AN OVERALL STRATEGY TOWARD NUCLEAR PROLIFERATION

For the Air Force and its sister services, the success or failure of U.S. nuclear nonproliferation policy will have a profound effect on future defense posture choices. This study suggests that relatively small but hard-to-kill nuclear arsenals present a powerful challenge to any U.S. planner designing future power projection operations. Assuming no decrease in the U.S. determination to maintain a robust power projec-

tion capability as part of its extended deterrent commitment to friends and allies, nuclear proliferation becomes a central post-Cold War national security issue.

If the Air Force is convinced that a large nuclear arsenal is not needed to deter a Russian intercontinental nuclear threat and that the United States can prevail in future regional wars without resorting to nuclear use—even against nuclear-armed adversaries—it would be in a strong position to influence the overall U.S. strategy for dealing with nuclear proliferation. The Air Force could take the lead in advocating a national strategy for the virtual abolition of nuclear arsenals worldwide.

For reasons explained in this study, such a regime may not be feasible. Nuclear proliferation may inexorably proceed. If so, the nuclear weapons threat will become the central factor for the Air Force and the other services in defining the shape and design of U.S. forces and strategy. Failure to adapt to this increasingly challenging environment would call into question the ability of the United States to sustain a robust power projection capability and would undermine a central element of U.S. national security strategy in the post-Cold War world.

PARTICIPANTS IN ONE OR MORE EXERCISES

Lt Col Richard Aiken, USAF	Air Staff
Lt Col Joseph Alt, USAF	Air Staff
Wolfgang Altenburg	Stiftung Wissenschaft und Politik
Eric Arnett	AAAS
Ronald Asmus	RAND
Lt Col Judy Austin, USAF	Air Staff
Jeremy Azrael	RAND
Kathleen Bailey	National Security Research
Lt Jeffrey Barnett, USAF	Air Staff
William Beacher	<i>Minneapolis Star Tribune</i>
Ronald Bee	ACCESS
Hans Benendyjk	Georgetown University
Bruce Bennett	RAND
Mark Bennett	Economic Strategy Institute
Maj Bob Bivens, USAF	Air Staff
Maj Don Blackwelder, USAF	Air Staff
Robert Blackwill	Harvard University
Bruce Blair	Brookings Institution
James Blaker	Center for Naval Analyses
Lincoln Bloomfield	Office of the Vice President
Jim Bodner	Staff, Senator William Cohen
Lt Col Dan Bohlin, USAF	Air Staff
John Bordeaux	RAND
Steve Bowman	Congressional Research Service
Lt Col Tom Bradley, USAF	Air Staff
Ian Brezinski	Consultant
COL George Brock, USA	Joint Staff
Capt William Bruner, USAF	Air Staff
Glenn Buchan	RAND
Oleg Bukharin	Moscow Physical-Technical Institute
Susan Burk	Arms Control and Disarmament Agency
Col Mike Carlin, USAF	Air Staff
Peter Cary	<i>U.S. News and World Report</i>
Deborah Castleman	RAND
Meg Cecchine	RAND
Sandra Charles	International Planning and Analysis Center
Adam Ciralsky	Office of the Secretary of Defense
Richard Cohen	Washington World Analysts

