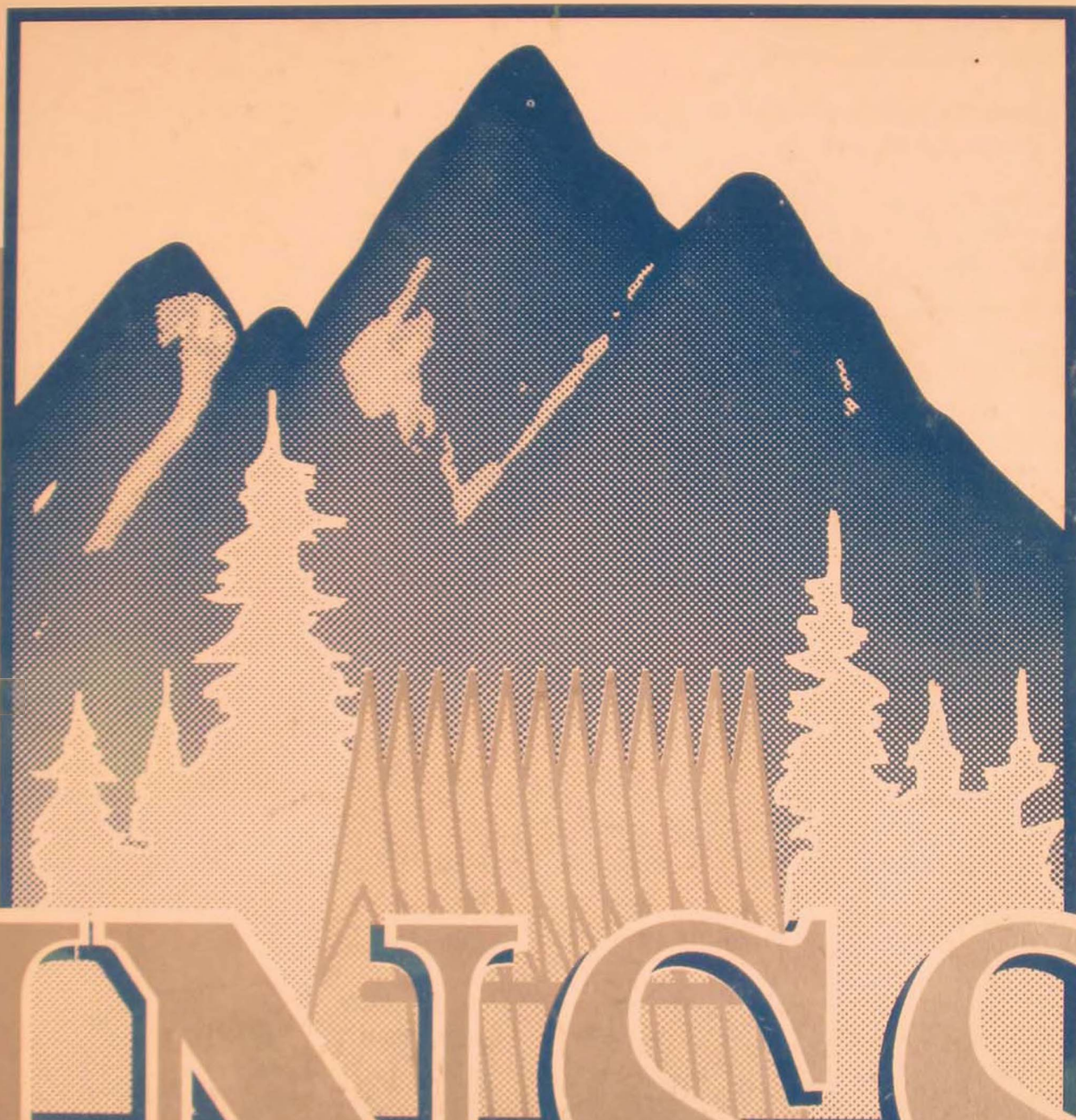


SPECIAL  
EDITION

# AIRPOWER

Special Edition 1994

JOURNAL



# ANNALS

# Spring Readings

Information Warfare



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# EDITORIALS

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## WHY A SPECIAL EDITION?

### Or, What Have They Done to *APJ*?

SINCE ITS inception, *Airpower Journal* has focused on the operational level of war. While convinced of the propriety of that focus, the editors of *APJ* have also seen the need for aerospace power to have a voice at the strategy/policy level as well. Further, some people have suggested that we include articles at that level in our professional journal. However, a maxim of today's print media calls for developing a specific purpose for a publication, aiming it at a particular audience, and sticking with it. Attempting to be all things to all people simply doesn't work. Recognizing this fact, other military services have developed several journals dedicated to specific areas.

Lest anyone be confused, we are not proposing the erection of artificial barriers between levels of thinking. To do so would be as unwise as the compartmentalization that once existed between strategic and tactical air forces. Rather, we are suggesting a need for different tools to help develop thinking at the different levels of war. These tools would be used by audiences whose current or future duties require the ability to think at those levels.

The good graces and funding of the Institute for National Security Studies (described in Lt Col Jeffrey A. Larsen's editorial on the next page) have given us the opportunity to gain some experience with material that lies outside our usual purview. In a very real way, this special edition is an experiment. Your reaction to it will shape our future efforts in developing a strategy/policy-level professional journal for the Air Force, should one ever be funded.

You will note that the articles in this edition are generally longer—and more abstract—but less copiously illustrated than those in most issues of *Airpower Journal*. Additionally, some of our regular features—such as letters to the editor and the Ira C. Eaker Award winner—are not included in this special edition. They will return, as will our normal operational-level focus, in the Fall 1994 issue. Please take a moment to write a note or fill out a comment card (found between page 96 and the back cover), telling us what you think of this edition and the value of a second professional journal devoted to strategy/policy issues. RBC

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## USAF Institute for National Security Studies (INSS)

LT COL JEFFREY A. LARSEN, USAF  
Director, INSS

**T**HE ARTICLES in this edition of *Airpower Journal* are the products of research conducted under the auspices and support of INSS, an Air Staff-sponsored research center located at the US Air Force Academy in Colorado Springs, Colorado.

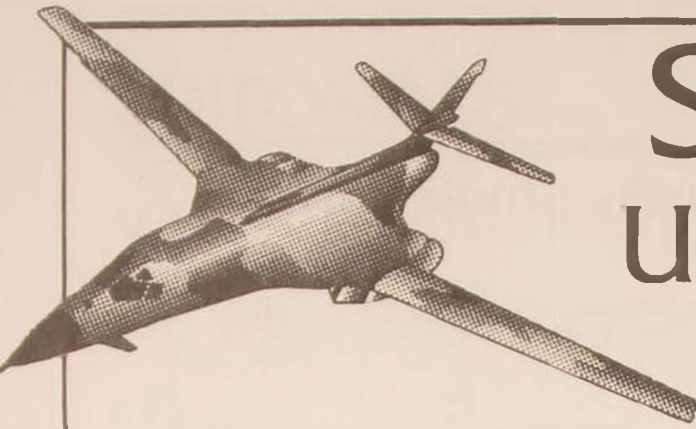
The primary purpose of INSS is to promote national security, arms control, and area studies research within the Air Force. INSS coordinates and collates funded research across disciplines and focuses outside thinking in various disciplines with regard to its impact on USAF policy-making. It acts as a clearinghouse for information and new ideas, supporting the analytic needs of a broad community of organizations tasked with defense and national security policy- and decision-making responsibilities.

INSS was created in 1992 through the cooperative efforts of the Air Force Academy's dean of faculty and the National Security Negotiations Division, Plans and Operations Directorate, Headquarters USAF (AF/XOXI). XOXI provides funding for research grants to interested and qualified persons in areas of Air Force interest. Grants from INSS supplement existing contracts with other research organizations by tapping the resources of the military academic community. The institute helps to develop research topics, select researchers, administer sponsored

research, and host conferences and workshops that facilitate the dissemination of information to a wide range of private and government organizations.

As primary sponsor, XOXI is interested in the impact of policy issues on technical and scientific aspects of arms control implementation, compliance, and verification. In policy areas, INSS acts as a bridge between broad issues—such as politics, international relations, law, and economics—and the more specific concerns of Air Force policy. In the science and engineering fields, the institute provides a forum for the development of technical means of achieving requirements for Air Force arms control implementation and compliance. In area studies, INSS supports the Secretary of the Air Force Office of International Affairs (SAF/IA) through studies of regions of importance to the United States.

Research proposals may be submitted by military officers and by faculty and students at the military academies, war colleges, and military degree-granting institutions. Persons interested in more information about the institute or the grant process should contact us at USAF Institute for National Security Studies, 2354 Fairchild Drive, Suite 4K25, US Air Force Academy (USAFA/DFE), Colorado Springs CO 80840. Phone: 719-472-2717 (DSN 259-2717). FAX: 719-472-2716. □



# STRATEGIC USE WITH CARE

CAPT JUDY M. GRAFFIS, USAF\*

**S**CENARIO: North Korea pulls out of the Nuclear Nonproliferation Treaty and threatens South Korea with "the greatest devastation imaginable." The chairman of the Joint Chiefs of Staff, in a news conference, states that we are prepared to conduct a "strategic attack" against North Korea.

What does the chairman mean? Does he mean an Operation Desert Storm-style air campaign against Pyongyang? Does he mean a few "small" nuclear warheads detonated on highly significant military and nuclear-related facilities? Will he use a long-range nuclear weapon or some F-117s dropping conventional bombs on North Korea's military headquarters?

Just a few years ago, most military and civilian listeners would have interpreted the chairman in just one way: *strategic attack* meant the use of long-range nuclear weapons to completely destroy the enemy. Today, however, after Desert Storm, the phrase isn't quite so clear. *Strategic* doesn't seem to mean the same thing that it used to back in the days of Strategic Air Command (SAC), the Strategic Arms Limitation Treaty (SALT), and the Strategic Arms Reduction Treaty (START).

Using *strategic* to specify long-range nuclear weapons is quite common among both military members and civilians. For

example, the *Chairman of the Joint Chiefs of Staff Report on the Roles, Missions, and Functions of the Armed Forces of the United States* (February 1993) states that "the organization of our nuclear forces has been changed fundamentally. For the first time, all of America's strategic bombers, missiles, and submarines are under one commander."<sup>1</sup> Here, the report clearly uses *strategic* to refer to long-range nuclear weapons. On the other hand, the term is also used to define location or distance, as with strategic and tactical airlift. According to Joint Publication (Pub) 1-02, *Department of Defense Dictionary of Military and Associated Terms*, strategic airlift occurs "between theaters," while tactical airlift occurs within theater.<sup>2</sup> Finally, *strategic* also identifies anything that is, as the *American Heritage Dictionary* defines it, "essential to the effective conduct of war." For example, Joint Pub 1-02 defines a strategic mission as

a mission directed against one or more of a selected series of enemy targets with the purpose of progressive destruction and disintegration of the enemy's war-making capacity and his will to make war. . . . As opposed to tactical operations, strategic operations are designed to have a long-range, rather than immediate, effect on the enemy and its military forces.<sup>3</sup>

\*My appreciation extends to the US Air Force Academy's Institute for National Security Studies (INSS) for sponsoring my research, to Maj Al Dorn and Maj Karen Wilhelm for their advice, and to Capt Rob Critchlow for his advice and his presentation of this material at the INSS conference.



So, within official military documents—even within Joint Pub 1-02 itself—the word *strategic* is used several different ways. So what? Many words have multiple definitions. What's the issue? The problem is that one of the definitions of *strategic*—the one that includes the phrase *long-range nuclear*—is deeply ingrained in many of us, but it is now misleading to the extent that its use can be dangerous in today's changing security environment.

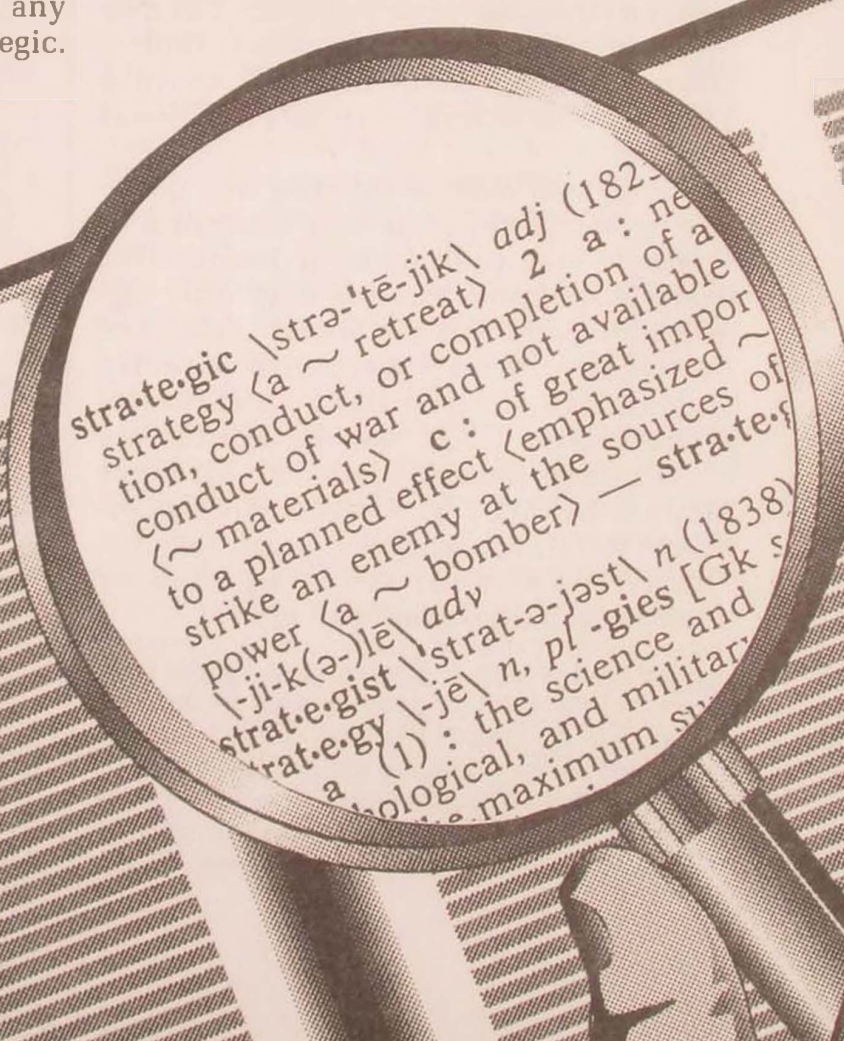
The different definitions for *strategic* within a military context can be traced to the two major military theorists of the Napoleonic era, Carl von Clausewitz and Antoine Henri de Jomini. On the one hand, Clausewitz used the term to refer to engagements that are used “for the purposes of the war” (i.e., accomplishment of a political purpose). He also asserted that “successful engagements . . . in all stages of importance may . . . be considered as strategic means.”<sup>4</sup> Since Clausewitz obviously never saw nuclear weapons, it appears that his theoretical perspective would prevent him from classifying any weapon, location, or distance as strategic. Instead, he sought a strategic EFFECT.

Jomini, on the other hand, had a more quantifiable definition. He found something to be strategic if it dealt with “the whole theater of operations”; strategic subjects included

1. Selection of the theater of war, and the discussion of the different combinations which it allows. . . .
4. Selection of the objective point, whether offensive or defensive.
5. The strategic fronts, lines of defense, and fronts of operations.<sup>5</sup>

Thus, in Jomini's view, THINGS—such as locations—can be strategic. Jomini probably would have had little difficulty identifying certain weapons as strategic.

Since the era of Jomini and Clausewitz, some military thinkers have thought and written along the lines of Clausewitz, emphasizing the comprehensiveness, uncertainty, and politics of war, while others have followed Jomini, breaking warfare into smaller pieces for analysis.



stra·te·gic |strə-'tē-jik| adj (182-  
strategy (a ~ retreat) 2 a: ne  
tion, conduct, or completion of a  
conduct of war and not available  
<~ materials> c: of great impor  
strike an enemy at the sources of  
power (a ~ bomber) — stra·te·g  
| -ji-k(ə)-lē| adv  
strat·e·gist |strat-ə-jəst| n (1838)  
strat·e·gy |-jē| n, pl -gies [Gk s  
a (1): the science and  
ological, and military  
the maximum su

Air doctrine pioneer Gen William ("Billy") Mitchell's distinction between strategic and tactical air operations is an example of the Jominian analytical style. According to Mitchell, strategic air operations take place far in advance of troops and have an independent mission, while tactical operations occur in the immediate vicinity of troops.<sup>6</sup>

After World War II, the concepts of Clausewitz and Jomini confronted the new world situation brought about by atomic and nuclear weapons. Many nuclear theorists accepted that the devastation of nuclear weapons would achieve dramatically important—and, therefore, strategic—effects in the Clausewitzian sense. The very use of nuclear weapons against another nation—without reference to size, target, or specific intent—was (and still is) seen as strategic, since it would profoundly change the character of the war. Since *any* use of these weapons was seen as producing a strategic effect, theorists began describing the nuclear weapons themselves as strategic. The designation reflected their *political* importance, but it also labeled certain THINGS—as opposed to EFFECTS—as strategic.

Throughout most of the cold war, designating long-range nuclear weapons as strategic was practical. A Jomini-like analysis indicated that the only truly significant enemy was the Soviet Union and that the only way we could directly accomplish the political objective of destroying the USSR was through the use of long-range nuclear weapons. Air Force Manual (AFM) 1-3, *Theater Air Operations* (1954), for example, specified that "heartland actions are conducted by strategic striking forces" and that

heartland action is designed to be decisive [where] the term decisive is used to indicate one or more of the following conditions with respect to an enemy nation: the enemy's supporting structure may be destroyed so that he cannot maintain sufficient military strength to assure victory; the enemy's will

to resist may be so lowered that no united national determination remains to prosecute a war; the enemy government may lose the necessary control to unite the people and direct the war effort; the capabilities of the enemy armed forces may be so reduced that effective resistance is no longer possible.<sup>7</sup>

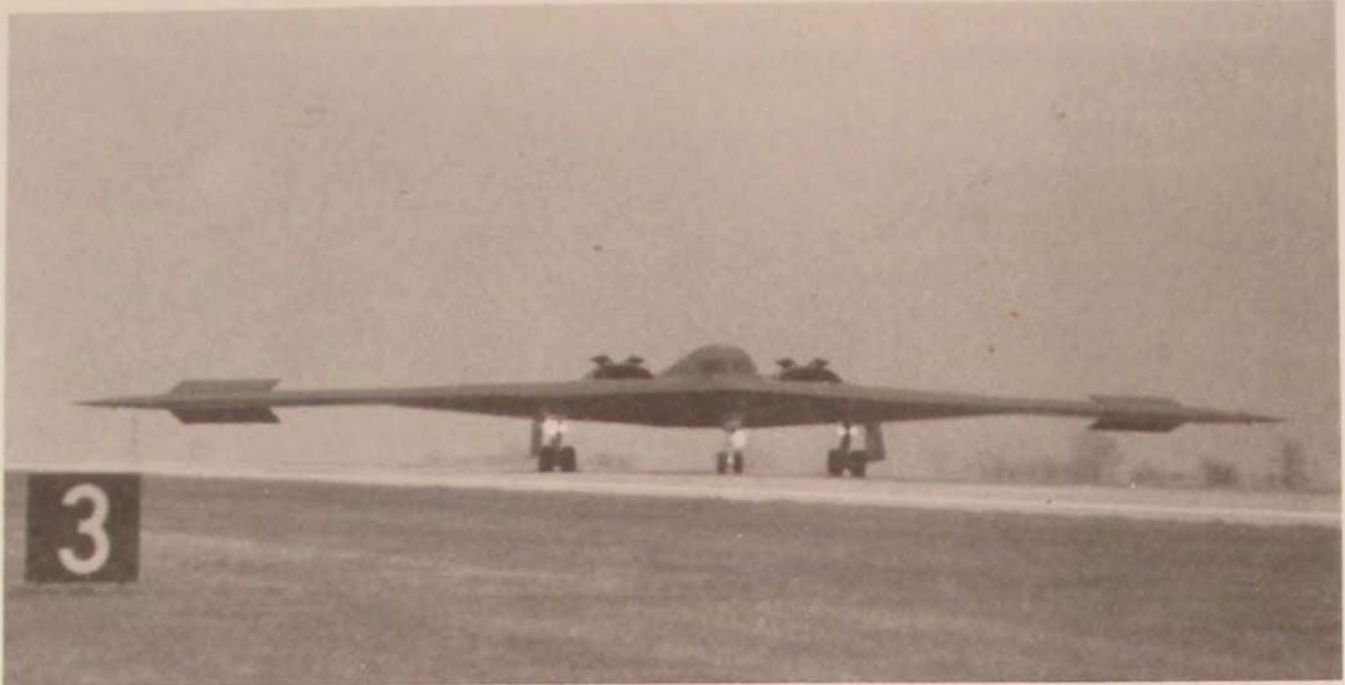
The goal was unconditional surrender, and that goal could be met only by long-range nuclear weapons. All other military tools at our disposal could have, by themselves, only a nonstrategic effect. Although American theoretical writings did not seem to recognize this shift explicitly, Soviet theory did. In 1962 a team of military theorists led by Marshal of the Soviet Union V. D. Sokolovskii wrote in *Soviet Military Strategy* that

military strategy in previous wars assigned an important place to *the principle of partial victory*. It was considered irrefutable that general victory in war consisted of a number of partial successes on various fronts and in various spheres of military operation. Modern strategic weapons, which are directly subordinate to the high commands, make it possible to achieve decisive results in winning victory in war sometimes even without resort to tactical and field forces and their weapons. This lends support to the proposition that today partial successes can be replaced by successes of a general strategic nature. (Emphasis in original)<sup>8</sup>

The third edition of *Soviet Military Strategy* added that

strategy, which in the past was nourished by the achievements of tactics and operational art, now is given the possibility to attain, by its own independent means, the war aims regardless of the outcome of battles and operations in the various areas of armed conflict. Consequently, over-all victory in war is no longer the culmination, nor the sum of partial successes, but the result of a one-time application of the entire might of a state accumulated before the war.<sup>9</sup>

It made sense, to both the US and the USSR, to designate certain weapons as strategic. If these weapons were used, they would attack the country's most



important enemy and would achieve the strategic objective of destroying that enemy. Neither country could conceive of any other way to accomplish the goal.

Arms control treaties set in stone the *long-range nuclear* definition of *strategic*. The unique characteristics of long-range nuclear weapons led to highly publicized efforts to control their numbers and deployment, resulting in perhaps the biggest reason why many people—both military and civilian—still view *strategic* as *long-range nuclear*. Our most visible arms control efforts with the USSR are SALT and START. In actuality, SALT and START only occasionally refer to nuclear weapons because the treaties control the number of launchers—not warheads. If we chose to put a nonnuclear warhead on an intercontinental ballistic missile (according to SALT, an ICBM is “a land-based, rocket-propelled vehicle capable of delivering a warhead to intercontinental ranges [ranges in excess of about 3,000 nautical miles]”<sup>10</sup>), it would still be controlled under SALT and START. To most US citizens, military and civilian alike, however, that detail surely seems inconsequential. SALT and START deal with nuclear weapons. As the US Arms Con-

*In the past, the term strategic was used to describe certain weapon systems such as the B-2 because they were designed for long-range nuclear missions.*

trol and Disarmament Agency has stated, “There is no clear-cut definition of the kind of arms that are ‘strategic.’ But because of their potential for enormous destruction and their long range, ICBMs, SLBMs [sea-launched ballistic missiles], and heavy bombers assume special importance for arms control.”<sup>11</sup> According to this statement, it seems that all long-range nuclear weapons are strategic and that all strategic weapons are long-range nuclear weapons.

In recent years, however, we have had to take a step back from that analysis and look at the whole (Clausewitzian, if you will) picture. Long-range nuclear weapons are no longer the only weapons that can be used to move directly toward our national security goal. Two primary reasons are that the former Soviet Union is no longer the focus of our military efforts and that technology has advanced—especially in precision guided munitions. Looking at the world as a whole—rather than breaking it down for analysis into the former



*Antoine Henri de Jomini's definition of strategic, which was more quantifiable than Clausewitz's, dealt with "the whole theater of operations."*

Soviet Union and everybody else—we see that many countries can threaten our national security and that we have many tools which can confront them. Our recent move from the strategy of “containment” to that of “regional defense” officially recognizes the change.<sup>12</sup>

To achieve a goal under the regional defense strategy—whether it is to force the unconditional surrender of an enemy or to achieve a more limited purpose—we must be able to see any capability as a possible means of directly accomplishing that objective. It is entirely feasible that in certain situations our logistics or communications systems, rather than weapons, may be the most direct path to the goal. Therefore, we should not use *strategic* to categorize weapon systems. Many other things and actions can be used in a strategic manner, but labeling certain weapons as *strategic* may constrain our thinking so that we ignore those possibilities. Instead, we should use *strategic* to designate actions that will directly support achievement of our goals.

The US Air Force, for many years an ardent user of the term *strategic* to mean *long-range nuclear*, has already taken major strides toward using the word in its larger, goal-oriented sense. The most obvious evidence is the replacement of SAC and Tactical Air Command (TAC) with Air Combat Command (ACC), a change that explicitly recognizes that every weapon system has strategic and nonstrategic purposes. The USAF's direction can also be seen in AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force*. In 1979 AFM 1-1 described “strategic aerospace offensive forces” in detail, and the distinction between strategic and tactical weapon systems was clear.<sup>13</sup> The 1992 version of AFM 1-1, however, emphasizes that “strategic attacks are defined by the objective—not by the weapon system employed, munition used, or target location.”<sup>14</sup> These changes are intended to allow Air Force decision makers as much flexibility as

possible in their thinking, an absolute necessity in our decidedly uncertain world.

Defense budget submissions have also begun deleting *strategic* and *tactical* as force descriptions. Such submissions to Congress previously specified budgets for “major force programs” such as strategic forces and tactical forces. However, Congress—apparently determining that such distinctions are not valuable—now requires that the submissions be in terms of “budget activities,” and what had been funded under the *strategic* and *tactical* force programs is now funded under *operations*. Thus, even the all-powerful driving force of the budget has begun to shift away from using *strategic*.<sup>15</sup>

Should the arms control community also change the way it uses the term *strategic*? Since SALT and START are major and continuing reinforcements of the tendency to equate *strategic* with *long-range nuclear*, it may seem that the arms control arena should be the focus of any effort to adjust the common usage of the word.

My discussions with members of the arms control community, however, clearly indicate that negotiators and politicians use words as they please and that very little can or should be done about this proclivity. As I previously explained, the Strategic Arms Limitation Treaty was named during a period when the only conceivable military method available to either the US or the USSR for producing strategic effect was in fact long-range nuclear weapons. The name was accurate for the 1960s, and its acronym was convenient. In the 1980s, however, President Ronald Reagan used the 1960s phrase *strategic arms* to name the next major arms control treaty. He did this for political purposes—to clearly show that START was one step better than SALT. No amount of theorizing on the proper use of words would have persuaded Reagan to change the name of his treaty. What will the next treaty be named? It will very pos-

sibly have some obvious connection to SALT and START—perhaps as simple as START III—no matter how everyone at the negotiating table wants to use the word *strategic*. Theory will probably have very little impact on the title our president chooses to use.

Despite the difficulty of controlling how statesmen use *strategic*, the term does seem to hold some value for negotiators. In negotiations, the definition of strategic is nebulous enough to allow participants to negotiate which weapons do or do not belong in the treaty. In START, for example, the Soviets were able to exclude the Tu-22M bomber (Backfire), and the US was able to exclude sea-launched cruise missiles. Each of these weapons could certainly be used in a strategic manner, but the vagueness of the word allowed negotiation of the exact weapon systems to be controlled by the treaty. The arms control community generally sees this room for negotiation as beneficial to the arms control process. Restricting the term *strategic* would actually reduce negotiators' flexibility.

For many years, equating *strategic* with *long-range nuclear* was a convenient shorthand that made practical sense. The names of arms control treaties set this definition firmly in the American vocabulary. But times have changed. It is now seriously inaccurate to equate the two terms. Such a direct tie between a certain type of weapon and the concept of strategic effect might prevent some defense personnel from seeing other weapons and tools as equally or better able to directly produce the desired effect on our enemies. Some steps toward changing the use of *strategic* have already occurred within the defense community. All military professionals should support these efforts, recognizing that it is our responsibility to use words accurately—especially ones like *strategic*. Shifting the meaning of *strategic* away from a direct connection to specific weapon systems and toward the effects we are trying to accomplish is essential to helping all of us in the defense community think with the flexibility necessary to achieve our goals in this uncertain world. □

#### Notes

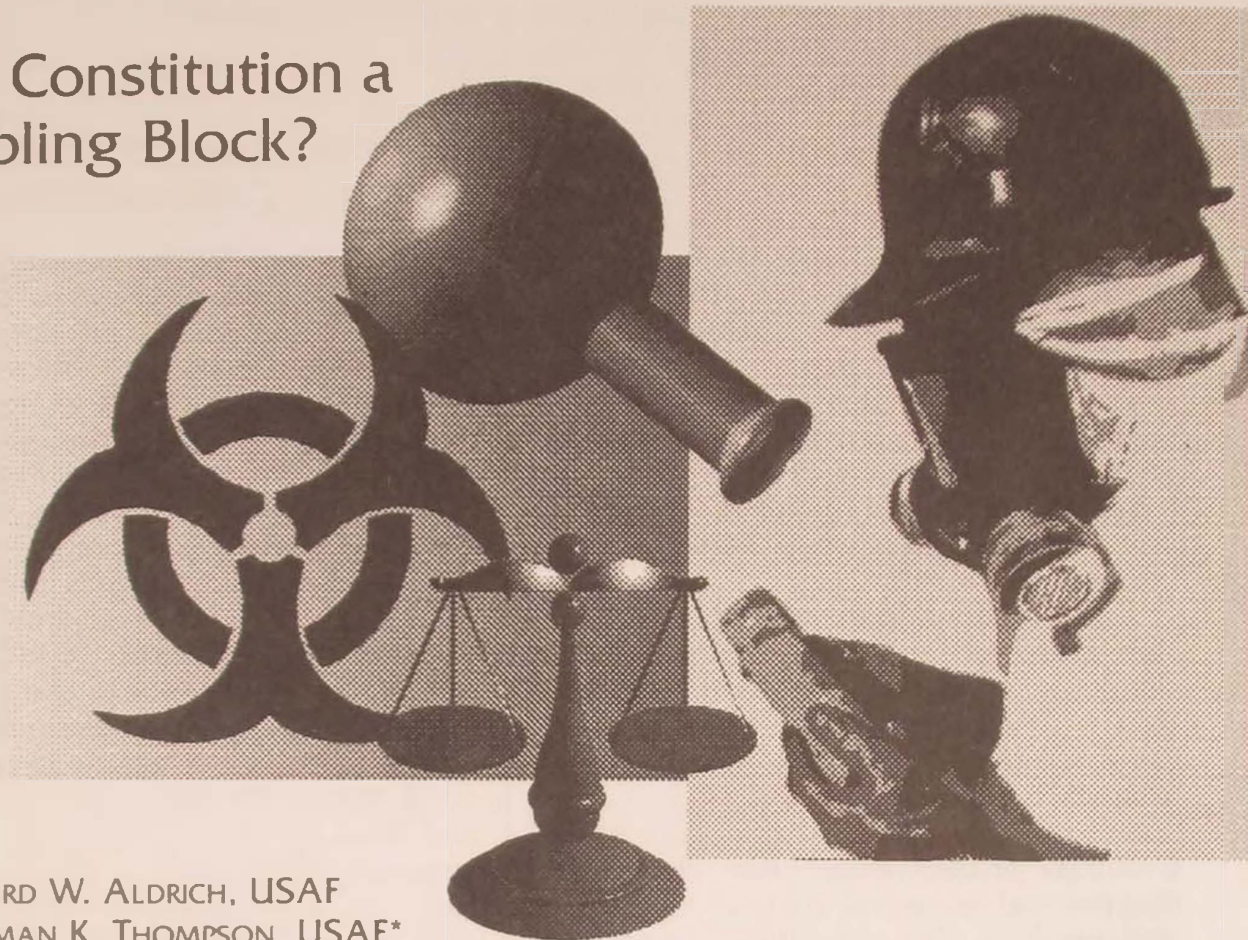
1. Colin L. Powell, *Chairman of the Joint Chiefs of Staff Report on the Roles, Missions, and Functions of the Armed Forces of the United States* (Washington, D.C.: Department of Defense, February 1993), vi.
2. Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 1 December 1989, 348, 361.
3. *Ibid.*, 349.
4. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1984), 28, 143.
5. "Jomini and His Summary of the Art of War," ed. Brig Gen J. D. Hittle, in *Roots of Strategy*, book 2 (Harrisburg, Pa.: Stackpole Books, 1987), 460.
6. Robert Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force*, vol. 1, 1907-1960 (Maxwell AFB, Ala.: Air University Press, December 1989), 22.
7. AFM 1-3, *Theater Air Operations*, 1954, 1.
8. Marshal of the Soviet Union V. D. Sokolovskii, ed.,

*Soviet Military Strategy*, trans. Herbert S. Dinerstein, Leon Gouré, and Thomas W. Wolfe (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1963), 94.

9. V. D. Sokolovskiy, *Soviet Military Strategy*, 3d ed., ed. Harriet Fast Scott (New York: Crane, Russak & Co., Inc., 1975), 12.
10. *SALT Lexicon*, rev. ed. (Washington, D.C.: US Arms Control and Disarmament Agency, 1975), 3.
11. *Arms Control Report* (Washington, D.C.: US Arms Control and Disarmament Agency, July 1976), 30.
12. Dick Cheney, *Report of the Secretary of Defense to the President and the Congress* (Washington, D.C.: Department of Defense, January 1993), 1.
13. AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force*, 14 February 1979, 2-7, 2-8.
14. AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force*, vol. 1, March 1992, 11.
15. Mr Nell, US Air Force Air Combat Command/FM, telephone conversation with author, 24 August 1993.

# VERIFYING CHEMICAL AND BIOLOGICAL WEAPONS TREATIES

## Is the Constitution a Stumbling Block?



MAJ RICHARD W. ALDRICH, USAF  
MAJ NORMAN K. THOMPSON, USAF\*

**W**ITH THE PENDING ratification of the Chemical Weapons Convention (CWC) and the contemplation of a similar treaty to cover biological and toxin weapons (BTW), there is fear that the accompanying verification inspections will spark legal battles in the United States over the infringement of the right to be free from unreasonable searches and

seizures that is guaranteed by the Fourth Amendment of the US Constitution. This issue did not arise in nuclear weapons treaties because the sophisticated technology needed to produce these weapons limited the number of inspection sites to those either directly or indirectly under government control. Chemical weapons (CW) and BTW, by contrast, can be readily produced at thousands of government and privately owned sites around the world and are far more difficult to detect by nonintrusive means (e.g., satellites). This article focuses primarily on the search and seizure problems arising from domestic inspections of such facilities under the CWC.

\*The paper upon which this article is based was produced pursuant to a grant from the Institute for National Security Studies, USAF Academy. Grateful acknowledgment is given to Lt Col John W. Obringer, Department of Biology, USAF Academy, for his helpful technical advice throughout this project, and to C1C Kevin Moffatt for his research assistance.

The Chemical Weapons Convention was opened for signature on 13 January 1993. To date, 146 nations have signed the treaty and several have already ratified it. The treaty provides for a thorough inspection regime to ensure compliance with its requirements that all parties to the treaty cease developing, producing, stockpiling, transferring, and using chemical weapons immediately and that they destroy all existing stockpiles within 10 years. Parties to the CWC have at least until January 1995 to prepare for its implementation. The Biological and Toxin Weapons Convention (BTWC) has been in place for over two decades but has no effective inspection regime. Some 110 countries have ratified the BTWC, which prohibits development, production, stockpiling, acquiring, or retaining biological or toxin weapons. It has been suggested that the CWC inspection regime might act as a model to fashion one for the BTWC.

The implementation of viable verification schemes for these treaties raises a number of significant legal issues relevant to all persons, military and civilian, involved in the research, development, manufacture, distribution, storage, and use of these weapons. In the case of the CWC, the primary inspection sites will be commercial chemical plants, both those that produce CW and others, as well as military CW storage facilities. BTWC inspection sites could include virtually any laboratory engaged in research and development of BTW or antidotes. The major legal issue involves provisions of the CWC that allow for inspection of a broad range of sites, which might not at first appear to involve CW production or storage.

We have tried to anticipate real-world situations and to propose practical solutions for those persons who will actually be involved on both sides of these inspections. We will also explore the feasibility of applying the CWC inspection regime to the BTWC. There are other significant legal issues surrounding implementation

of the CWC, such as liability for claims arising out of poorly executed inspections, that compromise proprietary information. But while such claims could have significant fiscal impact, they are not likely to bar inspections and thus are beyond the scope of this article.

## Importance of Verifying the CWC and BTWC

Both CW and BTW represent significant weapons of mass destruction, and, unlike nuclear weapons, they are relatively easy to manufacture with commercial equipment generally available in any country. Mustard gas, for example, can easily be made from thiodiglycol, a solvent used in ordinary ballpoint pen ink.<sup>1</sup> At least 20 countries either possess or are developing CW,<sup>2</sup> and some 14 countries have been tied to offensive BTW research and applications. There are over 20,000 chemical manufacturing plants in the US alone,<sup>3</sup> and many are capable of producing CW agents. Biological agents can be developed and produced in even the smallest and most unrefined laboratory. Effective weaponization requires more sophistication, but crude weapons require no specific delivery system. Thus, proliferation of these weapons is relatively easy, and compared to conventional assets, their destructive potential is very impressive. Biological weapons have such stunning destructive potential and are so easy to manufacture that they have been called the poor man's atom bomb.<sup>4</sup> Table 1 illustrates this point:

While nuclear weapons have not been used since World War II, chemical weapons have been used or have been a significant threat in at least a dozen conflicts in the last 50 years. Countries in which chemical weapons have been used include Korea, Yemen, Vietnam, Laos, Cambodia, Malaya, Afghanistan, Burma, Ethiopia, Chad, Angola, Iran, and Iraq.<sup>5</sup> In



**Table 1**  
**Comparison of Weapon Efficacy\***

Warhead Type	Number Injured	Number Dead
Conventional (1 ton high explosive)	13	5
Chemical (300 kg of sarin)	200-3,000	200-3,000
Nuclear (20-kiloton yield)	40,000	40,000
Biological (20 kg of anthrax)	—	20,000-80,000

\*Assumes an average population density of approximately 12 unprotected persons per acre.

Source: Adapted from Graham S. Pearson, "Prospects for Chemical and Biological Arms Control: The Web of Deterrence," *Washington Quarterly* 16 (Spring 1993): 150.

the Gulf War, the mere threat that Iraq might use CW often caused allied forces to don full CW protective gear and operate in a degraded state. The list of known and suspected nations with CW includes all of those listed above, plus the United States, United Kingdom, Germany, and Japan.<sup>6</sup> Many of the world's major CW producers—nations such as Libya, Iraq, and Syria—have yet to sign the CWC.

There has never been a proven intentional use of BTW; however, as recently as September 1988, there was strong evidence that an outbreak of typhoid fever in the Kurdish city of Sulaymaniya was caused by an artificially produced agent. Iraq was accused of starting the epidemic, but the link was not conclusively proven.<sup>7</sup> Bulgaria, China, Cuba, Egypt, Iran, Iraq, Israel, North Korea, Libya, Romania, South Africa, the former Soviet Union, Syria, and Taiwan have all been accused of involvement in offensive BTW activities.<sup>8</sup> Iraq had denied having a biological weapons program, but subsequent to the Gulf War, the United Nations Special Commission found evidence to support the existence of such.

Implementation of the CWC's verification scheme is required by the terms of the

agreement. The desirability of adding a verification regime to the BTWC stems from the importance of ensuring that BTW is not added to the list of the world's armaments. The BTWC "was the first modern treaty to accomplish true 'disarmament,' ridding the parties of an entire category of weaponry."<sup>9</sup> The CWC attempts to do the same to chemical weapons over a period of 10 years. With dramatic advances being made in the fields of biology and genetics, it is increasingly important that biological weapons be excluded from the world's arsenals. Without a verification regime, the BTWC is somewhat like a handsome facade. It is nice to look at but lacks real substance. One might analogize the situation to one in which a parent directs her teenager to make sure his room is clean and neat but adds that she never intends to actually check on it. Because of this perceived weakness, "recently, there have been proposals to strengthen the verification mechanisms [of the BTWC] to provide a data reporting system and the capability for international inspections."<sup>10</sup> Many are watching the work of the Preparatory Commission (PREPCOM) to see if the CWC is a viable model.

## The CWC Verification Regime

Verifying any CW or BTW treaty will be difficult at best. Even in Iraq, subject to intensive inspection with inspectors given run of the country, the discovery of evidence inculpatory Iraq for its chemical and biological weapons programs was slow and difficult in coming. It was largely fortuitous that a classified military document was discovered that prompted the Iraqis to finally concede their complicity in biological weapons research. All of this occurred in spite of the fact that Iraq ratified the 1925 Gas Protocol<sup>11</sup> and was a signatory to the BTWC.



*Chemical and biological weapons will continue to be a wartime threat because of their stunning destructive potential and their ease of manufacture. Here, two US service personnel don protective gear during the Gulf War.*

The CWC inspection regime calls for a two-tier system of inspections: routine, planned inspections of known CW sites, and short-notice "challenge inspections," which any signatory nation can demand, of suspected CW sites anywhere within the borders of the challenged nation. The latter inspection type is cause for concern since the Fourth Amendment to the United States Constitution sets out certain protections against unreasonable searches and seizures by agents of the government.

#### ***Routine Inspections***

Routine inspections under the CWC will cover only certain specified types of facili-

ties (primarily commercial chemical plants and military CW storage facilities) on the basis of their function and the types of chemicals that are stored or developed there. These producers and some consumers of treaty-controlled compounds must file declarations with regard to their production of certain scheduled chemicals and the contents of storage facilities. Each state party will in turn use this information to file its declarations with the international inspectorate. This information will provide the basis for inspections to ensure that facilities are operating within the limitations of their declarations. While inspections of such facilities are called routine, they will nevertheless be

accomplished on a random basis to better ensure the validity of the inspection.

Routine inspections are primarily aimed at tracking three chemical groups defined by the treaty as potential CW precursors or actual CW agents. Each schedule is meticulously defined under the treaty, but the schedules can be briefly stated as follows:

**Schedule 1:** Twelve toxic chemicals and chemical groups which have little or no commercial use, and have been developed or used as chemical weapons as defined in Article II of the CWC, or otherwise pose a "high risk" to the object and purpose of the Convention. Examples include: sulfur and nitrogen mustards and nerve agents, such as tabun, sarin, soman, and VX. These chemicals are banned under the treaty, and existing stockpiles must be destroyed over a period of ten years.

**Schedule 2:** A large number of toxic chemicals and precursors which have low to moderate commercial use, but which pose a "significant risk" to the object and purpose of the Convention. The list includes three CW agents and several precursors which are one or more steps removed from CW agents, but which are produced for nonprohibited purposes in small commercial quantities. An example is the solvent thiodiglycol. . . . Facilities producing these chemicals must be declared, and will be subject to an initial inspection and no more than two routine inspections per year.

**Schedule 3:** All "dual use" chemicals which pose a "risk" to the Convention, but may be produced in large commercial quantities for nonprohibited reasons. The list includes precursors which are several steps removed from CW, and many highly toxic gases, such as hydrogen cyanide, which have been used as CW in the past, but are now produced in very large quantities for legitimate purposes. Facilities producing over 30 metric tons of these chemicals per year must be declared. Those producing over 200 metric tons will be inspected on a random basis.<sup>12</sup>

Each state party must file its initial declarations within 30 days of the CWC's entering into force. Given the number of chemical production facilities in the US

today, Congress must ratify the treaty and pass the implementing legislation at least six months beforehand to enable collection of the required declarations before this deadline.<sup>13</sup> An initial inspection of each declared facility will be accomplished shortly after the CWC enters into force in order to verify declarations, plan for future inspections, assess the feasibility of continuous monitoring with on-site instruments, and work on facility agreements. It is therefore critical that constitutional problems related to CWC inspections be identified now so that the implementing legislation can resolve them if possible.

### *Challenge Inspections*

Challenge inspections are primarily designed to detect and deter clandestine CW production at undeclared sites. However, any state party to the CWC may demand to inspect virtually *any* site, public or private, declared or undeclared, in the challenged country based upon a mere suspicion that it might be a CW production or storage facility. The rules on providing access to sites pursuant to challenge inspections vary depending upon whether it is a declared or undeclared site. Undeclared sites must provide access within five days and declared sites within a day and one-half. No challenge inspection can last more than three and a half days; however, during that period, access must be granted to the actual site, including visual inspection, the taking of samples and photographs, and records inspection. Classified or proprietary information, unrelated to treaty-controlled chemicals, can be masked, redacted, or otherwise protected by the inspected party.

In a worst-case scenario, severe conflicts could arise between the constitutional rights of the inspected party and a challenge inspection team. For example, a private company or even the owner of a private residence that refused to admit

inspectors based upon the Fourth Amendment to the Constitution could obtain a court order enjoining government agents from entering the site with inspectors. This sort of incident could cause the challenging state party to employ the doctrine of reciprocity and refuse to honor its treaty obligations. In this way, a country desiring to avoid inspection of its own facilities could target sites in the US that would likely resist inspection and then use the incident as an excuse to refuse inspections on its own soil. Challenge inspections could also be misused as intelligence-gathering activities, allowing less-developed countries free access to proprietary information that may have required many years of research and development.