Lt Col Walter Cooner, USAF	Air Staff
Col Ralph Cossa, USAF	National Defense University
Maureen Cote	Foreign Broadcast Information Service
Richard Darilek	RAND
Lt Col Bill Davis, USAF	Air Staff
Scott Davis	Arms Control and Disarmament Agency
Zachary Davis	Congressional Research Service
Valey Davydov	Institute for the USA and Canada
Jim Dixon	National Defense University
Lt Col Robert Driscoll, USAF	USAF, Europe
Carl Feldbaum	Staff, Sen. Arlen Specter
Marvin Feuerwerker	Washington Institute for Near East Policy
John Fialka	<i>Wall Street Journal</i>
Maj Chuck Fletcher, USAF	Air Staff
Jane Floyd	Department of State
Dan Fox	RAND
Joe Fromm	U.S. Committee of the IISS
Ted Galdi	Congressional Research Service
Sam Gardiner	RAND
Raymond Gartoff	Brookings Institution
Jeane Renne Gehan	Embassy of France
Kevin Generous	ANSER
David Goldman	Arms Control and Disarmament Agency
Ira Goldman	Department of Energy
Stuart Goldman	Congressional Research Service
Martin Goldstein	Arms Control and Disarmament Agency
Rose Gottemoeller	RAND
Bob Gough	Sandia National Laboratories
Col James Gough, USAF	Air Staff
Maj Scott Gough, USAF	Air Staff
Margaret Graham	Washington Defense Research Group
Thomas Graham	Office of the Secretary of Defense
Rebecca Grant	Department of the Air Force
Richard Greenwood	Congressional Research Service
Barbara Gregory	SAIC
Maj Mark Gunsinger, USAF	Air Staff
Ralph Hallenbeck	SAIC
Maj Gen George B. Harrison, USAF	USAF, Europe
Scott Hatch	Central Intelligence Agency
Myron Hedlin	Foreign Broadcast Information Service
Col Michael Heenan, USAF	Air University
Mal Hegelsen	Central Intelligence Agency
Donald Henry	RAND
Wolfgang Heydrich	Stiftung Wissenschaft und Politik
Steven Hildreth	Congressional Research Service
Capt Jefferey Hodgson, USAF	Air Staff
Joseph Holik	Foreign Office (Federal Republic of Germany)
Mark Holt	Congressional Research Service
LTC Stanton Hoppe, USA	Office of the Secretary of Defense
Arnold Horelick	RAND

Steve Hosmer
 Robert Howe
 Gregg Hulcher
 Marc Humphries
 Shireen Hunter

Eugene Iwanciew
 Walter Jablonsky

Paul Jereidini
 Brig Gen Arthur Johnson, USAF
 Maj Kyle Johnson, USAF
 Stuart Johnson
 Laurence Jolidon
 Rodney Jones
 Thomas Julian
 William Kahn
 Shirley Kan
 Phil Karber
 Elana Kass
 COL John Kelsey, USA
 Wolf Kischlat

Chris Kline

Nicholas Krawciw
 Richard Kugler
 Ellen Laipson
 Paul Lang
 Peer Lange
 Steve Larrabee
 John Lee
 James Leonard

Robert Levine
 Fred Leykam
 Thomas Longstreth
 Lt Col William Lucyshyn, USAF
 Robert McConnell
 Rod McDaniel
 Bruce MacDonald
 Ron McLauren
 James McNally
 Robert McNamara
 Donald Mahoney
 Christopher Makins
 LTC Greg Maronski, USA
 Maj Robert Massey, USAF
 Douglas Mathews
 Jessica Mathews

RAND
 RAND
 Office of the Secretary of Defense
 Congressional Research Service
 Center for Strategic and International
 Studies
 Ukrainian National Association
 Office for Studies and Training of the
 Federal Armed Forces (Federal
 Republic of Germany)
 Abbott Associates
 Office of the Secretary of Defense
 Air Staff
 National Defense University
USA Today
 Arms Control and Disarmament Agency
 National Defense University
 Office of the Secretary of Defense
 Congressional Research Service
 BDM Corporation
 National Defense University
 National Defense University
 Federal Chancellery (Federal Republic of
 Germany)
 Staff, Senate Committee on
 Governmental Affairs
 Consultant
 RAND
 Central Intelligence Agency
 Defense Intelligence Agency
 Stiftung Wissenschaft und Politik
 RAND
 Consultant
 Washington Council on Non-
 Proliferation
 RAND
 Washington Defense Research Group
 Joint Staff
 Air Staff
 Gibson, Dunn, and Crutcher
 Consultant
 Staff, Sen. Dale Bumpers
 Abbott Associates
 Washington Defense Research Group
 Former Secretary of Defense
 RAND
 Aspen Institute
 Joint Staff
 Air Staff
 Central Intelligence Agency
 World Resources Institute