The CWC contains two provisions to help prevent such incidents. First, the challenged state can appeal (within 12 hours of the challenge) to the Organization for the Prohibition of Chemical Weapon's (OPCW) 41-nation Executive Council, and the inspection can be blocked if it is found to be "frivolous, abusive, or beyond the scope" of the CWC. This will hopefully eliminate those inspections that clearly have no real merit and are obviously for improper purposes. Second, and perhaps most important, the United States was able to have an important constitutional qualification inserted into the treaty. It states,

In meeting the requirement to provide access as specified in paragraph 38 [dealing with challenge inspections], the inspected State Party shall be under the obligation to allow the greatest degree of access *taking into account any constitutional obligations it may have with regard to proprietary rights or searches and seizures.* (Emphasis added)<sup>14</sup>

Unfortunately, the constitutional qualifier does not apply to routine inspections of chemicals on schedules 1, 2, or 3, although a similar provision does apply to inspections of "other chemical production facilities." The United States was also unable to obtain a quota on the number of

challenge inspections allowed under the CWC. These two problems raise additional concerns: constitutional complications with regard to routine inspections which go awry, and the lack of a cap on the costs of challenge inspections. This latter issue is of particular concern, since the United States will pay approximately 25 percent of the worldwide costs of implementing the CWC and is far and away the largest contributor to the payment of those costs. There has been some discussion of limiting challenge inspections to four per year and two per site to prevent abuse, although this has at least tentatively been rejected.<sup>15</sup>

While no one can know for certain how many challenge inspections will occur, many observers believe there will be relatively few. One factor is the high political cost if an inspection turns up no evidence of prohibited activity, and thus appears to amount to unjustified harassment. Also, under the time-honored principles of reciprocity, most countries subjected to a challenge inspection will likely demand a challenge inspection of the state party who issued the original challenge. However, informed sources indicate that a number of "honest mistakes" (accidental treaty violations) are expected initially, especially in highly industrialized countries with mature and diverse chemical industries not subject to centralized control by the government.<sup>16</sup> The United States and the United Kingdom are two such countries. An "honest mistake" violation will occur if any chemical plant fails to declare its activities when these activities fit technically within the limits set for declared facilities. For example, if a US company fails to read the *Federal Register* to determine applicable standards and dates for making formal declarations concerning its activities, the US will nevertheless be in violation of the CWC. This is especially apt to occur in companies that do not relate their activities to chemical warfare but whose production nevertheless falls within the scope of activities

monitored under the CWC. Such cases may result in a larger number of challenge inspections in the early stages of CWC implementation.

The fact that a constitutional qualifier was obtained for challenge inspections and the inspections of other chemical production facilities makes it more difficult to claim an implied constitutional waiver as to the routine inspection of scheduled chemical facilities. Somewhat surprisingly, top administration sources indicate that the method by which such facilities will be inspected within the bounds of the Fourth Amendment and the CWC has not yet been worked out. It would appear that schedule 1, 2, and 3 inspections will likely have to make use of administrative searches or other methods set out below, unless and until appropriate contractual provisions are worked out with government contractor chemical facilities. Since most chemical producers are not government contractors, however, cooperation from these chemical producers, the courts, and the OPWC inspectorate will all be key.

## Fourth Amendment Rights

As mentioned above, implementation of the CWC's intrusive inspection regime could well lead to very contentious legal battles pitting the Fourth Amendment rights of inspection subjects against the national interest of having the CWC successfully implemented worldwide. It is appropriate to review the provisions of the Fourth Amendment and its relationship to ratified treaties before proceeding further with an analysis of particular inspection problems and their potential solutions.

In its entirety, the Fourth Amendment reads:

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but

upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

It is the word *unreasonable* that allows for the most interpretation. Some searches or seizures are permitted without a search warrant on the basis that they are not unreasonable. The plasticity of the term has its limits, however.

In order to understand whether the prescriptions of the Fourth Amendment would have any impact on any properly ratified treaty that encroached upon its protections, one must be familiar with the hierarchy of laws in the United States. This hierarchy is set out in Article VI of the Constitution:

This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.

While this simple statement would appear to place the Constitution and treaties on equal footing as the supreme law of the land, the Supreme Court has long interpreted the provision to give supremacy to the Constitution. Logically this makes sense since otherwise the president and the Senate could effectively amend the Constitution by a means other than that set out in the Constitution. Nevertheless, even though we may decide as a country that our Constitution supersedes international agreements, well-established principles of international law require that states act in good faith to comply with treaty obligations and not invoke domestic laws to avoid these duties.<sup>17</sup> Furthermore, the United States has long asserted its acceptance of this principle.<sup>18</sup> Thus, it is important to minimize situations where verification of the CWC may cause domestic legal conflicts and to find workable solutions for

those that do arise lest we lose respect within the international community. If the United States appears to be relying on constitutional conflicts to shield itself from full and open verification, it will provide other nations a convenient excuse for noncompliance.

## Implementing the CWC within the Bounds of the Fourth Amendment

There are two broad categories by which information may be obtained by countries to ensure that other countries are complying with a treaty: national means and cooperative means. National means are largely beyond the scope of the Fourth Amendment, while cooperative means may be prohibited in some cases by the amendment's protections against unreasonable searches and seizures.

### *National Means of Inspection*

*National means* refers to "those systems that are primarily within the control of the inspecting party, and that require only the passive acquiescence of the inspected party in order to function properly."<sup>19</sup> One important subset of national means is national technical means (NTM)—including photoreconnaissance satellites, long-distance seismic sensors, and air-sampling equipment—that are used to collect information from well outside the borders of the observed country.<sup>20</sup> The US and a few other countries possess these means, but they are simply not available to the vast number of state parties under the CWC. Thus, they do not provide a viable means of circumventing constitutional roadblocks since other countries would likely be unwilling to accept the word of those countries able to use these means for verification.<sup>21</sup> Additionally, the CWC calls for a particular kind of intrusive, on-site inspection,

and remote surveillance is simply not an adequate substitute.

The other type of national means is human intelligence (HUMINT), by which information is gathered from diplomats, social and business contacts, espionage agents, defectors, and so forth.<sup>22</sup> It is difficult to detail these methods in an unclassified document, although the Central Intelligence Agency was widely reputed to have provided intelligence to the United Nations working group that inspected Iraq's compliance with terms of the post-Gulf War resolutions requiring Iraq to destroy its weapons of mass destruction.

Our intelligence has also been instrumental in stopping the illegal export of substantial amounts of equipment intended for use in nuclear, chemical, and biological weapons programs in the Middle East and South Asia. Because U.S. intelligence was able to call the attention of European governments to some of their own exporters who were supporting weapons development programs, some of these governments have now tightened export controls significantly.<sup>23</sup>

Russian foreign intelligence (formerly the KGB) "says that chemical and biological weapons can be found only by intelligence operations and not by satellite surveillance."<sup>24</sup>

### *Cooperative Means of Inspection*

As the name suggests, cooperative means require the consent and participation of the inspected country. This includes providing information, allowing on-site inspections, and allowing unmanned sensing devices to be installed within the inspected nation's borders.<sup>25</sup> The Intermediate-range Nuclear Forces (INF) Treaty, for example, requires manned on-site inspections. While the prospect of Soviet inspectors living just outside nuclear weapons facilities within the United States at first seemed unthinkable, implementation of the treaty provision has been relatively smooth. Under UN Security

Council Resolution 687. Iraq was required to cooperate in the identification and destruction of its weapons of mass destruction. Significant problems have plagued the process for over two years. When UN inspectors suggested installing monitoring systems in certain buildings, the Iraqis protested. With the threat of US air attacks, Iraq finally agreed, though shortly after installation, problems were encountered that caused the monitoring systems to cease to perform.

Clearly, the effectiveness of cooperative means of verification varies greatly with the parties involved and often poses substantial problems, especially in countries actively trying to shroud their violations. The types of cooperative means employed and the manner in which they are effected may also trigger search and seizure concerns under the Fourth Amendment. To that extent, the Constitution may limit such information-gathering techniques. In this regard, it is important to note that while the Fourth Amendment is applicable only to the federal and state governments and not to the actions of private citizens or foreign governments, searches and/or seizures by agents of a foreign government done under the auspices of a treaty entered into by the United States would likely be deemed to have the consent and assistance of American governmental agents. They would therefore be subject to the same restrictions placed on searches and seizures done by federal or state agents.

### *Inspections of Places*

The place to be searched is significant because the courts may accord more or less protection under the Fourth Amendment based upon who controls the site in question. There are basically three broad categories into which all potential CWC inspection sites may be grouped: government facilities, government contractor facilities, and private facilities with no government connection. The vast majority

of CW production sites is owned by government contractors, but these sites will have little significance once the treaty is implemented since new schedule 1 chemical production will cease. Nevertheless, government contractors may well be used to destroy existing stockpiles and thus may possess large amounts of schedule 1 chemicals. Most schedule 2 and 3 sites, the vast majority of all likely inspection targets, will be private commercial plants with no government connection. Finally, most CW storage facilities are DOD installations, and thus purely under government control. Most BTW sites are either government contractors or government facilities. There are no significant known stockpiles of BTW, since the BTWC has prohibited this activity for over 20 years.

**Government Facilities.** Many scholars have dismissed the applicability of the Fourth Amendment to government facilities, stating, "The national government itself has no constitutional rights, and it may agree to grant foreign inspectors access to government facilities, records and weapons."<sup>26</sup> We would qualify that position for three reasons: (1) The distinction between public and private control over the place is not dispositive of Fourth Amendment rights in all cases; (2) The Fourth Amendment protects privacy rights, not property; and (3) The small size of biological weapons raises substantial issues involving searches of persons and areas within public facilities in which those persons have a privacy right.

The courts have recognized that the public or private nature of the physical location in which an expectation of privacy is asserted is not, by itself, dispositive of the issue for Fourth Amendment purposes.<sup>27</sup> Thus, the Supreme Court has held that "the Fourth Amendment protects *people*, not places. What a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection. . . . But what he seeks to preserve as private, even

in an area accessible to the public, may be constitutionally protected." (Emphasis added)<sup>28</sup>

It is axiomatic that the government itself cannot claim the protections of the Fourth Amendment because the amendment only applies to "the people." But the people who work for the government do not lose the protections of the Fourth Amendment merely because of their location in a government facility.<sup>29</sup> "A government office as well as one in the private sector is not a public area; trespass, in the guise of an illegal search and seizure, can be committed against one who occupies the office."<sup>30</sup>

Military courts have also recognized privacy interests in government facilities being used as quarters. *United States v. Thatcher*<sup>31</sup> recognized an expectation of privacy in a barracks room, while *United States v. Figueroa*<sup>32</sup> recognized an expectation of privacy in on-base quarters. Recently, the Court of Military Appeals extended the recognition of an expectation to privacy in one's on-base quarters to the fenced-in grounds surrounding those quarters when it overturned the admissibility of evidence discovered by two security policemen who surreptitiously gained access to the appellant's patio, resulting in the subsequent evidence being derivatively tainted.<sup>33</sup> Rule 314(d), Military Rules of Evidence, *Manual for Courts-Martial [MCM], United States, 1984*, states, "Government property may be searched under this rule [which sets out searches not requiring probable cause] unless the person to whom the property is issued or assigned has a reasonable expectation of privacy therein at the time of the search." Under normal circumstances, a person does not have a reasonable expectation of privacy in government property that is not issued for personal use. Wall or floor lockers in living quarters issued for the purpose of storing personal possessions normally are issued for personal use; but for the determination as to whether a person has a reasonable expectation of pri-

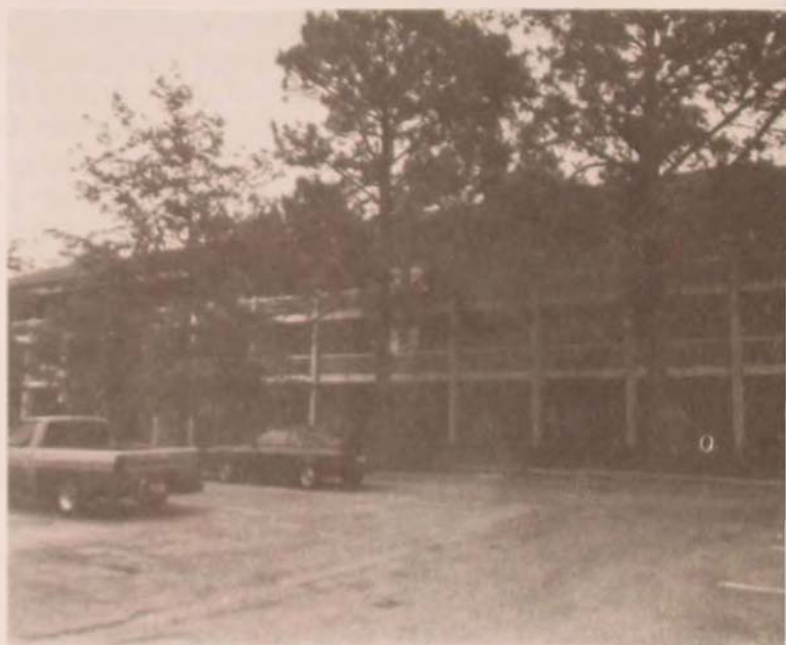
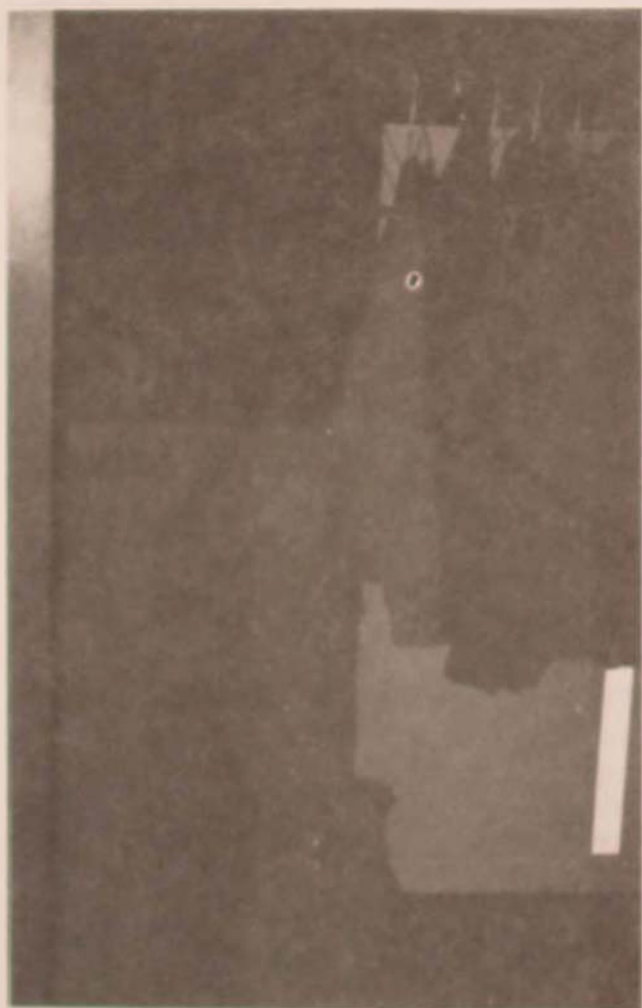
vacy in government property issued for personal use depends on the facts and circumstances at the time of the search. Rule 315(c)(2), Military Rules of Evidence, *MCM* indicates a search authorization may be issued for searches of "[m]ilitary property of the United States or of non-appropriated fund activities of an armed force of the United States wherever located," implicitly indicating that such authorizations may be necessary in situations more diverse than government offices and quarters.

The Supreme Court has made clear recently that the distinction between privacy and property is not case dispositive. In *Katz v. United States*,<sup>34</sup> the Supreme Court held that "the Fourth Amendment protects privacy, not property." The state pressed the bounds of that holding in *Soldal v. Cook County, Ill.*<sup>35</sup> when it argued that assisting in the removal of an entire mobile home did not raise the privacy issues inherent in entering a house and removing objects from therein and that the Fourth Amendment was therefore not implicated. The Supreme Court disagreed, revising its holding in *Katz* by asserting that the Fourth Amendment "protects property as well as privacy."

The search of a government employee's desk may be inconsequential in the nuclear or possibly even the chemical weapons arena because of the need for larger quantities of materials, delivery vehicles, and large complex manufacturing plants. None of these prerequisites is necessary in the arena of biological weapons, however, so the issue becomes pertinent.

**Government Contractor Facilities.** In 1988, the Department of Defense was supporting biological research at 100 sites, including many prominent universities, in 27 states and eight foreign countries.<sup>36</sup> Nevertheless, only a handful of companies produce schedule 1 chemicals for the government, and these are primarily for the development of defensive, medical, phar-





*Military courts have recognized privacy interests in government facilities used as quarters. This includes a right to privacy in on-base family quarters (top) and barracks (above) and usually extends to wall and floor lockers issued for private use to trainees in accessions programs (left).*

maceutical, and research purposes.<sup>37</sup> Government contractor facilities can be broadly subdivided into those that are located within or outside the United States. Since the latter category is a much smaller and less significant category, we will briefly deal with it first.

The US Navy issued a research grant to Queensland University in Australia to study sea wasp toxins. If a signatory country suspected the intent of the study was contrary to that permitted under the BTWC, could the challenging country inspect the facility in Australia even if Australia did not sign the prospective enforcement treaty? And if not, does this create a loophole by allowing countries to escape the inspection and verification regime by contracting out research to countries not signatory to the enforcement treaty?

In response to the first question, the issue would probably be resolved in accordance with treaties existing between the countries and/or the law of the country in which the search is to be conducted. If the person to be searched in the foreign country is not an American citizen, it would appear that the search would not raise Fourth Amendment concerns, even if done by agents of the United States government. The Supreme Court held in *United States v. Verdugo-Urquidez*<sup>38</sup> that the warrantless search of a Mexican citizen's house in Mexico by United States law enforcement officers was not barred by the Fourth Amendment.<sup>39</sup>

In response to the second question, the CWC seems to have envisioned the potential for a country to use another as a surrogate. Thus, the CWC talks of both the inspected state party and the host party. With so many countries as signatories, it seems unlikely that one of the few nonsignatory countries would be a dependable party to conduct research in weapons of mass destruction, whether chemical or biological.

Despite the large number of facilities contracted to do research in biological

warfare, it would appear that searches of such government-contracted biological research sites would best be approached by contractual agreement or by administrative searches. These options and several others are discussed below.

The United States could include a provision in all government contracts waiving protection against warrantless inspections. The Supreme Court has upheld similar arrangements.<sup>40</sup> The contractual provision would have to be included in all contracts in which work of a chemical or biological nature might be of interest to foreign inspectors. Of course, many companies do chemical and biological research without a government contract, so this would only be a partial solution. Additionally, in order to cover all government contractors, the government would have to renegotiate all those contracts already in existence. It is unclear what breadth the courts would give to the waiver. For instance, if a company had a very narrowly drawn contract with the government to research an antidote to one particular chemical or toxin, would this allow the government to conduct warrantless searches of the entire company, even into areas clearly not encompassed by the contract? The answer to this question would likely lie in the exact wording of the waiver as well as considerations of reasonableness and conscionability.

Closely related to a contractual waiver would be a consent to search on an ad hoc basis. While obtaining a valid consent to search would satisfy Fourth Amendment concerns, the solution is an unreliable one, dependent in each instance on the cooperativeness of the inspected party. The inconvenience and cost likely to be associated with such inspections, and the legal sophistication of the most likely inspection targets, would probably mean that valid consent would be given only in very rare cases. This option, then, does not provide a long-term solution within the context of international treaty obligations.

Criminal search warrants would certainly satisfy Fourth Amendment concerns. However, criminal search warrants are issued only upon a showing to a neutral and detached magistrate<sup>41</sup> that probable cause exists to believe contraband or the instrumentalities of a crime will be found in the place specified. This requirement circumscribes a class of cases far narrower than those which would likely be allowed an international inspectorate under a verification protocol. Thus, resort to administrative searches will likely be necessary.

The Supreme Court has recognized a separate class of searches deemed "administrative searches," which are searches done by public officials other than law enforcement officers such as Occupational Safety and Health Administration (OSHA) inspectors, housing inspectors, or the like. These administrative searches may in some cases be done without warrant. Thus, the Supreme Court has held that

in certain circumstances government investigators conducting searches pursuant to a regulatory scheme need not adhere to the usual warrant or probable-cause requirements as long as their searches meet "reasonable legislative or administrative standards."<sup>42</sup>

Even where a warrant is required, however, the court has permitted a lower standard than probable cause for the issuance of such warrants.<sup>43</sup> This lower standard is sometimes confusingly referred to as "administrative probable cause," but its determination is based on a weighing of the extent of the privacy invasion against the public interest in the inspection.<sup>44</sup> The potential use of administrative searches in the context of an international treaty is discussed below.

At one time, the Court held that *civil* searches were outside the protection of the Fourth Amendment, which the Court held was aimed at protecting against searches for *criminal* evidence.<sup>45</sup> The Court has since abandoned this distinc-

tion, relying now more on the "reasonableness" of the search under the particular circumstances.

The warrant procedure is designed to guarantee that a decision to search private property is justified by a reasonable governmental interest. But reasonableness is still the ultimate standard. If a valid public interest justifies the intrusion contemplated, there is probable cause to issue a suitably restricted warrant.<sup>46</sup>

Thus, the burden in an administrative search warrant is quite different from the probable cause determination necessary in a criminal search warrant. There appears to be no uniform standard for administrative search warrants. It will vary based on a number of factors,<sup>47</sup> but ultimately requires a balancing of the need to search against the invasions which the search entails.<sup>48</sup>

The immunities of [the Fourth] amendment and Amendment 5 against unreasonable search and seizure and self-incrimination are not absolute, but are subject to waiver, and he who enters into or continues in, a business subject to official regulation voluntarily submits his business records and papers to such visitorial examination as the law contemplates and in that measure waives his constitutional immunities of privacy in respect of his papers and against compulsory testimony.<sup>49</sup>

The Supreme Court has recognized an exception to the search warrant requirement for industries with a history of government oversight, such as the liquor and firearms industries.<sup>50</sup> The Court has made clear, however, that this is the exception, not the rule. Nominal government supervision will be held insufficient.<sup>51</sup> Rather, Congress must pass suitable legislation to fit the industry under the warrant exception. Thus, the Court stated in *Donovan v. Dewey*<sup>52</sup> that

a warrant may not be constitutionally required when Congress has reasonably determined that warrantless searches are necessary to further a regulatory scheme and the federal regulatory presence is sufficiently

comprehensive and defined that the owner of commercial property cannot help but be aware that his property will be subject to periodic inspections undertaken for specific purposes.<sup>53</sup>

Thus, it would appear that Congress must carefully craft implementing statutes to allow for the possibility of constitutional warrantless searches. However, even this may not be enough, since the Court stated in another opinion that "the element that distinguishes these enterprises from ordinary businesses is a *long tradition* of close government supervision" (emphasis added).<sup>54</sup> Thus, implementing legislation may only be effective if one can show that the biological agents industry has a long tradition of close government supervision. Such a showing may be difficult to make in light of the fact that even those who have researched the applicability of administrative searches in the more heavily regulated chemical industry have cast doubt on whether the standard is met.<sup>55</sup>

The requirements for warrantless searches were formalized in *New York v. Burger*,<sup>56</sup> where the Supreme Court established a three-pronged test for a closely regulated industry to be searched without a warrant:

1. there must be a "substantial government interest,"
2. the inspection must be "necessary to further the regulatory scheme," and
3. there must be "certainty and regularity of [the inspection's] application."

The first two prongs could probably be met under the CWC or any similar BTW verification regime, assuming appropriate implementing legislation. The last prong, however, is problematic. With regard to the last prong, the Court has said that warrantless inspections "may be constitutionally objectionable if their occurrence is so random, infrequent, or unpredictable that the owner, for all practical purposes, has no real expectation that his property will from time to time be inspected by govern-

ment officials."<sup>57</sup> Yet randomness and unpredictability are precisely the goals of verification inspections.

Finally, while a warrantless search is authorized under these limited conditions set out by the courts, it appears that even in these situations, if the owner of the property refuses to permit the search, force may not be authorized to effect the search. Rather, the government may then be forced to obtain a search warrant anyway—though it appears that the obtaining of a warrant under such circumstances will be under the lower standard applicable to administrative searches discussed above.<sup>58</sup>

***Biological Inspections and the Closely Regulated Industry Exception.*** Currently, biological research is directly or indirectly controlled by regulations issued by the Department of Defense, the Department of the Army, the Department of Commerce, the Department of Labor, the Department of Agriculture, the Department of Transportation, the United States Public Health Service, the United States Postal Service, the Environmental Protection Agency, the Centers for Disease Control, the National Institutes of Health, the Food and Drug Administration, the Nuclear Regulatory Commission, the Department of the Interior, and various state and local regulatory agencies.<sup>59</sup> Nevertheless, the biological industry as a less-developed industry, appears to be less heavily regulated than the chemical industry, with its extensive Toxic Substances Control Act.<sup>60</sup>

The Court's findings as to which industries are closely regulated and which are not, therefore delineating which industries are subject to warrantless inspections and which are not, has formed a less than clear pattern. At least in some jurisdictions, firearms dealers have been held to be in a closely regulated industry (*United States v. Biswell*),<sup>61</sup> as have dealers in automotive parts (*Bionic Auto Parts and Sales, Inc. v. Fahner*),<sup>62</sup> horse racing (*Shoemaker v. Handel*),<sup>63</sup> and day-care

providers (*Rush v. Obledo*).<sup>64</sup> On the other hand, those operating apiaries have been held not to be in a closely regulated industry (*Allinder v. Ohio*),<sup>65</sup> nor have those operating bookstores and theaters (even where an ordinance required licensing and acceptance of the license was deemed a consent to inspection [*Marks v. Newport*]),<sup>66</sup> or businesses being inspected for environmental violations (*Commonwealth, Dept. of Environmental Resources v. Fiore*).<sup>67</sup>

The exigent circumstances exception to the general requirement of a search warrant was recognized in *New York v. Belton*.<sup>68</sup> See also *United States Code Annotated*, Title 18, secs. 175–78: “This exception is intended to be used in rare instances in which the danger to public health and safety, or to the environment, is so extreme that applying for a warrant is impracticable.” This exception would be of little use, since inspections under the CWC allow sufficient time to try and procure a warrant in either a routine or challenge inspection.

***Nongovernment-Affiliated Facilities.*** Basically, nongovernment-affiliated facilities would be dealt with in largely the same way as government contractor facilities, though without the option for a contractual waiver of Fourth Amendment rights. Without the fear of losing a government contract, some nongovernment-affiliated facilities may also be less inclined to be as cooperative. If the facility does not engage in government contracts because it is too small, it may also be less cooperative for cost reasons—being unable to absorb the costs expected to be associated with such inspections.

### ***Inspections of Persons***

The CWC provides not only for inspection of places, but also the collection of samples from humans, such as blood, urine, excreta, and tissue. This appears to present an almost insurmountable Fourth

Amendment problem. The extreme invasiveness of extracting blood, urine, excreta, or tissue from a person makes this provision the most difficult to conform to under current constitutional law. Certainly, valid consent by the individual from whom the sample is sought would eliminate the problem in individual cases. Additionally, where a valid criminal search warrant was obtained, a forcible sample could legally be obtained even against the will of the individual. These situations would likely constitute only a small minority of cases, however.<sup>69</sup> Discussions with a top official in the OPCW revealed no current plan for dealing with this apparent legal challenge, which exists not only in the United States but in virtually every surveyed country.<sup>70</sup> Indeed, the approach that apparently will be taken is to interpret the provision in a manner with which most countries will feel comfortable and not press the issue.

## **Conclusions**

The Fourth Amendment implications of verifying the CWC and of developing a regime for verifying the BTWC are significant but probably not insurmountable. Potential difficulties with a BTWC inspection regime can be significantly reduced by including constitutional qualifiers for all prospective inspections—unlike the CWC, which has significant gaps in its constitutional qualifier protection. Agreements to allow for testing of body tissue or fluids should be made under only the most restricted conditions, and, even then, the inclusion of a constitutional qualifier is recommended.

Of course, constitutional qualifiers are no panacea. They allow loopholes for signatory nations, which may undermine the entire verification regime. Without constitutional qualifiers, inspections may still be possible under contractual provisions by which government contractors waive their Fourth Amendment protections. For non-

government contractors or private individuals, valid consent will suffice, though this option provides little confidence in guaranteeing cooperation under a long-term international treaty. In that case, warrantless administrative searches and/or administrative search warrants provide some prospect for relief. Conventional exceptions to the warrant requirement may provide assistance in rare cases, such as exigent circumstances, plain view, and the like, but will fail to provide addi-

tional options under most circumstances. Protecting the world from the potentially catastrophic effects of the large-scale use of chemical and biological weapons is essential. Therefore, countries should continue to work through the legal issues to come up with the best solution, even if some legal pitfalls must inevitably remain. In the end, the international political pressure that can be brought to bear against violators of even an imperfect agreement may hold renegade nations in check. □

### Notes

1. US Congress, Office of Technology Assessment, *The Chemical Weapons Convention: Effects on the U.S. Chemical Industry*, OTA-BP-ISC-106 (Washington, D.C.: Government Printing Office, August 1993), 7. Hereinafter *Effects on Chemical Industry*.
2. Center for Verification Research, *Global Proliferation: Dynamics, Acquisition Strategies, and Responses*, DNA-001-89-C-0204, vol. 3 (Alexandria, Va.: Defense Nuclear Agency, 1992), 2. Hereinafter *Global Proliferation*.
3. *Effects on Chemical Industry*, 8.
4. B. Gaffney, "The Poor Man's Atomic Bomb," *Baltimore Sun*, 1 April 1988, 8.
5. *Global Proliferation*, 1.
6. *Ibid.*, 5. The United Kingdom, Germany, and Japan claim to have ceased all CW activities.
7. "A Biological Smoking Gun," *Toronto Star*, 7 January 1993, A15.
8. *Countering the Chemical and Biological Weapons Threat in the Post-Soviet World, Report of the Special Inquiry into the Chemical and Biological Threat of the Committee on Armed Services*, House of Representatives, 102d Cong., 2d sess., 11.
9. D. Koplou, "Parsing Good Faith: Has the United States Violated Article VI of the Nuclear Non-Proliferation Treaty?" *Wisconsin Law Review* 301 (1993): 307.
10. Jozef Goldblat and Thomas Bernauer, *Bulletin of Peace Proposals* 23 (1992): 35.
11. The Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare [hereinafter the 1925 Gas Protocol], prohibits the use of bacteriological weapons. The treaty has been ratified by over 100 countries, but biological and chemical weapons are still being developed and used by many of these nations. See *League of Nations Treaty Series*, vol. 94 (Nancy, France: Berger-Levrault, 1929).
12. "Draft Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction," UN Doc. CD/1173 (1992) (hereinafter "CWC"), annex on Chemicals, n. 16.
13. *Effects on Chemical Industry*, 10.
14. "CWC," annex 2, pt. X, par. 41.
15. Dr Donald C. Claggett, Organization for the Prohibition of Chemical Weapons Provisional Technical Secretariat, personal interview with author, 8 July 1993.
16. *Ibid.*
17. Article 13, *Declaration of Rights and Duties of States, as Adopted by the International Law Commission* (Lake Success, N.Y.: United Nations, 1948), 88-90.
18. *Papers Relating to the Foreign Relations of the United States, 1887* (Washington, D.C.: Government Printing Office), 751-53.
19. Koplou, 230.
20. *Ibid.*
21. For additional insights, see J. Aroesty, K.A. Wolf, and E. C. River, *Domestic Implementation of a Chemical Weapons Treaty*, Rand Report R-3745-ACQ (Santa Monica, Calif.: Rand Corporation, 1989).
22. Koplou, 230.
23. Statement of James Woolsey, director of Central Intelligence, before the Permanent Select Committee on Intelligence, US House of Representatives, Federal News Service, 9 March 1993.
24. "KGB Lifts the Lid on the World's Dirty Weapons," *The Independent*, 28 February 1993, 12.
25. Koplou, 240.
26. *Ibid.*, 291. Accord L. Henkin, *Foreign Affairs and the Constitution* (Mineola, N.Y.: Foundation Press, 1972), 190; E. Tanzman and J. Stockton, *Harmonizing the Chemical Weapons Convention with the United States Constitution*, DNA-TR-91-26 (Alexandria, Va.: Defense Nuclear Agency, 1 November 1991), 15.
27. *Morton v. State*, 284 Md. 526, 397 A.2d 1385 (1979).
28. *Katz v. United States*, 389 U.S. 347, 351 (1967) (citations omitted), held that Fourth Amendment protections applied, on the facts of this case, even to a glass-walled public telephone booth in a public airport.
29. See, for example, *O'Connor v. Ortega*, 480 U.S. 709 (1987). While the Court approved of a warrantless search of a government worker's desk in this case, the Court nevertheless recognized certain expectations of privacy and Fourth Amendment limitations on searches of government workers' desks and file cabinets.
30. *United States v. Nasser*, 476 F.2d 1111 (7th Cir. 1973). Accord *United States v. Taketa*, 923 F.2d 665 (9th Cir. 1991). A state agent's expectation of privacy in a government office at the airport was reasonable despite the fact that other employees had access to the office, that the agent in charge consented to the search, and that the object of the search was wrongfully appropriated government property. *United States v. Hagarty*, 388 F.2d 713 (7th Cir. 1968), held that lis-

tening devices could not be placed in an Immigration and Naturalization Service (INS) office without the occupant's consent. But see *Schowengerdt v. United States*, 944 F.2d 483 (9th Cir. 1991), *cert. denied*, 112 S. Ct. 1514 (1992), which held that there was no reasonable expectation of privacy in office or desk, even if locked, by a Navy civilian working in a classified environment constantly subject to search and surveillance.

31. 28 M.J. 20 (CMA 1989).

32. 35 M.J. 54 (CMA 1992).

33. *United States v. Kaliski*, No. 93-0069 (1 June 1993). While standing on the appellant's patio, the police peered for over thirty minutes through an eight- to ten-inch opening in the drapes covering a rear sliding glass door of the appellant's bachelor officer's quarters in order to observe the appellant engage in prohibited sexual acts.

34. 389 U.S. 347 (1967).

35. 113 S. Ct. 538 (1992).

36. *Global Proliferation*, vol. 4, 15, citing "Poison on the Wind: The New Threat of Chemical and Biological Weapons," *Christian Science Monitor*, 15 December 1988, 12.

37. *Effects on Chemical Industry*, 14.

38. 494 U.S. 1092, *reh'g denied*, 494 U.S. 1092 (1990).

39. For a discussion of the legal implications likely to be encountered in searches performed in foreign jurisdictions, see B. Kellman et al., *A Comparative Study of Legal Implementation of the Chemical Weapons Convention in Foreign Jurisdictions*, DNA-TR-91-216 (Alexandria, Va.: Defense Nuclear Agency, 9 April 1993).

40. See, for example, *Zap v. United States*, 328 U.S. 624 (1946), *vacated on other grounds*, 330 U.S. 800 (1947) (*per curiam*).

41. A warrant issued by the attorney general was held invalid in *Coolidge v. New Hampshire*, 403 U.S. 443 (1971). Likewise, a justice of the peace whose income was in part derived by warrant fees was held not sufficiently neutral and detached. *Connelly v. Georgia*, 429 U.S. 245 (1977).

42. *Griffin v. Wisconsin*, 483 U.S. 868, 873 (1987), citing *Camara v. Municipal Court of San Francisco*, 387 U.S. 523, 538 (1967); *New York v. Burger*, 482 U.S. 691, 702 (1987); *Donovan v. Dewey*, 452 U.S. 594, 602 (1981); and *United States v. Biswell*, 406 U.S. 311, 316 (1972).

43. David M. O'Brien, *Constitutional Law and Politics*, vol. 2, *Civil Liberties and Civil Rights* (New York: W. W. Norton and Co., 1991), 835.

44. *Effects on Chemical Industry*, 13, citing Tanzman and Stockton, 15.

45. *Frank v. Maryland*, 359 U.S. 360 (1959).

46. *Camara v. Municipal Court*, 387 U.S. 523, 539 (1967).

47. *Camara*, *supra* n. 84.

48. O'Brien, 836. See also *New Mexico Environmental Improv. Div. v. Climax Chemical Co.*, 105 N.M. 439, 733 P.2d 1322 (N.M. App. 1986).

49. *Bowles v. Misle*, 64 F. Supp. 835 (D. Neb. 1946).

50. *Colonnade Catering Corp. v. United States*, 397 U.S. 72 (1968); *United States v. Biswell*, 406 U.S. 311 (1972); and *Marshall v. Barlow's, Inc.*, 436 U.S. 307 (1978).

51. *Marshall v. Barlow's, Inc.*, n. 97.

52. 452 U.S. 594 (1981).

53. *Donovan v. Dewey*, 600.

54. *Marshall v. Barlow's, Inc.*, 313.

55. *Effects on Chemical Industry*, 35; and *Dow Chemical v. United States*, 476 U.S. 227 (1986).

56. 482 U.S. 691 (1987).

57. *Donovan v. Dewey*, 452 U.S. 594, 599 (1981).

58. *United States v. Goff*, 677 F. Supp. 1526, 1532-33 (D-Utah 1987), *adhered to on reconsid.*, 736 F. Supp. 1087 (D-Utah 1990). Significantly, however, in the case at issue was the statement that "Congress has not expressly provided for forcible entry in the absence of a warrant and has instead given Government agents a remedy by making it a criminal offense to refuse admission to the inspectors under the [controlling statute]." 677 F. Supp. 1526, 1532 *citing Biswell*, *supra* n. 82, 313. Thus, perhaps it was a deficiency in the way Congress crafted the statute that led to the result.

59. Lt Col John W. Obringer, Department of Biology, US Air Force Academy, Colorado Springs, Colo., and Col M. H. Crumrine, Office of the Assistant Secretary of the Army for Research, Development, and Acquisition (ASARDA), Washington, D.C., interview with authors, 25 June 1993.

60. 15 U.S.C. secs. 2601-2692 (1988). See also chapter 4 of Aroesty, Wolf, and River, "Domestic Implementation of Chemical Weapons Treaty," which deals with other regulations affecting chemicals such as the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. secs. 121-136 (1988); the Occupational Safety and Health Act, 29 U.S.C. secs. 651-678 (1988); the Resource Conservation and Recovery Act, 42 U.S.C. secs. 6901-6987; the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. secs. 9601-9657 (1988); the Superfund Amendments and Reauthorization Act of 1986, and reporting requirements to the International Trade Commission established under 19 U.S.C. secs. 1330-1339.

61. 406 U.S. 311 (1972).

62. 721 F.2d 1072 (7th Cir. 1983).

63. 795 F.2d 1136 (3d Cir.), *cert. denied* 479 U.S. 986 (1986).

64. 756 F.2d 713 (9th Cir. 1985). See also the discussion of "urgent federal interest" in the Report to the House of Delegates, American Bar Association, Standing Committee on Law and National Security and Section of International Law and Practice, July 1985.

65. 808 F.2d 1180 (6th Cir.), *app. dism'd* 481 U.S. 1065 (1987).

66. 344 F. Supp. 675 (E.D. Ky. 1972). The Court's holding came in spite of a state statute that authorized employees of the Pennsylvania Department of Environmental Resources to collect effluent and ground water samples to ensure environmental compliance.

67. 88 Pa. Commw. 418, 491 A.2d 284 (1984), *rev'd* 512 Pa. 327, 516 A.2d 704 (1986).

68. 453 U.S. 454, *reh'g denied*, 453 U.S. 950 (1981).

69. In *Brooks v. East Chambers Consolidated Independent School District*, 730 F. Supp. 759 (S.D. Tex. 1989). The Court held that a school district could not make participation in extracurricular activities contingent upon providing consent to take a urinalysis. This is an important case because young students often enjoy fewer protections because of their minority and concerns for their safety. But see *Schail v. Tippecanoe County School Corp.*, 864 F.2d 1309 (7th Cir. 1988) for a contrary holding.

70. The OPCW official spoke only on the condition he would not be identified. For a survey of countries which would have similar legal problems with obtaining inspections of persons, see B. Kellman et al., *A Comparative Study of the Legal Implementation of the Chemical Weapons Convention in Foreign Jurisdictions*, DNA-001-90-C-0177 (Alexandria, Va.: Defense Nuclear Agency, 9 April 1993).

# CANARIES, MINNOWS, and ARMS CONTROL

## BIOMONITORING FOR VERIFICATION AND COMPLIANCE

LT COL JIM KENT, USAF

**M**OST OF US are familiar with stories about coal miners who used canaries to reveal conditions down in the mine. As long as the birds remained active and sang, the miners were safe to go about their work. However, the birds' silence indicated that air quality in the mine was becoming unhealthy and that it was time to do something. These birds exemplified

a process that has wide application today as a means of evaluating the quality of our environment. We call the techniques associated with these evaluations biomonitoring.<sup>1</sup> We simply study organisms to evaluate the toxicity of people to their environment. For example, we may want to know if an industrial effluent is damaging a river system. By placing small minnows in the effluent and observing their





condition, we have an indicator of the potential biological harm that the discharge presents. Thus, the minnows help us monitor the environment.

How could this information be useful in the political arenas of arms control negotiations? The answer comes from an understanding of the basic principles of ecology—the study of interactions between organisms and their abiotic environment, as well as interactions between different organisms. This discipline entails a systematic understanding of the linkages that exist among all of these interactions.<sup>2</sup> A simple fact that ecology has taught us is that we cannot operate in a vacuum.<sup>3</sup> That is, our actions will affect both the environment and the organisms that exist around us. By learning what these effects are, we learn how to be better stewards of the resources under our control. We can also apply that same technology to verification of arms control.

An exaggerated example may help illustrate the process. Arms negotiators may claim that no biological weapons are being manufactured or stored at a particular site. But they would find that claim difficult to justify if all the cattle downwind from the site suddenly died. Like the canaries and minnows mentioned earlier, the cattle are biological indicators.

The concept of using biomonitoring is appealing from both scientific and political perspectives. Its application fits into those arenas associated with testing, storing, and eliminating weapons—whether chemical, biological, or nuclear—that can serve as biological vectors. By their very definition, weapons are hazardous, dangerous materials. Because organisms exist near these weapons, they run the risk of contamination, which—fortunately—we can detect. From a political standpoint, invasive observation of potential arms sites may be objectionable to the parties involved. Consider the challenges faced by United Nations forces attempting to observe specific locations in Iraq. If we can determine by noninvasive procedures

the types of activities being carried out, negotiations and verifications may proceed much more smoothly.

As a means of understanding the process by which biomonitoring applies in a political arena, this article reviews some of the history of ecological applications in the United States, details some examples of biomonitoring, and explores possible alternatives and scenarios wherein this technology can have a direct impact on arms treaties. This article also considers both the positive and negative aspects of biomonitoring.

## History of Ecological Applications in the United States

Ecology (literally translated from Greek as the study of one's house) is usually confined to scientific inquiries about interaction.<sup>4</sup> How do coyotes affect a population of rabbits? How do grazing cattle affect the soil moisture? How much sunlight do cactus plants require to survive? As scientists gain insight and understanding into the basic principles of ecology, they ask more applied questions. How will a hydroelectric dam affect the environments upstream and downstream? What will be the consequences of building a superhighway through the mountains? How should we design sewage systems for large cities? We discuss the answers to all of these questions as we learn the mechanisms—commonly called linkages<sup>5</sup>—of the interactions. In nature, we describe three basic types of linkages. First, the effects that organisms have on their environments are called *actions*. Second, effects that the environment has on the organism are called *reactions*. Third, effects that organisms have on each other are called *coactions*.<sup>6</sup> As one may well imagine, a diagram of all the interactions that exist in an ecosystem can be

very complex. Figure 1 provides a hypothetical example of a very simple system and illustrates some of the linkages that exist. Biological linkages are not the only interactions that we study. Economic linkages are also very valuable tools in recognizing effects on human systems. For example, protecting the spotted owl has some important economic effects for the local and international communities.

We have recognized that the effects of our activities have existed for a long time. As European settlement of North America progressed, historians noted declines in flocks of passenger pigeons and herds of bison. However, this situation prompted little concern because the frontier was a challenge to be "conquered" rather than understood. Gradually, we began to recognize and appreciate the important values of wildlife—both as components of our world and as harbingers of the overall health of our communities. As we continue to burden our environments with novel chemicals in the form of pesticides, fertilizers, pollutants, and industrial waste, we develop a need to understand the long-reaching effects of our activities. Only that understanding will provide us the information necessary to make

informed and (hopefully) intelligent decisions.

In recent history, the best example of informed decision making came when we identified the dramatic, long-lasting effects of the pesticide DDT and consequently banned the use of this chemical in our country.<sup>7</sup> In order to establish cause and effect associated with the use of pesticides, scientists developed an entirely new discipline—toxicology. Although the Food and Drug Administration for many years has required testing the effects of chemicals on humans, testing their effects on the environment is much more recent.

Such testing has provided a wealth of information and understanding about the linkages that exist in systems worldwide. One critical revelation for biomonitoring is the concept of *biomagnification*, which refers to the increased concentration of a chemical in the tissues of organisms that are found higher on a food pyramid. The example of DDT demonstrates how this phenomenon occurs (table 1). The levels of DDT are almost imperceptible and of no consequence in the water. But concentrations are "magnified" in the merganser to potentially fatal levels. That is, by eating the pickerel, the merganser accumulates

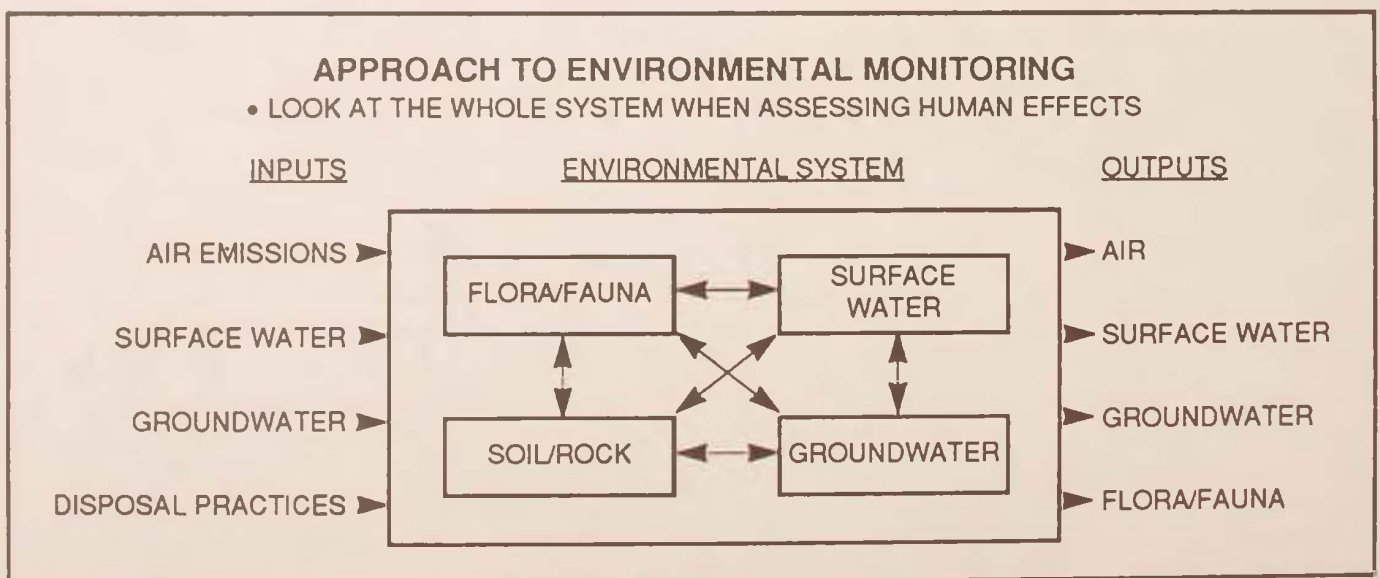


Figure 1. Linkages in a Simplified Ecosystem (From Robert Breckenridge, EG & G Co., Idaho Falls, Idaho)

Table 1

**Food Chain Concentration of DDT,  
a Persistent Pesticide**

<i>Medium</i>	<i>DDT Residue</i> (parts per million)
Water	0.00005
Plankton	0.04
Sheephead Minnow	0.94
Pickerel (predatory fish)	1.33
Merganser (fish-eating duck)	22.8

Source: Eugene Odum, *Basic Ecology* (Philadelphia: Saunders College Publishing Co., 1983), 144.

the DDT concentrated in the pickerel, which ate the sheephead minnow, which ate the plankton, which accumulated DDT from the water.