John Medalia	Congressional Research Service
Richard Mesic	RAND
Col Charles Miller, USAF	Air Staff
Maj Chris Miller, USAF	Air Staff
Gary Millhollin	Wisconsin Project on Nuclear Arms Control
Fenner Milton	Department of the Army
CAPT Steve Mladineo, USN	National Defense University
Capt Paul Montgomery, USAF	Air Staff
Theodore Moran	Georgetown University
Capt Thomas Mowle, USAF	Air Staff
Joseph Muckerman	Office of the Secretary of Defense
Clark Murdock	Staff, House Committee on Armed Services
Lt Col Mike Nelson, USAF	Air Staff
Walter Nelson	RAND
Uwe Nerlich	Stiftung Wissenschaft und Politik
Preston Niblack	RAND
Stan Norris	Natural Resources Defense Council
David Ochmanek	RAND
Katy Oh	RAND
David Orletsky	RAND
John Parachine	Committee for National Security
Jody Paul	RAND
Walter Perry	RAND
Hans-Jochen Peters	NATO Secretariat General
Yury Pinchkov	IMEMO
John Piotrowski	Consultant
Bruce Pirnie	RAND
Lt Col Steve Pitotti, USAF	Air Staff
Alan Platt	Consultant
Katherine Poehlmann	RAND
Raymond Pollock	Washington Defense Research Group
William Potter	Monterey Institute for International Affairs
David Pozarsky	Department of State
LTC Edward Pusey, USA	Army Staff
Capt Gregg Rattray, USAF	Air Staff
Douglas Reilly	Department of Energy
Joel Resnick	Staff, House Committee on Armed Services
Arch Roberts	Staff, House Committee on Foreign Affairs
Peter Rohrs	Federal Ministry of Defense (Federal Republic of Germany)
Vicki Rundquist	Central Intelligence Agency
Randall Rydell	Staff, Senate Committee for Governmental Affairs
Leigh Rys	Central Intelligence Agency
Jay Salmon	Department of State
Gary Saymore	Department of State

Adam Scheinman

Ed Scholz

John Schrader

Greg Schulte

Bill Schwabe

Col. Donald Selvage, USMC

CAPT Larry Sequist, USN

Joel Shapiro

David Shlapak

Bob Shuey

Horst Siedschlag

Maj Mac Sikes, USAF

Jeff Simon

Lt Col Bruce Slawter, USAF

Walter Slocombe

Leon Sloss

Jacqueline Smith

Marcia Smith

R. Jefferey Smith

Don Snider

Jed Snyder

Richard Sokolsky

Leonard Spector

Kate Starr

Stuart Starr

Dave Stephens

K. Peter Stratmann

Scott Sullivan

Robert Summers

CAPT Peter Swartz, USN

Juliet Swiecicki

Greg Theilman

Thomas Thornton

John Tilson

Roland Timerbayev

Alan Tonelson

Col Ron Trees, USAF

Henry Trofimenko

Lt Col Elwood Turcuit, USAF

Victor Utgoff

Marten van Heuven

Alan Vick

Jenon Walker

Washington Council on Non-
Proliferation

Orion Research

RAND

Office of the Secretary of Defense

RAND

Joint Staff

Office of the Secretary of Defense

Army Intelligence Agency

RAND

Congressional Research Service

Federal Ministry of Defense (Federal
Republic of Germany)

Air Staff

National Defense University

Air Staff

Caplin and Drysdale

Consultant

SAIC

Congressional Research Service

Washington Post

Center for Strategic and International
Studies

National Defense University

Department of State

Carnegie Endowment

SAIC

MITRE

Office of the Secretary of Defense

Stiftung Wissenschaft und Politik

Office of the Secretary of Defense

Arms Control and Disarmament Agency

Joint Staff

Arms Control and Disarmament Agency

Department of State

Johns Hopkins University

Institute for Defense Analyses

Soviet Representative, International
Atomic Energy Agency

Economic Strategy Institute

Air Staff

University of Maryland

Air Staff

Institute for Defense Analyses

RAND

RAND

Carnegie Endowment

Lt Col Richard Wallace, USAF
Miguel Walsh
Pat Walsh
Dale Walter
Col John Warden, USAF
Ted Warner
Adam Wasserman
Lt Col Vern Waymire, USAF
Tim Webb
Tom Wegleitner
Jerry White
CDR James Winnefeld, USN
James Winnefeld
Joel Witt
Amy Woolf
Lt Col Dail Wrisley
Jerry Yonas
Andrey Zagorski
Robert Zirkle
Ron Zwart

Air Staff
Office of the Secretary of Defense
Central Intelligence Agency
Central Intelligence Agency
Office of the Vice President
RAND
Central Intelligence Agency
Air University
RAND
RAND
Wisconsin Project on Arms Control
Joint Staff
RAND
Carnegie Endowment
Congressional Research Service
Air Staff
Sandia National Laboratory
MGIMO
Institute for Defense Analyses
Office of the Secretary of Defense