For many of the common pollutants, a great deal of their natural activity is well understood. We have used this knowledge to establish safety standards that keep environmental risk at some acceptable level. Understanding those risks and developing appropriate safeguards have become a requirement of federal law. All major activities in the federal government have been tasked with protecting our environment. Organizations with major oversight authority and responsibility include the Environmental Protection Agency (EPA), Fish and Wildlife Service, Food and Drug Administration, and Department of Agriculture, all of which have developed an outline of required action (fig. 2). Important aspects of the guidelines include (1) characterization of the exposure, ecology, and risk (linkages illustrated in fig. 1 give us that information) and (2) verification and monitoring. The entire prospect of using biology for treaty negotiations depends upon these two components. If we can monitor systems that we have characterized, we can recognize the environmental effects of weapon development and testing.

## Applications Today

Monitoring our environment either by recording pollutant concentrations or by examining the effects of those pollutants on life remains an ongoing responsibility of industry (both government and private) in the United States. By thoroughly understanding how guidelines are followed in our country, we can develop techniques for applying these monitoring requirements to arms control. Another hypothetical example illustrates the central idea. A municipality may want to construct a new sewage treatment plant on the bank of a river. According to the guidelines in figure 2, five separate steps are necessary to conduct the ecological risk assessment. First, the planning stage includes discussions between the risk assessor (EPA) and the risk manager (sewage plant operator). Together, they determine that the potential problem is sewage discharge into the river (problem formulation—step 2). The third step is characterization of exposure and characterization of ecological effects, involving questions about the maximum amount of sewage that could be released, frequency of discharge, causes of the release (i.e., flooding or system overuse), and potential ecological effects. Important characteristics include the current water quality and an inventory of the fish, invertebrates, and plants in the river. The fourth step, risk characterization, combines probability of a discharge along with predicted effects of that discharge to help establish how closely we need to monitor the system (step five). Data acquisition, verification, and monitoring are feedback mechanisms for the entire process. By measuring bacteria concentrations upstream and downstream from the sewage facility, we can detect changes in the water quality. Another option is to determine if changes take place in the fish community since fish are biomagnifiers of changes to water quality. In both cases, the fish and bacteria act as biological indicators of the

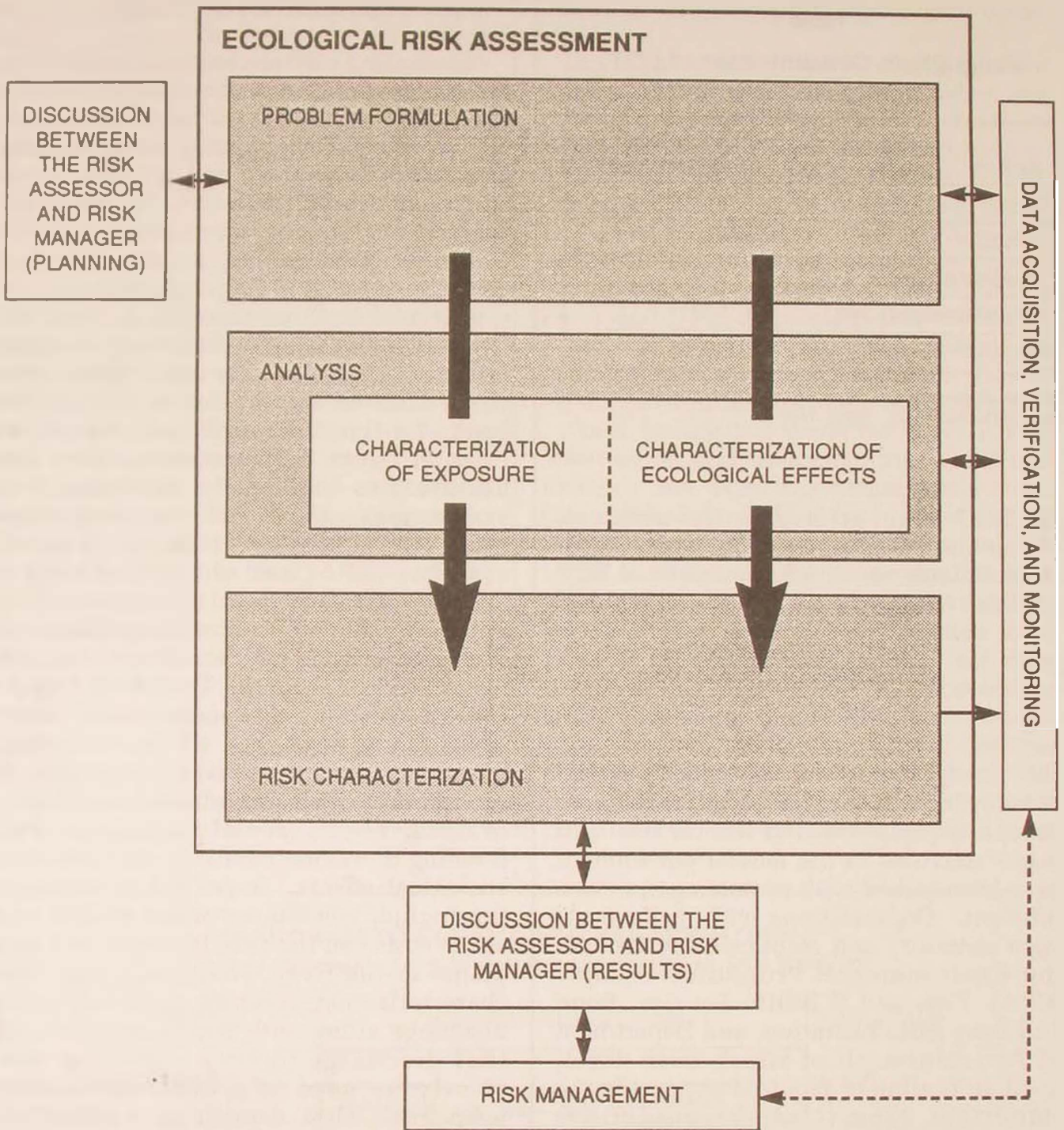


Figure 2. Environmental Protection Agency Framework for Ecological Risk Assessment (From Course on Ecological Risk Assessment and Management, Colorado State University, June 1993)

health of the system. By monitoring them, we can manage the impact on that system.

We can apply this same basic process to arms negotiations. The hypothetical situation involving the sewage plant has just as much relevance for the manufacture of nuclear weapons. In this case, the risk assessor is our arms negotiator, and the risk manager is the opposing arms negotiator. Problem formulation focuses on the opposition's contention that no nuclear weapons are manufactured at a specific site. If we can characterize the exposure by identifying the probable radioactive contaminants and if we can characterize the ecological effects by understanding the ecological linkages, we may be able to develop a monitoring strategy that would allow us to detect small radioactive releases and verify arms control violations. That indicator may be water or soil contamination. It may also be comparisons of the radioactivity of plants, insects, or fish sampled upstream and downstream from the site.

Although the general guidelines for the two examples are the same, their application is very different. For the sewage treatment plant, both parties recognize the existence of a possible problem in a cooperative atmosphere. The goal is to use the monitoring activities as a means of risk management. But the arms negotiators are in a much different environment because their positions are probably adversarial. They do not even agree that a possible problem exists. In fact, the monitoring activities are designed not to manage risk, but to establish that a risk is genuine. The goal has shifted from protecting the environment to identifying a potential environmental (and treaty) abuser. The key to success in arms negotiations is to characterize exposure and ecological effects to identify an accurate indicator.

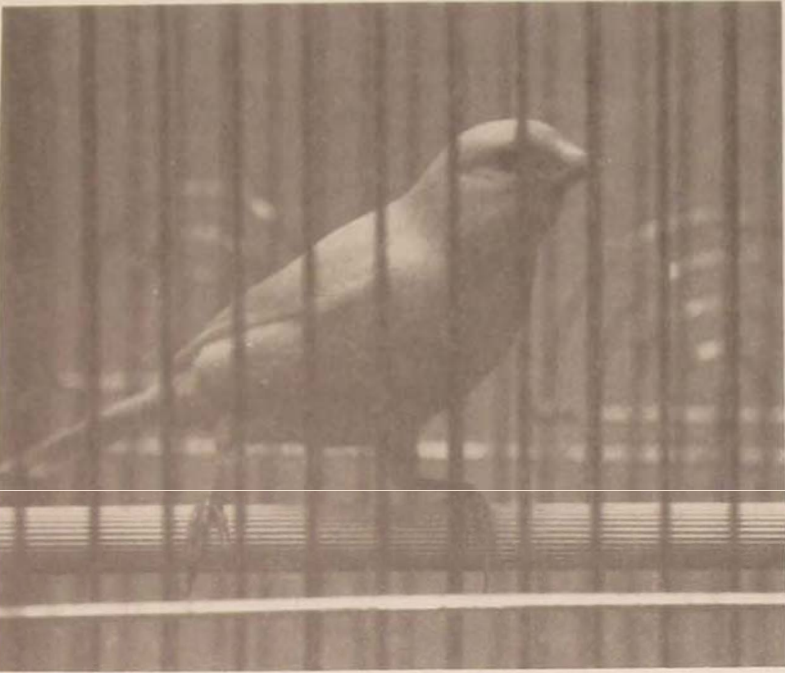
Fortunately, we already know a great deal about monitoring the environment. Because our own weapons laboratories must follow environmental mandates, we have devoted a considerable amount of

research and expense toward environmental surveillance programs that continually monitor environments where we develop, build, and store weapons. Such programs manage risks associated with these activities. Methodologies developed to meet these requirements can apply just as well in arms negotiations.

## Environmental Protection Technologies

The methods we use in tracing the flow of hazardous materials through an ecosystem depend on a huge array of variables that fit into two basic categories: (1) the nature of the pollutant and (2) the characteristics of the environment where the pollutant is found. A number of qualities of the pollutant will help us to manage it. One such quality is toxicity. We are far more concerned about plutonium, for example, than about sewage. Another quality concerns mobility and biological activity. A heavy metal such as zinc is readily absorbed by and used in living tissue. Other concerns include the pollutant's biodegradability—the capacity of the environment to break contaminants down. Raw sewage may be toxic, but it breaks down much more quickly than DDT.

The ecosystem where these pollutants are found is another critical component (see fig. 1 for a simple ecosystem with inputs and outputs). Within the environmental system, we find the actions, reactions, and coactions that circulate pollutants and either expose pollutant toxicity or help degrade it. Returning to our example of a sewage treatment plant, we note that large surface water flow from rainy weather may flood the facility and cause a sewage discharge. If the release is in the winter when the river is biologically inactive, the impact on the system is increased because the quality of the surface water leaving the system is degraded. Therefore, in areas where heavy winter rainfall is



expected, plant personnel should take precautions to reduce risks and assure adequate protection.

Another, more complicated, example has better direct application for arms control. Tritium, a manufacturing by-product of enriched plutonium (used in nuclear weapons), can be incorporated into water molecules. This radioactive pollutant is biologically active and physically mobile. Given off into the atmosphere, it may be returned to earth as rainfall. Buried underground, it could leak into a ground-

*In an early example of biomonitoring, coal miners relied on canaries (left) as indicators of air quality in the mines. Today, examining a river's minnow population (below) can tell us whether industrial effluent is damaging the water.*



water system. If the tritium moves into the soil, it may be accumulated in plant roots (as is ordinary water) and distributed throughout the plant. It may also be redistributed to the air. Contamination of groundwater can appear any time the water system is broken. For example, a spring seeping from the side of a mountain or from a municipal water well may make the tritium available to plant and animal life (both human and nonhuman), where its toxic effects become evident. The transport and cycling of material both by organisms and by physical processes are the avenues by which we learn about the pollutant's presence and its effects.

Since industries that design and build weapons need hazardous materials, we impose strict safety standards on those industries. The Department of Energy's national laboratories in such places as Los Alamos, New Mexico; Savannah River, Georgia; and Oak Ridge, Tennessee, are tasked with maintaining these high standards. Perhaps more importantly, they must also document and demonstrate that these standards are met. Many people are charged with monitoring the health and safety of both the workers and the environment. Most of the ideas for using biomonitoring to verify arms negotiations come from laboratory environmental surveillance programs.

These critical programs follow the EPA guidelines established in figure 2. The development of pollutant, risk, and ecological characterizations is based on the knowledge of the contaminant and the ecosystems involved. The monitoring criteria that are measured include both living and nonliving components of the environmental system outlined in figure 1. Some of the surveillance activities of the Los Alamos Laboratory constitute a good example.<sup>8</sup> The first sampling is done on nonliving components of the environment. Dosimeters—devices that measure radioactivity—are located throughout the laboratory and over its 43-square-mile research park; they detect leaks from

nuclear reactors as well as weapons design facilities. Groundwater, surface water, and soil samples are collected and analyzed regularly. These samples serve two purposes: (1) to identify any discharge of radioactive materials and (2) to track the movement of any contaminants over time. These measurements tell part of the story of protection.

The activity of biological components plays another critical role in determining safety and protection for the laboratory. Because of actions, reactions, and coactions, contamination remains a concern. The potential for biomagnification could render biologically insignificant discharges important. Plant roots might penetrate landfills and recirculate pollutants that were either forgotten or considered harmless. For this reason, plant and animal tissues are examined annually. Garden vegetables upwind and downwind from the laboratory are compared for radioactivity. Fish are sampled upstream and downstream to evaluate water contamination. Careful inventories of birds, mammals, reptiles, plants, and insects are maintained to determine if weapons research affects the natural systems over time. In all these work efforts, the continued monitoring is a requirement of environmental assessment.

## Honeybees as Biological Indicators

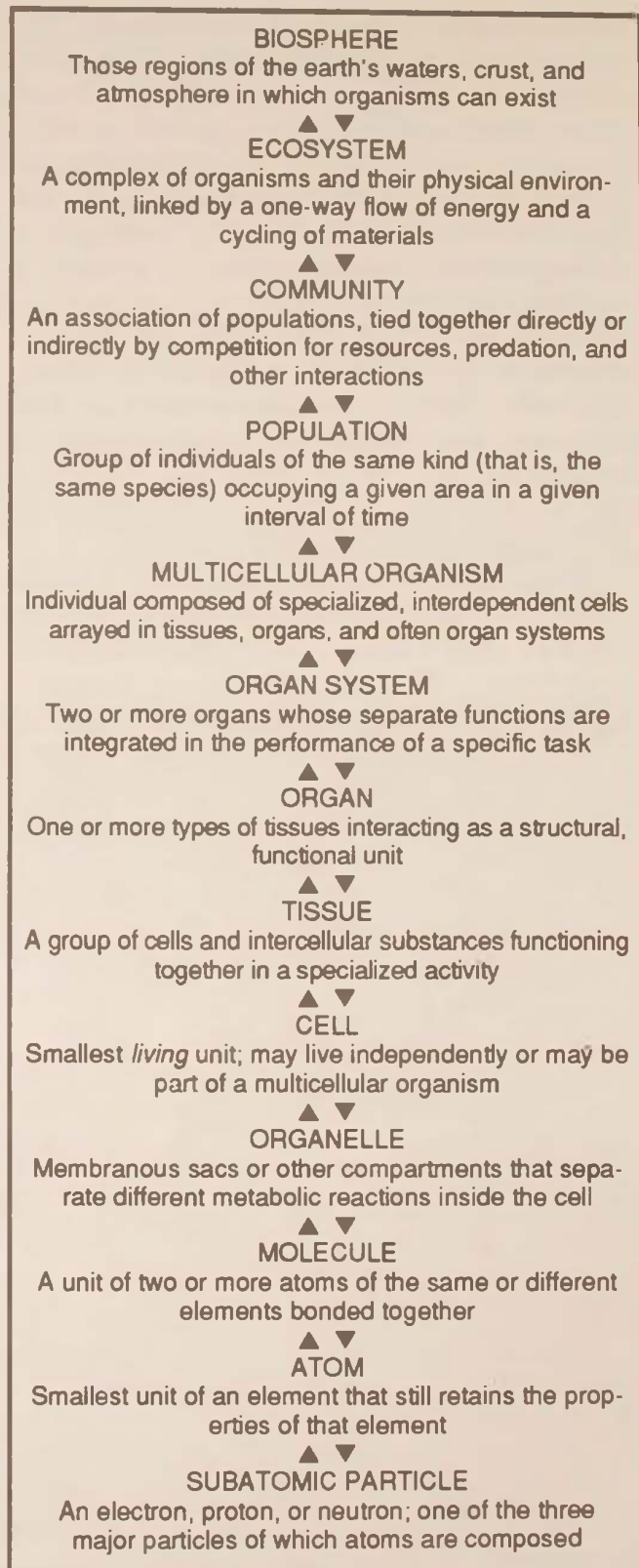
Using the guidelines and requirements as an outline, scientists have developed some unique and creative monitoring strategies. One in particular has captured the ecological linkages and necessities of accurate monitoring in a single biological indicator that we may be able to apply in a wide variety of negotiation scenarios.

In many respects, honeybees make ideal indicators of both environmental degradation and treaty violations. Because many plants require bees for pollination, these

insects exist almost everywhere—in either wild or managed hives. Their adaptability to human control makes them well suited to serve as a ubiquitous gauge of ecosystem health. Because they are active, they make excellent indicators of pollution and pesticide contamination. Even more useful, however, is the product they manufacture.

Bee honey embodies all the insects' activities: accumulating pollen from a variety of plants, drinking water from surface sources, and ranging over a wide area. Thus, the honey becomes a sensitive collecting medium from which we can measure the relative concentrations of a host of contaminants. The possibilities encompass chemical, biological, and nuclear pollutants. For example, enriched plutonium dust is distributed on flowers, and bees collect the dust in daily flights. Radioactive cesium and strontium are biologically active and will be incorporated into the honey from the pollen the bees collect. Tritium, mentioned earlier, is collected at both flowers and drinking sites. Because any chemical or biological warfare agent would be biologically active (a requisite for affecting humans), that activity would eventually be detected in the honey, the bees themselves, or the absence of bees (since chemical agents can easily destroy a hive). The Los Alamos Laboratories first used these insects in the mid-1970s for biomonitoring, and the program's success led to a continuing program of beehive culture at the national laboratory.

Consider how this indicator might be used to our advantage in treaty negotiations. A host nation contends that no weapons design or manufacture has occurred at a site where we suspect violation. Without demanding comprehensive onsite investigations, we need only visit farms in the area to take honey samples. Analysis of the honey would give us a clear measure of contamination. The presence of unique, man-made materials needed to make weapons is clear evidence



**Figure 3. Levels of Biological Organization in Nature (From Cecle Starr, *Biology Concepts and Applications* [Belmont, Calif.: Wadsworth Publishing Co., 1991], 4)**



of violation. The key is finding an elegant biological indicator that does the "data collection" for us.

## Biological Indicators

The indicators that we look for can be found anywhere in a hierarchy of biological existence (fig. 3). With the proper probes, we can identify a disturbance at any level.<sup>9</sup> We can measure rates of mutations in cells as an indicator of environmental insult. We can examine kidneys and milk from cattle for the presence of contaminants. We can look for pollutants anywhere in fish or garden vegetables. Human mortality data that identifies regions with an inordinately high incidence of cancer may indicate exposure to radioactivity. If insect populations are different around a factory, compared to similar environments, we should have serious questions about the factory's activities. The composition of a community will change because of perturbations. For example, different species of vegetation invade areas after major disturbances such as chemical spills. Entire ecosystems may be altered or even eliminated with large

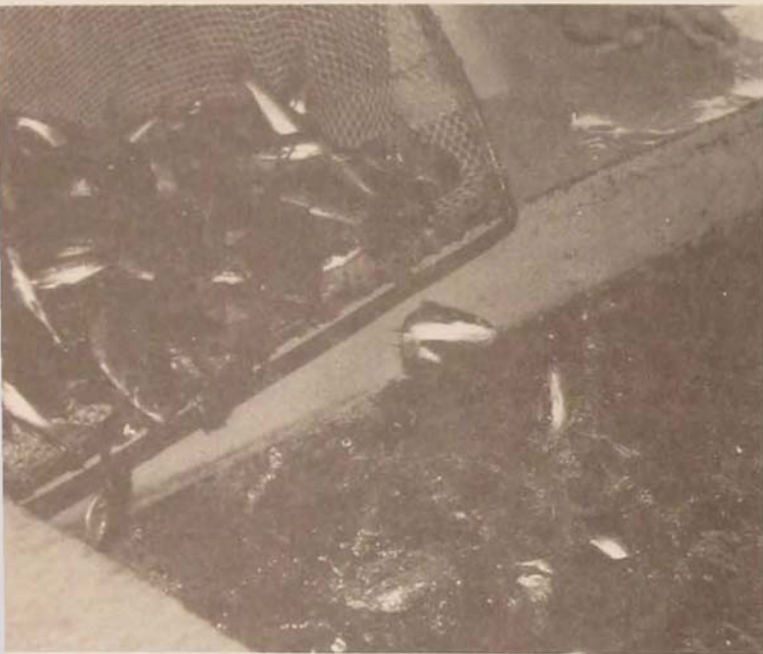
contaminations. Finally, the biosphere itself detects the effects of humans. Whether depleting ozone, increasing carbon dioxide, changing weather patterns, or spreading radioactive dust, we have left our mark on the world. The exciting opportunity for science is that we are rapidly finding the tools to identify and trace those marks. We can trace concentrations of heavy metal in Kansas rivers to the mines in western Colorado where they were released. The technology and our applications of that technology are growing at an incredible pace.

If we learn to use the whole spectrum of the biological hierarchy, we gain some advantages and face new problems. Biomagnification allows us to detect contamination that exists in minute quantities in the environment, but that process requires time and transformation. Recall that DDT had to be transformed from water to small invertebrates to fish to birds before we could see its effects (table 1). Both time and transformations make the pollutant

*Biomonitoring could be useful in verifying compliance with arms control agreements. For example, changes in the health of a herd of cattle might indicate that biological weapons are being stored or manufactured nearby.*



more difficult to detect. However, we can use these limitations to our advantage. If it takes a long time for pollutants such as plutonium to get into a biological system, it will take a long time for them to leave. Depending on the concentration and location in the environment, we can also infer that the source of those pollutants has been contributing contamination for some time. Long-lived pollutants such as plutonium or DDT give an accurate record of



*Scientists could determine whether nuclear weapons are being manufactured at a suspected site by testing fish samples both upstream and downstream for radioactivity.*

the history of a site because they allow us to discern the types of industries that have operated there.

A word of caution is in order here because, as the term implies, a biological indicator only *indicates* that something is amiss. A potential challenge in biomonitoring is assigning direct cause and effect. Although the whole process shows that something harmed the environment, inferring the identity of that something constitutes another challenge. A farmer's pesticide could kill a hive of bees as readily as a spill from a chemical weapons facility.

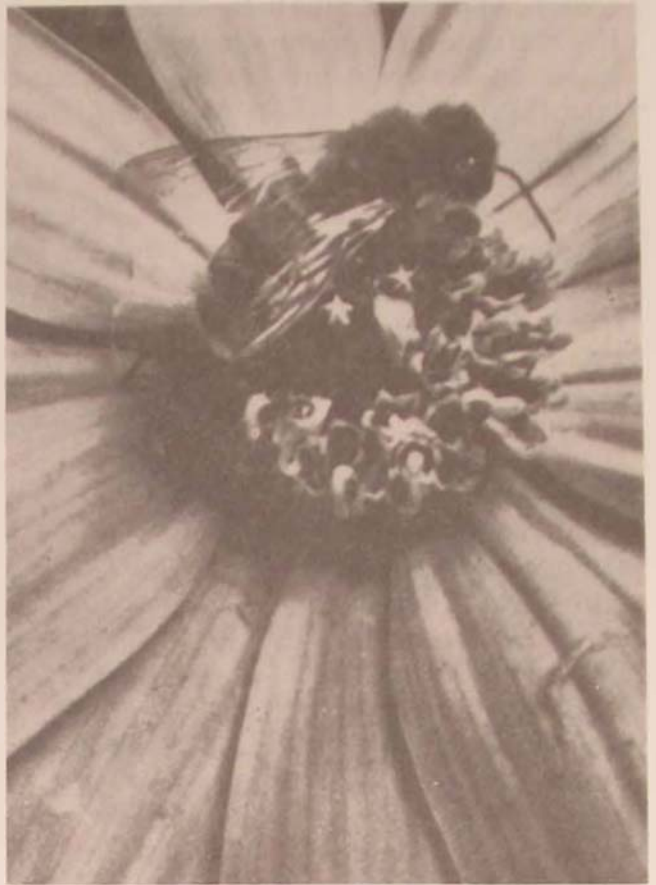
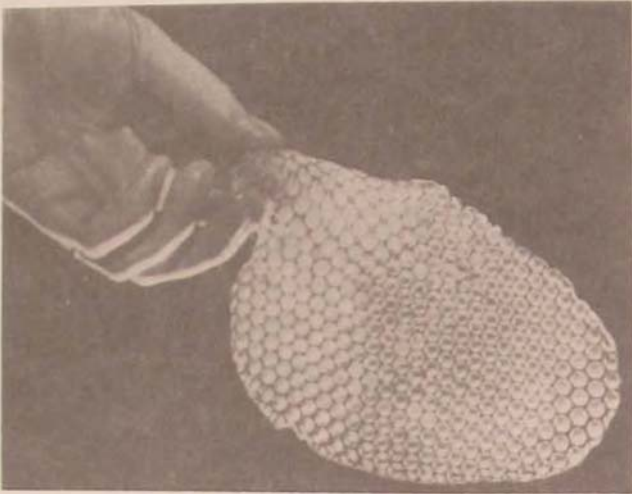
In order to prove cause and effect, biomonitoring requires a protocol—as is true of any good science. That protocol needs a control. It could be as simple as examining an extra beehive upwind from the site in question, or it could require collecting meat and milk samples from a neighboring farm.

Our primary accomplishment through biomonitoring stems from our increased confidence that we have detected a violation. An additional concern is our ability to recognize a well-concealed violation. One must remember that the entire purpose of environmental surveillance programs in our country is to demonstrate that industry is *not* severely affecting our environments. If a chemical/biological/nuclear weapon plant is functioning properly, there should be no leaks or discharges, and their effects would remain undetectable. The counter to this argument is that if these industries are secretly operating without leaks (either physical or verbal), no other means of detecting their presence or activities are available either.

## Summary and Conclusions

Our ability to negotiate arms control treaties in good faith demands that some avenue of verification be available as an additional means of insuring compliance and identifying violations. Policymakers turn to every discipline in science for technological solutions in a sensitive and complicated political arena. These verification needs are not trivial. We must have some assurance that our procedures give an accurate picture of the world we want to observe. The confidence we have in our own national security depends on this verification. Biomonitoring is only one of a powerful suite of sensing technologies we have at our disposal. With options ranging from human observers to satellite photography and image analysis, biological indicators offer an intermediate level of sensitivity—both politically and techni-

*Honeybees, which are easily controlled in managed hives (bottom), are ideal indicators of environmental degradation because their honey (below) is susceptible to contamination from the pollen they collect (right) and the water they drink during their wide-ranging flights.*



cally. These indicators are not as confrontational as an on-site inspection but offer an accurate picture of disturbances we typically see when handling, using, and storing hazardous materials.

Biomonitoring is not a panacea in all circumstances. In a badly disturbed, heavily contaminated environment such as Eastern Europe, the situation is so degraded that it would take a major leak or discharge before we would notice biological change. To be useful, biomonitoring depends on those sorts of mistakes. Each unique environment where we use biological indicators requires characterization of both the contaminant and of the ecosystem we are studying. Both must be fully understood in order to decide on the most appropriate verification tools. Only qualified professionals who understand ecosystem dynamics and linkages meet this requirement. Finally, because no two systems are identical, complicated environments may be very costly to assess, classify, and monitor.

Biomonitoring also brings some special advantages to arms negotiations. It is non-invasive. It is flexible. (Anywhere we find life, we have indicators of impact.) It is also situation-dependent. Because so many potential indicators are available, a deceitful party in negotiations cannot depend on hiding his actions. Further, we are good at biomonitoring. Federal requirements levied on our own weapons industry have allowed us to produce and maintain a large data base. We can use that wealth of knowledge to predict how pollutants will act in specific environments and then prescribe monitoring protocols that best meet verification needs.

Biomonitoring represents another tool that policymakers have available for building strong, dependable, verifiable relationships with enemies of the past, present, and future. The canaries whose songs worked for coal miners can work for us as well. We must first learn to listen to all of life's songs and then understand what they communicate. □

#### Notes

1. William Horning and Cornelius Weber, *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, EPA/600/4-85/014 (Washington, D.C.: US Environmental Protection Agency, 1985), 1-2.

2. Norman Myers, "The Question of Linkages in Environment and Development," *BioScience* 43, no. 5 (1993): 302-10.

3. Aldo Leopold, *A Sand County Almanac: With Essays on Conservation from Round River* (London: Oxford University Press, 1966), 188-202.

4. Richard Brewer, *The Science of Ecology* (Philadelphia: Saunders College Publishing Co., 1988), 1.

5. Myers, 302.

6. Brewer, 13.

7. Eugene Odum, *Basic Ecology* (Philadelphia: Saunders College Publishing Co., 1983), 143.

8. Information on the activities of the Los Alamos National Laboratory was gleaned from several years of annual reports on environmental surveillance from the Health, Safety, and Environment Division. The author also worked at Los Alamos from 1985 through 1987, observing surveillance technologies.

9. Cecie Starr, *Biology Concepts and Applications* (Belmont, Calif.: Wadsworth Publishing Co., 1991), 4.

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# BALLISTIC MISSILE DEFENSE FOR THE TWENTY-FIRST CENTURY

AT THE CROSSROADS OF GLOBAL SECURITY

LT COL CHARLES SHOTWELL, USAF  
MAJ JOGINDER DHILLON, USAF  
CAPT DEBORAH C. POLLARD, USAF

THESE HAVE been many incarnations of ballistic missile defense over the years: the Johnson administration's Sentinel program, the Nixon administration's Safeguard program, the Reagan administration's Strategic Defense Initiative (SDI), the Bush administration's Global Protection against Limited Strikes (GPALS), and the current Ballistic Missile Defense (BMD) program. Every one of these programs has involved significant controversy, not just between international players but between the executive and the legislative branches of the US government. They all have had a major impact on wide-ranging areas of technology, arms competition, military strategy, and arms control.<sup>1</sup> Furthermore, in the intra- and intergovernmental deliberations on ballistic missile defense policy, political imperatives have mattered as much as (if not more than) security imperatives.

With the end of the cold war, we face a dramatically changed security environment. Proliferation of missiles and related technology poses threats to the continental US in the not-so-distant future. There is considerable lead time required to develop appropriate defensive systems. The window of opportunity with a cooperative Russian regime may not last forever. Thus, it appears that we are at a crossroads in terms of the security imperative where decisions must be made soon, where today's policy choices are critical, and where today's commitment of resources will have lasting consequences.

A successful post-cold-war "grand strategy" requires the unification of efforts under a common objective: coordinating the political, military, diplomatic, and technological instruments of national influence to meet the growing threat of weapons proliferation. This will necessitate a reconciliation of the national secu-

rity imperative with the political imperative.

## The Domestic Political Imperative

The domestic political imperative to preserve the Antiballistic Missile (ABM) Treaty regime was visibly evident in the early 1980s when the Reagan administration started research and development for the SDI program. A governmental debate ensued over the meaning of two provisions in the ABM Treaty. The first provision in question was Article V, which states:

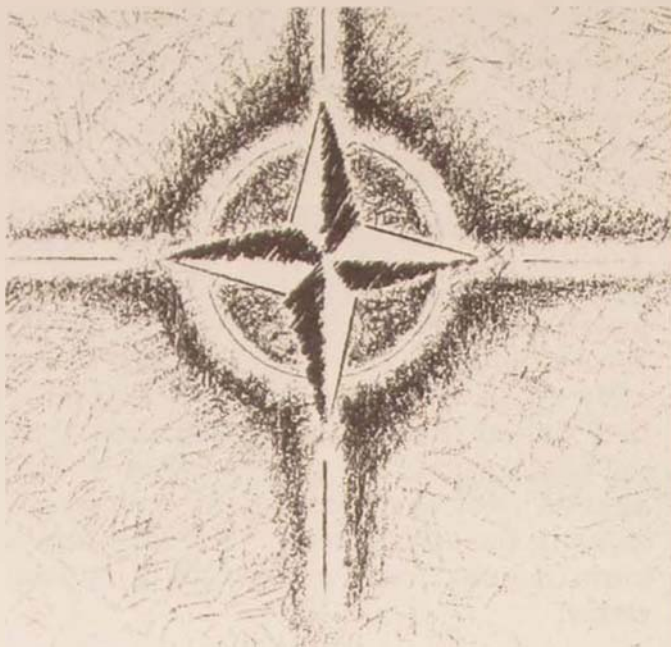
Each Party undertakes not to develop, test, or deploy ABM systems or components which are sea-based, air-based, space-based, or mobile land-based.

Article VI was the other provision:

[E]ach party undertakes not to give missiles, launchers or radars other than ABM interceptor missiles, ABM launchers, or ABM radars, capabilities to counter strategic ballistic missiles or their elements in flight trajectory, and *not to test them in an ABM mode.* (Emphasis added)

At no place does the treaty or its agreed statements define what constitutes "test them in an ABM mode."<sup>2</sup> In a unilateral interpretation, the US Compliance Review Group (CRG) directed that any systems tested must not exhibit deployment patterns that resemble an ABM role.

As former arms control negotiator Paul Nitze has pointed out, the US attempted, unsuccessfully, during a critical six-month negotiating period in 1971-72 to get the Soviets to agree to a more precise prohibition of future ABM system development.<sup>3</sup> After treaty ratification, the joint ABM Standing Consultative Commission (SCC)



negotiated for two years to clarify the term *tested in an ABM mode*.<sup>4</sup> The result was the agreed Statement D of 1978. It refers to target missiles that “have the characteristics of the flight trajectory of a strategic ballistic missile or its elements.” “Statement D” goes on to say:

In order to insure fulfillment of the obligation not to deploy ABM systems and their components except as provided in Article III of the Treaty, the Parties agree that in the event ABM systems based *on other physical principles* [emphasis added] and including components capable of substituting for ABM interceptor missiles, ABM launchers, or ABM radars are created in the future, specific limitations on such systems and their components would be subject to discussion in accordance with Article XIII and agreement in accordance with Article XIV of the Treaty.<sup>5</sup>

This left some room for unilateral interpretation of those characteristics.<sup>6</sup> By implication (according to one interpretation), the treaty allowed the *testing and development* but not deployment (prior to consultations) of systems and their components based on “other physical principles.”<sup>7</sup> According to this broad interpretation, systems based on other physical principles are those systems other than

those discussed in Article II (which defined the ABM system as consisting of ABM interceptor missiles, ABM launchers, and ABM radars).

Senators argued that this interpretation was inconsistent with interpretations offered by executive branch officials during the treaty ratification process.<sup>8</sup> Many maintained that the president should be bound by the earlier “narrow interpretation” of the treaty, which would ban testing of any ABM components regardless of physical properties. Ultimately, Congress applied its budgetary authority to force the Reagan and Bush administrations to limit tests to those consistent with the narrow interpretation.<sup>9</sup>

On 13 May 1993, Secretary of Defense Les Aspin announced the “end of the Star Wars era.”<sup>10</sup> He changed the name of the Strategic Defense Initiative Office (SDIO) to the Ballistic Missile Defense Office (BMDO).<sup>11</sup> The administration went on record supporting the narrow interpretation to the ABM Treaty.<sup>12</sup>

Yet there are signs from both Congress and the current administration that research on space-based systems is far from ruled out altogether. While directing compliance with the treaty, the 1991 Missile Defense Act (MDA) also directed the SDI program to defeat limited, unauthorized, or accidental attacks on the US and to defend US troops, friends, and allies.

The MDA included other language that allowed, if not encouraged, research in specific areas:

The system components to be developed shall include . . . optimum utilization of space-based sensors, including sensors capable [emphasis added] of cueing ground based anti-ballistic missile interceptors and providing targeting vectors, and other sensor systems that are not prohibited by the ABM Treaty, including specifically the Ground Surveillance and Tracking System.

This implied a far-reaching congressional interpretation that a mere ABM-capable system does not actually violate the ABM Treaty, so long as it is not deployed. Fur-



ther, DOD guidance would recommend that the sensors be incapable themselves of providing targeting information without additional processing on the ground. Theoretically, this would make these units something other than ABM components. Is this a legitimate construction, or are labels being used to work around Article V of the treaty?

In 1992, a divided House Armed Services Committee voted to amend the 1991 Missile Defense Act to say:

To maintain compliance with the Anti-Ballistic Missile Treaty, including protocols or amendments thereto, and not to develop, test, or deploy any ballistic missile defense system, or component thereof, that is in violation of the treaty as modified by any protocol or amendment thereto.

But the amendment permitted the deployment of

an anti-ballistic missile system that is capable of providing a highly effective defense of the United States against limited attack of ballistic missiles, which may include space-based sensors and additional deployment of sites if authorized by Congress and permitted by the ABM Treaty.<sup>13</sup>

Thus, Congress acknowledged the possible necessity of space-based systems. Yet, implicit in this brilliant piece of "double-speak" is an assumption that space-based sensors and additional "sites" may be deployed without violating the treaty.

Overall, congressional opposition to spending for ballistic missile defense is still strong, as evidenced by fiscal year (FY) 1994 budget cuts by the Senate and the House. Congress cut the president's budget request for ballistic missile defense from \$3.8 billion to \$2.6 billion.<sup>14</sup> The president's program had already scaled down the requests of former president Bush from a total of \$39 billion over five years to \$18 billion over five years.

The Clinton administration has made clear its shift of priorities to theater defense in the form of land-based ABM systems and in its intent to adhere to the ABM Treaty. The Clinton administration has made drastic cuts for research for the space-based Brilliant Pebbles interceptor system. Nevertheless, the administration has expressed interest in continuing research for other space-based systems. In particular, "enhanced" launch detection is viewed as crucial to effective land-based interceptors. The Clinton administration requested \$250 million for Brilliant Eyes in the FY 1994 budget, \$10 million more than budgeted in 1993.<sup>15</sup>

## The International Political Imperative

The use of space-based sensors, as previously mentioned, substantially enhances the capability of ground-based interceptors. Yet, Congress does not appear to share these priorities, as they made significant cuts in these programs. Nevertheless, the political imperative is driven by not only domestic factors, but by international factors as well.







would involve them in an important undertaking with other nations of the world community.<sup>23</sup>

In the context of the global ballistic missile defense regime proposed by President Yeltsin, opportunities for cooperation with our allies will increase. The US again made it clear that it considers its allies as one of the cornerstones of any cooperative effort on global missile defenses, and it has underscored the central role of its allies in this concept to Russia.

In 1992, the belief was that the US would pursue attempts to coordinate with the Russians on an agreement to modify the ABM regime as set forth in the ABM Treaty. The specific issues to be addressed and hopefully relaxed included the restriction on the location and number of ABM sites, the number of interceptors, and the prohibition on the deployment of space-based ABM sensors and interceptors. Official US statements referred to Yeltsin's purported acknowledgment of mutual interests in protection against ballistic missile attack as a significant break from past Soviet policy on ballistic missile defenses. This was seen as a historic opportunity for cooperation in this area. Not surprisingly, the US equated this to a Russian willingness to ease requirements under the ABM Treaty. However, the Russians have been very adamant about both sides adhering to the treaty even while pursuing cooperation in the area of global protection.

Currently, GPS is still in its conceptual stages with respect to membership, technology, command and control, and many other issues that are yet to be addressed. The concept overview appears to be an attempt by the US to make such a system more palatable to its international partners by emphasizing the truly equal stature of all participants and the collective aspect of such a system. The concept of operations for a global protection system underscores the importance of establishing a "voluntary association of sovereign states

committed to assisting one another in meeting the challenge to their national security and international stability that is posed by the proliferation of ballistic missiles and weapons of mass destruction."<sup>24</sup> By refocusing the SDI program toward the contributions of GPALS to GPS, the US has significantly increased the priority assigned to theater missile defenses. In fact, improved theater missile defenses would be the first elements of GPALS to be deployed. Moreover, it is interesting to note that even in these times of tight budgets, the US Congress has appropriated funds to accelerate theater missile defense (TMD) development.

Theoretically, participation in this system would be open to all interested countries that are members in good standing of the community of nations and that have embraced the objectives embodied in international agreements aimed at stemming the proliferation of advanced technology. As a tangible expression of their commitment, the participants would establish and operate a global protection center. Within this center, the participants would be involved in a number of ventures, including sharing information on the sources of proliferation, registering prelaunch notifications for upcoming test launches, providing information on any launch of ballistic missiles or space launch vehicles, and assisting one another to develop the technical means of warning and defense against ballistic missile attack.<sup>25</sup>

#### *Response of the International Community to the GPS Initiative*

The response of the international community to the GPS concept has been guarded. The North Atlantic Treaty Organization (NATO) has expressed concern about the speed with which the US was seen to be pursuing its new relationship with Russia. Most European nations are advocating caution in our dealings with the former Soviet Union, especially when it comes to

institutionalizing new security arrangements with them—as would be called for under GPS. The international perception is that much effort in America has been dedicated to nurturing the relationship with Russia, sometimes at the expense of our established relationship with NATO. Representatives in NATO express dismay that they are being left out of the notification and coordination process. This perception exists even though US officials have publicly stated that allies are a critical part of the coordination process.

America's European allies want to, and will, use NATO as a decision-making forum for issues of national security and foreign policy. These allies are particularly concerned about being left behind as the US pursues its relationship with Russia, and they want to become more involved and more influential in the policy-making process. The general European view supports continued adherence to the ABM Treaty, although most NATO nations would probably support an amendment process if they were consulted on the specific provisions prior to implementation.<sup>26</sup>

These allied concerns about the speed with which the US was seen to be pursuing its relationship with Russia manifested themselves in NATO's effort to establish an ad hoc group on GPS. This group was supposed to provide a forum for consultation on the organizational aspects of such a system. The stated goal of member nations was to establish NATO as a crucial part of the policy process in determining the risks posed by ballistic missiles, defining the requirements for the system architecture, and determining the impact on international arms control efforts. In addition, NATO sought to influence and directly participate in discussions about strategic and political implications of GPS, economic and technological considerations, and potential areas of allied cooperation and oversight.

However, this particular effort was stonewalled by the French because they

were adamantly opposed to the US chairing the group and controlling the agenda. France made its support conditional upon having an international chair, but US opposition meant the issue became a point of contention with no apparent middle ground. Before the matter could be further debated and discussed, the US election put President Bill Clinton in office and the issue became moot until the new administration's position on ballistic missile defense was formulated and policy objectives were set. So far, the issue of establishing an ad hoc group has yet to be revisited in NATO.

Since the US has already made it clear that it wants its "friends and allies" on board for GPS, it must now decide how to approach these nations. An obvious option would be to deal with NATO as a single entity, seeking alliance cooperation and support for initiatives under the GPS umbrella. This option may appear to be the most expedient since it provides the opportunity to address these issues in a single forum and to build consensus by making strategic defense an alliance goal. However, the cohesiveness of NATO's response to GPS will center around the answers to some key questions: (1) What is the threat? (2) What is the alliance responding to? (3) How is it to respond? and (4) Why should it respond? Presently, NATO is unwilling to agree to the assumptions underlying GPS before reaching an agreement on the basic principles defining the problem. In dealing with nations on an individual basis, it will be important for the US to take each country's specific concerns into account. These concerns can be consolidated into broad areas of general concern:

1. GPS must be ABM-compliant, but there is a willingness to accept amendments, modifications, or clarifications if agreement amongst the international community can be reached.

2. The viability of British and French independent nuclear deterrence must be

maintained or an acceptable security substitute must be established.

3. Militarization of space must be avoided at all costs.

4. The first step towards a global protection system should be an emphasis on theater missile defense.

5. Ballistic missile defense will only be supported by individual nations if it can be defined to be in that country's national interest or viewed as contributing to the stability and security of the region.

6. Plans for development and deployment of GPS must be accompanied by assurances that West European and other security arrangements are not decoupled from US security interests.

7. The issue of cost must be addressed early on in the policy process. America's allies will neither support nor fund a program that cannot stand up to a cost-benefit analysis.

8. It is imperative that friends and allies are kept informed of ongoing discussions with Russia, as well as being included in the consultations and negotiations. They have made it explicitly clear that they will not support a program that they are not involved in developing.

9. There are pressing political and technical questions such as command and control and releasability of information to third parties that must be addressed and answered. Allies are concerned that the US is pursuing this global panacea without any forethought to the political, technical, and strategic ramifications.

America's friends and allies are looking for US leadership. They need and seek strong language and initiatives. Presently, GPS is only an idea with a very vague concept of operations that presents more questions than answers about the program. In fact, in a 29 September 1993 interview, Henry Cooper, former director of the Pentagon's Strategic Defense Initiative Organization (now Ballistic Missile Defense Organization), said:

There's a lot of gobbledegook coming [from Clinton's policy officials] that is hobbling and constraining the entire missile defense program. Theater missile defense is supposed to be one of our highest priorities, but

development of these systems is impeded by a real lack of leadership. . . . Our allies are looking with great confusion to what we're doing . . . and yes, it does appear that the current leadership is speaking from both sides of its mouth on this vitally important issue.<sup>27</sup>

Many nations have refrained from passing judgment or asking questions until the issue of GPS is formally addressed on the alliance's agenda. The recommended approach to dealing with friends and allies is to ensure that the US is not moving faster than consensus can be achieved, and is approaching this in a manner that integrates the bilateral discussions under an alliance umbrella, to the extent possible, once some of the basic decisions on how to proceed have been made. This would allow the US to consider the specific threats to each nation and their perspectives on the GPS framework that would hopefully minimize any political alienation that could occur.

The US needs to respond quickly and decisively to the international community's expectation of US leadership on this issue. The approach to GPS should encompass long-term perspectives and consultations with allies and friends to further develop the concept. The US must be cognizant of the views of friends and allies as well as other countries we have treaty obligations with, such as China as a cosignatory of the Outer Space Treaty of 1967. There exist many possible repercussions whereby use of overseas facilities or ports is threatened or other actions are taken that would affect our ongoing relationship with a particular nation. The interdependency of the global community makes this issue one requiring collaboration and cooperation.

#### ***The Antiballistic Missile Treaty: Is the Debate Over?***

The changed international security environment and the responses by all recent administrations raises the question of

whether the "broad-narrow" treaty interpretation debate is really over. The security imperative has been driving creativity in treaty interpretation in order to accommodate the political imperative. The security implications are quite significant when it comes to possible future conflicts. There is a growing realization that the use of space will figure prominently in future conflicts, despite the existence of the Outer Space Treaty of 1967 and the so-called "Sanctuary Doctrine."<sup>28</sup> As Gen Thomas A. White observed:

Whoever has the capacity to control the air is in a position to exert control over the land and seas beneath. I feel . . . whoever has the capacity to control space will likewise possess the capacity to exert control over the surface of the earth.<sup>29</sup>

Emerging world ballistic missile threats continue to prompt us to do exactly what the treaty is designed to prevent us from doing—develop a ballistic missile defense system.

Although it is possible to amend existing provisions to allow for expanded national coverage as part of a global system—for instance, amending the limit of one site in Article III to allow for five or six sites—it is our view that making such piecemeal changes would lead to many significant problems in the long run. These problems would arise from a lack of internal consistency. Given the difficulty we have had in interpreting the treaty as it currently exists, it is extremely disconcerting to imagine the kinds of problems that could arise in the future when half of the treaty reflects one premise and the other half reflects a completely opposite premise.

Any amendment contemplated must recognize the vast differences between the strategic situation that currently exists and that which existed in 1972. Specifically, these changes relate to the changed nature of the threat and would acknowledge that one of the motivating factors behind the ABM Treaty (securing limits on offensive weapons) has been achieved. This proto-

col would authorize the development, testing, and deployment of ballistic missile defenses that the parties now view to be in their mutual interest. The current provisions of the ABM Treaty could remain in place as a sort of backstop. This scheme would make mutual cooperation a prerequisite to the development or deployment of any defensive systems not permitted under the current ABM provisions. In any event, the long-term utility of bilateral amendments to the treaty must be compared to the utility of unilateral approaches.

### *Unilateral Approaches*

First of all, it is not an option to ignore or violate the treaty. Not only is this action not advisable because of the long-term damage it would have on our relations with friends and allies, but more importantly it violates the most fundamental law of our land, the Constitution. Article VI of the Constitution makes treaties, along with the Constitution and federal laws, "the supreme Law of the Land." Furthermore, the Supreme Court has declared that "international law is part of our law."<sup>30</sup> In any event, it cannot and will not be the policy of the government to breach treaty commitments. We are bound by the treaty unless and until we (or the other party) take affirmative action to terminate it.

The most dangerous course of action is to publicly proclaim adherence to the treaty while applying creative interpretations that do violence to its meaning. Reasonable, good faith interpretations that do not violate the plain meaning of the text or otherwise do violence to the spirit of the treaty do not pose a problem. On the other hand, if we can't live with the treaty in its current form, there are two policy options that allow us to legitimately move beyond treaty limitations. One option is to unilaterally terminate the treaty. Article XV permits each party to the treaty to withdraw after six months of notification

if the party decides that "extraordinary events related to the subject matter of the treaty have jeopardized its supreme interests." This does not mean that a change of circumstances automatically terminates the treaty. It requires the affirmative action of a party to the agreement to exercise this provision.

As mentioned previously, international reaction to termination of the treaty is expected to be nearly universal in opposition. Many observers argue that a unilateral termination of the treaty would have "grave consequences" for the political cohesion of NATO.<sup>31</sup> Even if we could withstand the political ostracism, there could be immediate, substantial consequences for many of our defensive systems that depend to a large extent upon the goodwill and cooperation of foreign states where components are based. A retreat to a strictly CONUS ground-based system leaves open the question of the trade-off in effectiveness.

### ***Bilateral Approaches***

The US and Russia, as a principle signatory and "successor state" to a signatory of the ABM Treaty, are necessary players in any option. The obvious bilateral option is to amend (or rewrite) the ABM Treaty in accordance with Article XIV of the treaty. One avenue would be to negotiate a carefully crafted exception to the ABM Treaty to allow for the limited deployment of a cooperative defense system. Article XIV specifies that

each Party may propose *amendments* to this Treaty. Agreed amendments shall enter into force in accordance with the procedures governing the entry into force of this Treaty. (Emphasis added)

The Russians have already indicated no desire to formally amend the ABM Treaty, but they are flexible regarding the establishment of a bilateral (or global) defense system.<sup>32</sup> In order to satisfy the Russian political imperative against a "formal"

amendment to the treaty, the parties to the treaty may use other instruments, such as a statement of clarification, an "exchange of letters," agreed statements, or other devices. Such instruments must clearly indicate the intent of the parties to be bound by the proffered interpretation of the treaty.<sup>33</sup> In such a case, both parties would be bound to the agreement, regardless of the "label" attached thereto.

Multilateral implications complicate bilateral negotiations. Although the ex-Soviet states are not considered parties to the ABM Treaty, their cooperation may be essential, as indicated by the negotiation of the Bishkek and Minsk agreements. There are also key players on the US side—the United Kingdom, Denmark, Australia, and others—that must be dealt with. Similarly, these states are not parties to the treaty. Nevertheless, on both the Russian and American sides, prior consultations with our respective "defense partners" is a political necessity in the course of amending the treaty. These unique circumstances provide for bilateral negotiations with a multilateral (or multi-bilateral) flavor. Such circumstances provide for a complex mixture of power relationships. For example, the US and Russia hold the key cards in bargaining with their "partners" because only parties can formally amend the treaty. On the other hand, these partners may be key to gaining or keeping access to foreign operating locations which may be crucial to future defensive systems.

The key advantage that the bilateral approach offers over the unilateral approach is that it strengthens US-Russian cooperation and stabilizes the new, post-cold war relationship. It would be a vehicle for more transparency in military operations. Over time, such confidence and security-building measures may build mutual trust between the US and Russia. In terms of disadvantages, the bilateral approach may alienate some NATO allies, even with consultations. The defensive systems posed would likely be able to



defeat, and thereby trivialize, the medium-sized nuclear forces of Britain and France.

### *Multilateral Approaches*

Once the bilateral hurdle has been met, multilateral options range from a "minimalist approach" at one end of the spectrum to a "maximalist approach" at the other, but there are also alternative options.

#### *Minimalist Multilateral Approach.*

This approach contemplates minimal cooperation with foreign states. This would likely include a cooperative early warning program that provides for exchange of information and possibly limited coordinated response to threats, but little cooperation beyond that.

There are two variations of a minimalist approach. One option would be a "global" system that provides for a sharing of early warning data through a jointly manned center (or series of centers). An advantage offered by this approach is that the exchange of early warning information adds transparency to the actions of other nations and is conceivably stabilizing. Furthermore, states would have to agree on basic conditions in order to participate in this global warning system. These conditions should include accession and compliance with specific nonproliferation rules. The disadvantage is that this scheme may not go far enough in terms of addressing the causes of the threats: unrestrained sales of arms and related technologies.

Another option would be a decentralized, regional approach. This would involve negotiating a series of regional arrangements for regionally oriented early warning centers. This approach offers the advantage of flexibility in arrangements to address regional concerns. A disadvantage of this approach is that it could serve as a force for divisiveness and fragmentation of the world into regions rather than

foster global integration. This is particularly true where threats to one region may come from another region.

#### *Maximalist Multilateral Approach.*

This approach contemplates maximum cooperation with foreign states through a central organization with global responsibility. It is the ultimate application of interdependence to the security sphere. This not only includes exchange of early warning information but a fully integrated data base. This would include multinationally manned early warning centers at locations around the world. It could include integrated multinational workforces similar in design to NATO, but with a global charter.

A maximalist multilateral plan may also contemplate the possible integration of global nonproliferation (political) efforts.<sup>34</sup> Previous antiproliferation efforts have suffered because of the lack of coordination of effort between disparate arms control regimes and lack of enforcement capacity. The Missile Technology Control Regime, the Coordinating Committee on Multilateral Export Controls, the Nuclear Nonproliferation Treaty, and other groups could be integrated under one umbrella organization with enhanced enforcement authority. This political body could have oversight responsibilities for defensive measures.

Membership could be made conditional upon accession to and compliance with key nonproliferation regimes. Participation in the global regime will be reciprocated through protection offered via a collective security regime. This entails more than just the provision of early warning information, but assistance in active-defense measures. Only significant security guarantees could induce states possessing or developing weapons of mass destruction to join the nonproliferation club.

Although few states want to see the end of the ABM Treaty, this multilateral arrangement would likely be a more favor-

able option in the eyes of the international community than a purely unilateral or bilateral option, although it will take much discussion with friends and allies to convince them of the benefits of such an arrangement.

**Alternative Options.** There are options available other than the maximalist or minimalist approaches. The alternative presented here represents a recognition that something more than minimal cooperation is needed between states to combat the dangers of weapon proliferation, but that full integration of global defense systems may be undesirable or unworkable. It is a recognition that national sovereignty and independence of action need not be sacrificed in order to bring about some level of global cooperation for purposes of ensuring international peace and security.

The reality is a complex network of bilateral, multilateral, and multi-bilateral relationships. The treaty must be amended by bilateral US-Russian effort, but with bilateral consultations with each signatory's defense partners. The amendment could provide the basic structure for a follow-on multilateral arrangement. Structuring the discussions this way provides for maximum US and Russian leverage over defense partners, while still including them sufficiently for meaningful cooperation in the later multilateral forum.

The basic objectives of the regimes would be to provide defense against ballistic missiles and to address the causes of proliferation. A viable variation would be a combination of regional and global arrangements for the exchange of early warning information. This parallels the early debates prior to the end of World War II about whether power should be given to a global body, such as the United Nations, or to regional organizations. The answer was a compromise, as now appears in the UN Charter. Although the Security Council has the preponderance of authority,

regional organizations are given considerable power in the settlement of regional disputes.

Under this scheme, arrangements would be negotiated for regional early warning and defense centers and would be adapted to regional needs and conditions. These arrangements would allow for flexibility in local arrangements and make the job for negotiators easier by reducing the number of nations required to agree to the arrangement. NATO's structure is well suited for integration into such a framework.

## Conclusion

We are at a crossroads, where decisions must be made for the future course of policy. Policymakers must recognize the dramatic changes in the security environment undermining the validity of previous planning assumptions and the extraordinary challenges that lie ahead.<sup>35</sup> New threats and new technologies require adjustments of strategy and policy.<sup>36</sup> The failure to adapt to changed conditions is a key peril for decision makers.<sup>37</sup> The costs in doing so are quite substantial.

It is clear that many states are preparing to use space to gain military advantage. The facade of compliance with the sanctuary doctrine has fostered a growing cynicism among several states. The changes in the reality of the use of space dictate that the diplomatic reality catch up with the security reality. Even the Senate Armed Services Committee noticed a "gap" between defense planning and the diplomatic reality:

The committee is concerned by the apparent gap between SDIO planning assumptions with regard to programs that raise ABM Treaty compliance problems and the progress to date in US and Russian efforts to negotiate amendments of the ABM Treaty. The committee urges the President to pursue vigorous changes to and clarifications of the ABM Treaty.<sup>38</sup>

The treaty will not go away of its own accord. It requires affirmative bilateral action to amend it to meet our new security needs. This provides some unique opportunities, particularly while we enjoy unprecedented favorable relations with Russia. It is an opportunity to mold the future and, perhaps, counter the emerging threat of proliferation. Such opportunities usually do not last for long and the opportunity costs for failing to act could be significant.

Placing the issue of the use of space for defensive purposes on the world agenda in the context of the global protection system could serve to force all players to "lay their cards on the table." The issue recognizes the reality of state actions in the use of space but channels these activities into an open, constructive, and cooperative mode. Rather than allowing space to be subverted to aggressive purposes, we may bring the militarization of space under control by addressing the issue publicly.

It is clear that some actions must be taken unilaterally by the US for defense. There is no global system that can be solely relied upon for our security. It is also true that the causes of the major threats to national security (i.e., the proliferation of weapons of mass destruction and their delivery means) can be dealt with most effectively in a regime of greatly increased global cooperation.

Once again, states around the world are looking to the US for leadership. Therefore, a primary concern should be that of developing all aspects of US security policy in a coordinated effort. The technology involves long lead times and is dependent upon political direction. The threat posed by ballistic missiles requires a methodical, long-term strategy. The prerequisite for a coherent strategy is reconciliation of the national security imperative with the political imperative. □

#### Notes

1. See Robert E. Osgood's introduction in Robert W. Tucker et al., *SDI and U.S. Foreign Policy* (Boulder, Colo.: Westview Press, 1987), xii.

2. Sidney Graybeal and Patricia McFate, "More Light on the ABM Treaty: Newly Declassified Key Documents," *Arms Control Today*, March 1983, 16.

3. Paul Nitze, *From Hiroshima to Glastnost: At the Center of Decision—a Memoir* (New York: Grove Weidenfeld, 1989), 414.

4. Graybeal and McFate, 16.

5. Carl Q. Christol, *Space Law: Past, Present, and Future* (Boston: Kluwer Law and Taxation Publishers, 1991), 7. For a further discussion of "Statement D," see Nitze, 468.

6. Nitze, 415. There were indications that the Soviets wanted the treaty left vague on the subject of future technologies. In 1972, Soviet defense minister Andrei Grechko stated to the Soviet Presidium that the ABM Treaty "places no limitations on the performance of research and experimental work aimed at resolving the problem of defending the country from nuclear missile strike."

7. *Ibid.*, 414.

8. See Joseph R. Biden et al., "The Treaty Power: Upholding a Constitutional Partnership," *University of Pennsylvania Law Review* 1529 (1989).

9. See the Missile Defense Act of 1991.

10. Robert Burns, "Pentagon Embraces Laser Weapons While Kissing SDI Goodbye," *Colorado Springs Gazette Telegraph*, 23 June 1993, A4.

11. "SDIO Changes Its Letterhead to BMDO," *Arms Control Today*, June 1993: "The fate of Star Wars was sealed by the collapse of the Soviet Union . . . we find that we have a different need for a ballistic missile defense, not the massive program of space-based weapons that Ronald Reagan envisioned," 31.

12. Thomas Graham, Jr., acting director of the Arms Control and Disarmament Agency, to Sen Claiborne Pell (D-R.I.), letter, 13 July 1993.

13. "HASC Rewrites Missile Defense Act," *Defense Daily*, 14 May 1992, 249. The amendment was offered by Rep Charles Bennett (D-Fla.) and Rep John Spratt (D-S. C.).

14. "Congress Approves Defense Bill, Cuts Back BMD Spending," *Arms Control Today*, December 1993, 24; also see Vago Muradian, "The Japanese May Deploy a Version of THAAD," *Defense News*, 20–26 September 1993, 1.

15. Vincent Kiernan, "Clinton to Lower Pebble's Profile," *Space News*, 5–11 April 1993.

16. Louis Henkin, *International Law: Cases and Materials* (St. Paul, Minn.: West Publishing, 1987), 507–8. See also Article 7 of the Vienna Convention on the Law of Treaties. In addition, Section 210 of the Restatement (Revised) of the Law on Human Relations states, "When part of another state becomes a state, the new state does not succeed to the international agreements to which the predecessor state was party unless, expressly or by implication, it accepts such agreements and the other party or parties thereto agree or acquiesce."

17. The Russians continue efforts to secure Latvia and Azerbaijan, as both of these states have facilities that could be used to support ABM systems.

18. Joint (US-Russian) Statement on Global Protection System Consultations, issued 22 September 1992.

19. Matthew Bunn, "The ABM Talks: The More Things Change . . ." *Arms Control Today*, September 1992, 15-20. Boris Yeltsin on 31 January 1992 made known his desire to adhere to the ABM Treaty.

20. *Ibid.*, 21.

21. "Clinton Continues Quest for Joint Defense Effort," *Space News*, 17-23 May 1993, 2.

22. Strategic Defense Initiative Organization, *1991 Report to the Congress on the Strategic Defense Initiative* (Washington, D.C.: Department of Defense, 1991), 1-1.

23. *Ibid.*, 1-11.

24. *Ibid.*

25. *Ibid.*, 1-11, 1-12.

26. Pat Moon, interview with author, US Mission to NATO Political Section, July 1993.

27. Barbara Opall, "ABM Policy Shifts Imperil Clinton's Military Strategy," *Defense News*, 4-10 October 1993, 14.

28. The ability of the US to use any of its four force packages depends heavily on its ability to operate in the high ground of space. See Joint Chiefs of Staff, *National Military Strategy of the United States* (Washington, D.C.: Government Printing Office, January 1992), 24.

29. David E. Lupton, *On Space Warfare: A Space Power Doctrine* (Maxwell AFB, Ala.: Air University Press, 1988), 37.

30. This was US Supreme Court justice Harold Gray's statement in the famous case of *The Paquete Habana* (175 U.S. 677[1900]). Compliance with international law is referred to in Article I, Section 8 of the Constitution, which specifically directs Congress to define and punish "offenses against the Law of Nations."

31. See Sanford Lakoff and Randy Willoughby, eds., *Strategic Defense and the Western Alliance* (Lexington, Mass.: Lexington Books, 1987), 32.

32. Bunn, 15-20.

33. Article 11 of the Vienna Convention on the Law of Treaties states that "the consent of a state to be bound by a treaty may be expressed by signature, exchange of instruments constituting a treaty ratification, acceptance, approval or accession, or by any other means if so agreed." Although the US and the former USSR were not signatories, much of the Vienna Convention is still considered by both parties to reflect customary international law. A copy of the convention can be found in T. O. Elias, *The Modern Law of Treaties* (Dobbs Ferry, N.Y.: Oceana Publications, Inc., 1974), 227-54.

34. Rolf Ekeus, "The Iraqi Experience and the Future of Nuclear Proliferation," *Washington Quarterly*, Autumn 1992, 72-73. The author points out the need for coordination between diverse nonproliferation organizations like the International Atomic Energy Agency (IAEE), the Missile Technology Control Regime (MTCR), the Chemical Weapons Convention (CWC), and the Nuclear Suppliers Group, among others. The lack of coordination has hampered effective controls on proliferation.

35. Sue McMillin, "Star Wars: A Tale of Technology, Politics, and Money," *Colorado Springs Gazette Telegraph*, 21 March 1993, A7.

36. This is a paraphrase of Alvin Toffler's statement that "technology must be assimilated by the user." Quoted in Lupton, 11.

37. Examples include the advent of the armor-piercing crossbow during the Hundred Years' War, heavy artillery in the First World War, and air power in the Second World War.

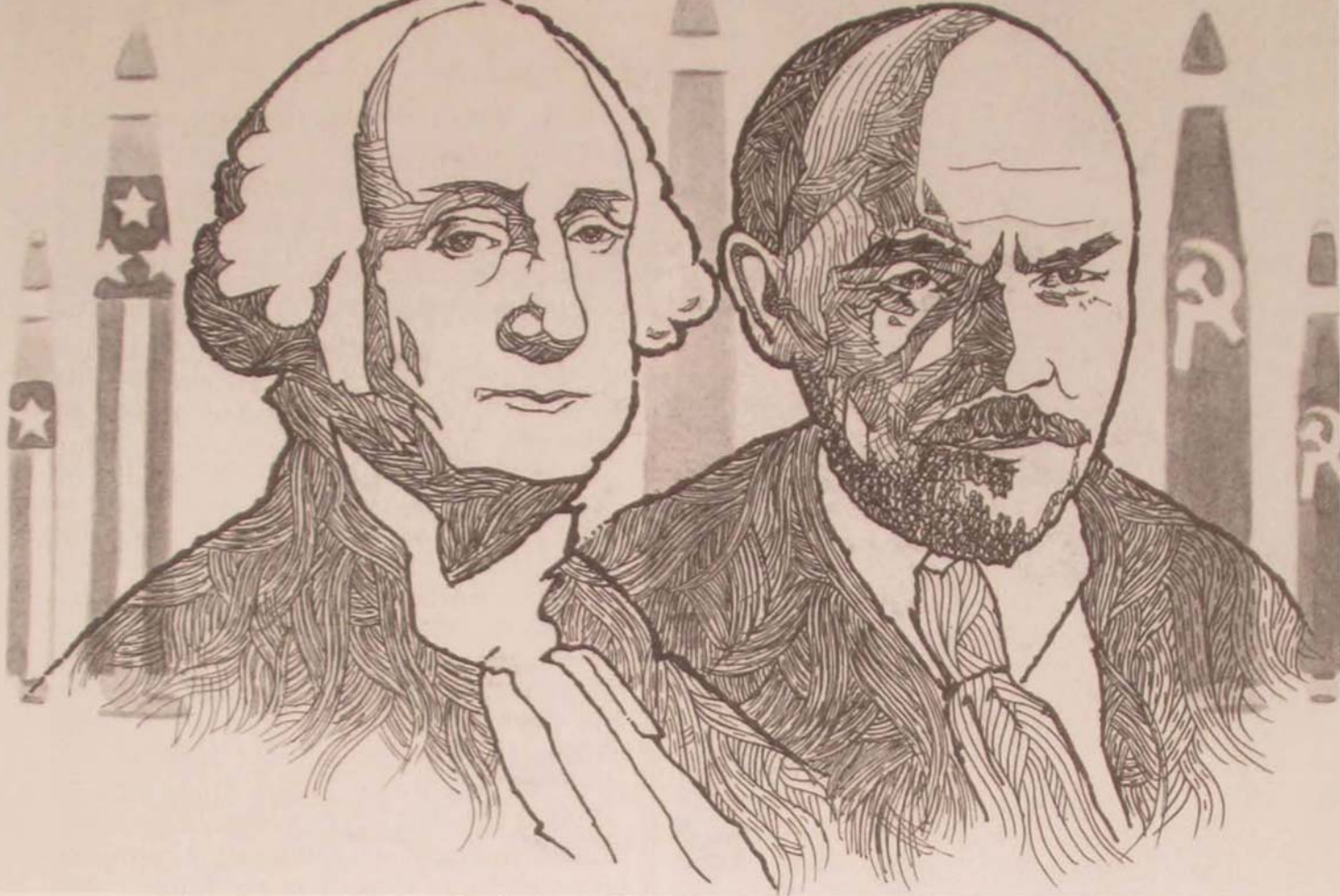
38. *Report of the Senate Armed Services Committee on the National Defense Authorization Act for FY 1993*, S. Doc. 102-362, 102d Cong., 2d sess., 1992, 138.

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# STRATEGIC CULTURE AND BALLISTIC MISSILE DEFENSE

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## RUSSIA AND THE UNITED STATES

LT MIRIAM D. BECKER, USN

**T**HE ABILITY not only to explain previous strategic choices but also to reach informed judgments about a country's probable future behavior has become even more important with the advent of nuclear weapons. Military, political, and academic thinkers have developed theories based on models such as bureaucratic and institutional patterns of interaction and decision making, ideology, cultural factors, and systemic-level analysis. No one

theory has yet been able to offer a complete explanation or consistently reliable forecast of a nation's strategy and actions.

This article attempts to advance understanding of one aspect of the why—namely, strategic culture in the context of ballistic missile defense (BMD). To that end, it examines the United States and Russia to determine (1) their strategic cultures, (2) the basis of their BMD strategies in the recent past, and (3) the ways their strategic cultures and approaches to BMD



COURTESY OF NEBRASKA STATE HISTORICAL SOCIETY

*Several factors have contributed to the development of US strategic culture, one of which was the American experience of taming a continent-sized frontier. In his Wild West shows of the late nineteenth century, William ("Buffalo Bill") Cody made a show business career out of symbolizing the American frontiersman.*

are changing (if that is indeed the case) and the ways such changes may affect future strategic BMD developments and the status of the Antiballistic Missile (ABM) Treaty.<sup>1</sup>

Andrew Marshall argues for the need of multiple methods in analysis. In an attempt to improve "intelligence forecasting of Soviet military forces," he examined several analytical models, finding that multiple methods used in conjunction allow asymmetries and similarities of national strategies to be more intelligently identified, compared, explained, and fore-

casted. Marshall notes that "the comparison of simple number counts or the comparison of the technology in individual weapons can be very misleading" when not put into context with other factors.<sup>2</sup> Training, doctrine, tactics, and strategic culture exemplify these other factors. The strategic culture approach may prove essential if one is to interpret the results of conventional methods of analysis as perceptively as possible.

In view of the dramatic changes in the international environment, some people are questioning the status of the ABM Treaty and arguing about the need for a strategic BMD system. These changes include the upheavals in the former Soviet Union, the proliferation of ballistic missiles and nuclear weapons technology, and the increasing potential for regional conflicts involving ballistic missiles and nuclear weapons. The question of whether the ABM Treaty should be maintained, amended, or abrogated is certain to be posed more sharply in the future. Will more advanced strategic BMD development and deployment be pursued by Russia and/or the United States? The concept of strategic culture may identify policy determinants that could shed light on these questions.

## Strategic Culture Defined

Strategic culture is a fluid and elusive concept first introduced in 1977 by Jack Snyder's Rand study on the USSR.<sup>3</sup> Ken Booth probably provides the most detailed definition of the concept, noting that strategic culture "refers to a nation's traditions, values, attitudes, patterns of behavior, habits, symbols, achievements and particular ways of adapting to the environment and solving problems with respect to the threat or use of force." In short, it defines a set of patterns of and for a nation's behavior on issues of war and

peace. Further, it is derived from a nation's history, geography, and political culture, and represents the aggregate of attitudes and patterns of behavior of the most influential voices (i.e., the political and military elites).<sup>4</sup>

The US and Russia have undergone extraordinary yet interdependent evolutionary changes during this century in the realms of technology, military capacity, political character, economics, and societal composition. Because strategic culture is a dynamic concept, any changes should be reflected in the two countries' BMD strategies. Booth suggests that one must assess those factors

that are likely to lead to change in national strategic styles. . . . Among such factors identified . . . the most important are as follows: the failure of existing strategies, generational changes, major domestic upheavals, technological revolutions, significant developments in the international environment, and learning from others.<sup>5</sup>

Accordingly, major changes would be expected in both the American and Rus-

sian strategic cultures, given the dramatic history of this century.

Booth's supposition concerning changes in strategic culture, noted above, requires that analysis of each nation's strategic culture undergo at least periodic review and updating in order to remain accurate and germane. As already mentioned, the fact that strategic culture is a fluid concept with no clearly defined boundaries leaves much room for argument pertaining to the actual usefulness and reliability of such a concept. Its nebulosity carries the risk that the concept will be used as a catchall by people unable to use other methods to wholly explain the basis of a nation's strategy. These potential pitfalls demand the prudent use of this concept in conjunction with other means of analysis if it is to remain viable and credible.

*Russia's lack of natural borders and its vulnerability to invasion influenced the development of Russian strategic cultural characteristics. For example, the closeness of Saint Petersburg to Russia's border was a factor in that country's military and foreign policies for centuries.*



Studies in strategic culture are also useful because they call attention to the dangers of ethnocentrism in strategic thought.<sup>6</sup> Students of strategic affairs are cautioned not to project their standards and motives on others and not to assume that their national traditions are superior, since these assumptions may lead to misunderstanding the intentions of others. Ethnocentrism may lead to overlooking the significance of differences because of assumptions that both parties view an issue in the same way.<sup>7</sup>

The concept of strategic culture should not be considered a comprehensive explanation of a nation's strategy. It defines policy boundaries and assumptions but may not always determine concrete policy choices. It is simply another tool that may be of assistance in understanding national strategies. Issues as complex as national strategy require examination from multiple, diverse perspectives if one hopes to achieve a deeper understanding.

## US and Russian Strategic Cultures

This examination of the strategic cultures of the US and Russia confines itself to the following variables: historical experiences of war, self-defined roles in international politics, decision-making structures for policy definitions, defense budget trends, arms control, and national security strategy. Obviously, a short article cannot provide a detailed review of the determinants of each nation's strategic culture. Some of the main characteristics and determinants of American and Russian strategic cultures are summarized in tables 1 and 2, respectively. The following is a brief discussion of the development of each nation's strategic culture.

Five factors have contributed to the development of American strategic culture: (1) continental insulation; (2) the remoteness of serious security dangers, owing in part to the military weakness of

immediate neighbors; (3) the experience of taming a frontier of continental proportions; (4) enduring fundamentalist religious beliefs; and (5) a national substructure of immigrants.<sup>8</sup> These factors helped to form the American ethos. Escaping repression, immigrants came to this continent intent on building a new country and a new and better life for themselves and their children. Previous political, social, and religious constraints were thrown off; unexplored land was conquered; and the New World was seemingly isolated from European political struggles. The US became a safe haven.

The development of the US into a nation was a unique experience compared to that of other countries, especially with regard to the role of the military. The seventeenth-century Colonial period was fraught with violent struggles for personal survival and imperial expansion into the New World. No centralized military force existed, nor was one desired. As the colonies developed, so did their military potential. However, they never had more than a fairly low capacity for self-defense, particularly against the Indians. "With great strength but weak defenses, the colonies experienced warfare less in terms of protection . . . than in terms of retribution, of retaliating against violence already committed."<sup>9</sup> Certain similarities to US nuclear strategy are apparent insofar as that strategy has relied on threats of nuclear retaliation to certain acts of aggression but has deployed no effective defense against nuclear weapons. Efforts to develop such a defense have been intermittent.

Colin Gray asserts that US strategic culture is oriented towards problem solving and does not accept readily the idea of continuing conflict—as was part of the Soviet ideology. The idea that certain parties may not even want to agree on an issue (e.g., the Yugoslav situation) is antithetical to the American capitalist assumption that issues must be resolved in order for commerce to prosper. Ameri-



Table 1

## US Strategic Culture

- 
- Centrality of the rule of law in both domestic and international affairs.
  - Pluralistic decision-making process with frequent changes of administrations, resulting in short-term planning.
  - Constitutional order with civilian rule voluntarily accepted and upheld by the military.
  - Participation of informed public in decision-making process.
  - Condition of relative safety as a norm built upon US geographical isolation.
  - Use of decisive military force and advanced technology to achieve quick conflict resolution.
  - Reliance on economic-technological superiority with little tolerance for mistakes in strategic planning.
  - High moral standards; use of force must be justified and pursued for a legal and ethical purpose.
  - Little experience of defeat in war, except for the Vietnam conflict.
  - Belief that most countries want to be like the US and accept its international leadership role.
  - National and international security issues placed on technical problem-solving level.
  - Grudging support of military force requirements, unless a clear and visible threat is present.
  - Belief that victory must entail no more than modest casualties.
- 

can strategic thinking has tended to be based on short-term goals. Strategic thinking, using Henry Kissinger's definition of 1957, is the ability to relate power to political purpose. Overall, grand strategic thinking is not widely practiced in major areas of US defense planning, a fact that reflects a national shortcoming—even before the nuclear age.<sup>10</sup>

Long-standing ideological principles such as democracy and constitutionality heavily affect US strategic culture, as does the more recent emphasis on quantitative

Table 2

## Russian Strategic Culture

- 
- No equivalent to US preoccupation with the rule of law and constitutional order.
  - Centralized government.
  - Military desire for internal stability, given non-Russian borderlands under Moscow's control.
  - Consistent seeking of international prestige and superpower status via military means.
  - Underdeveloped lines of communications requiring semiautonomous, forward military deployments.
  - Preparedness of the "rear" for military operations—both internal and abroad—through militarization of society.
  - Military/political dominance of strategy making; continued importance of war-fighting, war-winning, and damage-limitation capabilities.
  - Threat of enemies; persistence of xenophobia with fear of (further) loss of territory and internal fragmentation.
  - Sacrifices of population for the state.
- 

strategic analysis. The American experiences of war (and relatively limited encounters with defeat) have resulted in the cultural characteristics of a relatively low threshold for withstanding pain and the belief that victory must entail no more than modest levels of US casualties. Moreover, the perception of security threats as distant and the reliance on technical "fixes" to international problems have allowed US national strategy to focus on the near term and to rely on crisis-response measures, especially with a lower risk of global war. The pluralistic American government, although it impedes the development and implementation of long-term strategy, does allow multiple perspectives to coexist and often to overcome shortcomings in national policy. Despite the consequences of the dissolution of the USSR on the international environment, US strategic culture does not seem to have radically changed at this point.

One is struck by the sharp contrast between the American and Russian strategic cultures. Whereas US strategic culture appears to be based upon "ideological" principles such as constitutionalism and democratic values, Russian strategic culture seems to have been largely forged by practical necessities of geography and history. Understanding the effect of the Soviet experience on Russian strategic culture is central to any attempts to explain current Russian BMD policy goals. One of the major questions is, To what extent did the Soviet experience affect the traditional Russian culture?

Some of Russia's basic strategic cultural characteristics are rooted in its history. The lack of natural borders has resulted in an expansionist perspective, reflecting a desire to keep the enemy as far away from Moscow as possible. The wide-open plains that symbolized new opportunities to Americans stand as a constant reminder of Russia's vulnerability to invasion. Not only was most of Russia invaded by the Mongols, but that extensive rule (1240-1480) turned Moscow eastward and caused Russia to lapse behind the mainstream of European political and cultural development.<sup>11</sup> In addition to its "defensive" expansionistic propensity, Moscow also desired to obtain land more suitable for agricultural pursuits and mineral extraction than that offered by frozen Siberia.

The wars during Russia's imperial age helped to establish it as a major force to be reckoned with in Europe, Asia, and the Near East. Concurrently, the Russian government was attempting to maintain internal control—a monumental effort, owing to the harsh climatic conditions and the lack of any efficient transportation infrastructure. Russia is faced with this situation even today.

The Soviet revolution did bring about the breakdown of the old social order. With the goal of building a new socialist state, the general population was offered new opportunities that had not been avail-

able to it before, such as political careers, industrial management, higher education, and diverse military positions.<sup>12</sup> Although the Soviet system did develop its own class divisions, social mobility (indisputably at a high cost) became available to many people who otherwise might not have had the opportunity. To an extent unknown before, the overall technological and educational level of the populace rose, aiding the USSR's efforts to further develop its military-industrial sectors.

Soviet ideology justified the maintenance of very large armed forces on various grounds, including the need to be able to spread the "revolution" whenever possible. The result was that, to a remarkable degree, the entire society within the USSR was militarized.<sup>13</sup> This phenomenon constituted a fundamental change from Russian strategic culture and is consistent with Booth's theory of change in strategic culture, because it reflects a major change in domestic political arrangements.

The high level of militarization obtained under Soviet rule was not only for protection against external threats but also for security against internal disorder. Soviet military and paramilitary organizations (present even among children) were a source of immense pride. The Soviet government used the institutions as tools for creating societal norms and promoting national integration.<sup>14</sup> All major reforms were introduced by the Russian state as a result of military necessity. For example, Peter the Great used new military schools to Westernize the gentry in order to modernize his military forces. The Russian state has been the primary agent in initiating social, economic, and technological change.<sup>15</sup> The impact of the Soviet era's militarization of social institutions—including the prominence of military and paramilitary organizations—on Russian strategic culture can be expected to endure in the years to come. However, the "myth" of the military has been broken, along with that of the Communist

Party of the Soviet Union (CPSU), and the military no longer enjoys the prestige and admiration it once knew.

The USSR was not committed to maintaining international order but to guarding the process of transition from the present order to socialism.<sup>16</sup> The end result was a different way of looking at the force structure requirements and the role of nuclear weapons. William Odom contends that the Soviets looked at political needs and then at the technological capabilities available, as well as the potential strengths of adversaries—including the United States.<sup>17</sup> Leon Gouré adds that the Soviet development of defense policy was not the result of an action-reaction process with the US, as thought by many US policymakers. Rather, it was based upon supposedly scientific Marxist-Leninist tenets that incorporated available technological capabilities. The USSR attempted to anticipate not only its own military needs but also potential changes in the policies, doctrines, strategies, and capabilities of potential opponents.<sup>18</sup>

The 70-plus years of Soviet military activity produced a pattern. Military and political leaders recognized that the USSR's military capabilities were limited by objective conditions, summarized by Odom as (1) a manpower base with a low technical-cultural level; (2) an industrial base inadequate for modern technology and weapons, both qualitatively and quantitatively; and (3) the emergence of several new technologies that changed the nature of modern weapons, a situation that could lead to a new military doctrine.<sup>19</sup> The fall of the Soviet Union will undoubtedly have little effect on the last condition. However, if Russia could make improvements in the first two conditions (a debatable point at present), such changes would have a significant impact on Russian strategic culture, especially in the areas of defense, political structure, and international standing.

The fact that Russian strategic culture is encountering a perception of heightened



*Russia has a history of introducing major reforms as militarily necessary. Peter the Great used new military schools to Westernize the gentry in order to modernize his military forces.*

insecurity on the regional level is resulting in an increasing reliance on nuclear weapons to meet national security needs. This perception is reinforced by the disintegration of the Russian economic infrastructure, which traditionally supported the military's requirements. In order to confront the increasingly intense competition for economic resources and new technology, Russia may be forced to rely on Western aid until Moscow considers itself relatively self-sufficient.

An assessment of Russian strategic culture indicates that the Soviet experience did have significant impact. Faced with

major changes in its international status, domestic political-military arrangements, and national security threats, Russian strategic culture is nonetheless moving beyond the old Soviet culture.

## Ballistic Missile Defense

The pursuit of nuclear weapons and ballistic missiles since the 1940s has confirmed the Soviet theory of a "dialectic of arms development" in that the development of offensive armaments has resulted in the near-concurrent conception of defensive systems (i.e., BMDs).<sup>20</sup> The nature of each country's BMD systems is, however, very different—not only physically but also purposively. The concept of strategic culture may shed some light on the origins of these differences. The knowledge gained from examining the US and Russian strategic cultures may, it is hoped, provide insights regarding the past and potential future BMD strategies of these nations.

Both countries have viewed BMD as part of their overall national strategies, though their policies have differed at times as to the exact role of BMD. The US has generally viewed BMD as a separate part of its nuclear deterrence strategy, while the USSR has considered BMD integral to its overall operational and damage-limitation strategy.

One of the major effects of the development of intercontinental ballistic missiles was that the US was no longer guaranteed the ability to stand aloof from wars in Europe and Asia. In fact, as the only nuclear power at the end of World War II, the US chose to guarantee its involvement in virtually any future war in Europe, especially after the establishment of the North Atlantic Treaty Organization (NATO). BMD policy of the US was to be heavily influenced by European alliance considerations.<sup>21</sup> Because NATO was an "entangling alliance," it constituted a

break with one of the fundamental traditions of US strategic culture—belief in safety as a norm built upon US geographical isolation.

The first controversial issues concerned the technical feasibility and the political and strategic desirability of a BMD capability. As it happens, over 40 years later the debate still rages. With the exception of one deployment in 1975 (Safeguard, which was dismantled shortly afterwards), US strategic BMDs have not grown out of the research and development (R&D) stage. The fact that such debates have concerned a defensive system seems at first glance to be contrary to the moral basis of America's strategic culture. These debates have centered not on *whether* the US should be made safe but on *how*. By the late 1950s, US strategic thinking had become dominated by the concepts of deterrence and containment.<sup>22</sup> The debates have also included questions about the viability and credibility of US nuclear strategy. The issues have not been contained within the circle of political-military elites, as was the case in the USSR. The American democratic process actually encourages discussion of the issues among legislative, foreign policy, and technical experts, as well as the general public. The result has been the generation of many different viewpoints, such as the theories of deterrence, limited war, and arms control.

In 1983 President Ronald Reagan announced the new Strategic Defense Initiative (SDI), and in 1991 President George Bush announced the scaled-down version known as Global Protection against Limited Strikes (GPALS). Both programs were (and are) subjects of heated debates. Until SDI, the US had had no robust BMD R&D programs since the Safeguard site was dismantled in 1976.

The establishment of SDI reflected many of America's strategic cultural characteristics. It aimed to fill the immoral void left by the lack of strategic defenses. It also fit well into Reagan's plan of break-

ing the Soviet Union via economic means—a traditional American strength. The GPALS version of SDI envisaged a more realistic system for near-term deployment, while placing less stress on America's economic resources.

The events of the 1990s to date have shaken the traditional tenets of national security planners. The Gulf War changed the focus of US BMD efforts from a strategic level to a theater level of development. Further, the dissolution of the USSR in 1991 has had several consequences. First, it fundamentally altered (or even eliminated, some people would argue) the central threat to the US and at the same time multiplied (at least temporarily) the number of states with nuclear weapons. Second, the validity of past treaties (e.g., the ABM Treaty) and of recent arms control agreements with Moscow (e.g., the Strategic Arms Reduction Talks [START] Treaty) has been questioned by some people in both Russia and the US, in addition to the newly independent republics of Ukraine, Belarus, and Kazakhstan. Third, the US has unilaterally declared cuts in its strategic nuclear forces beyond those required by START I. Fourth, in 1992 President Boris Yeltsin and President Bush discussed the possibility of joint US-Russian BMD development.<sup>23</sup> Finally, in November 1992 the US elected a new president who has yet to formulate a detailed national security strategy.

Because the US is technologically superior to the former Soviet Union, it could deploy some sort of space-based BMD well before Moscow could. However, the obstacles to such a deployment for the US are political rather than technological. Each new administration may lose more of the determination initiated by Reagan in 1983. A politically committed Moscow of the 1980s—though lacking the technological capability of the US—could have sustained its efforts and deployed a system (whether or not 100 percent effective) before the US could have done so.<sup>24</sup>

Whereas in the US, BMD policy has

been closely tied to the prevailing nuclear strategy and subject to scrutiny by the informed public, such was not the case in the USSR. Public opinion in the USSR was not a factor in policy formulation as a result of the highly centralized decision-making process, which involved only the upper political and military echelons.<sup>25</sup> Once made, decisions were executed from the top down, and resources were allocated with few objections. There was also no real public reaction or protest to the deployment of nuclear-tipped interceptors in the Moscow ABM site.

David Yost identifies three requirements of Soviet military doctrine that demanded strategic defense capabilities. First was the ability to dissuade Europe and the US from using nuclear weapons. If this was not possible, then the Soviets would attempt to limit the use of nuclear weapons and prevent the extension of the geographical scope and intensity of nuclear operations.<sup>26</sup> As for being tied to the nuclear strategy, by the mid-to-late 1950s, the Soviet General Staff had incorporated nuclear weapons into its war-fighting art, denying that nuclear weapons "effected a historical discontinuity in the utility . . . of the resort to force."<sup>27</sup> Unlike the US, which has had three different strategies (i.e., nuclear deterrence, Air-Land Battle, and maritime strategy), the Soviets developed both offensive and defensive forces—including nuclear—to work in a single, combined-arms approach.<sup>28</sup> Nuclear weapons were fully integrated into the Soviet concept of operations and into political-military strategies.<sup>29</sup>

The second and third requirements reflected Moscow's preference for conventional means of war. Strategic defenses would help limit nuclear effects against Warsaw Pact forces and protect against any retaliatory strikes in response to the Soviet use of nuclear weapons.<sup>30</sup> The above requirements for Soviet military doctrine reflected not only a long-term military strategy, but also a need for long-

term and intensive political and diplomatic efforts. The centralized policy-making process and single ideology enabled the Soviets to strive for long-term goals.

Soviet ideology and Russian history would appear to have dictated the need for a more robust strategic BMD system than was actually deployed, assuming that the survival of the core political-military leadership was of paramount importance. Russia will undoubtedly retain this belief well into the next century. Even if Russia were to fragment further, the new areas would also operate under this premise of survival priorities—at least in the near term.

Keeping the above in mind and recognizing Moscow's comprehensive approach to strategy, one can appreciate the importance given to strategic defense as a whole. However, in view of continuing economic and technological constraints, Moscow has had to utilize other strategic defense elements instead of BMD in order to achieve its goals. One should not interpret the low level of BMD deployments as a lack of interest in strategic defense.

## Future of BMD

The dissolution of the USSR in December 1991 has had multiple implications for both US and Russian BMD developments and strategic cultures. The delegitimization of Soviet ideology has resulted not only in the reclassification of national security threats in new ideological terms, but also in the concession that a command economy focused mostly on supporting the military was ineffective in maintaining the country's integrity. Russia suddenly found itself without its security buffer zone against European and third world threats, not to mention the fact that some of those buffer states now hold nuclear weapons under ambiguous control.<sup>31</sup>

The US and Russia have refocused their efforts towards the domestic economy and

away from defense. In the absence of a strategic threat, funding for US strategic defense programs has been cut, and BMD programs have been reprioritized to address emerging threats. Elements of the USSR's BMD system are now dispersed throughout several new independent states, and Russia's military needs are being subjugated even further to economic and domestic considerations.

The US proposal of GPALS reflected the US perception of a diminished Soviet strategic threat, as well as increasing concern about an accidental or unauthorized launch and concern about third world ballistic missiles. The US hailed the dissolution of the USSR as the great victory of democracy over communism. The expectations for Russia, at least those publicly voiced, seemed to envision a "democratic and capitalist phoenix" arising from the ashes of autarchy. Obviously, the difficulty of introducing and implementing unfamiliar theories into a country that stretches across 11 time zones was not readily apparent to some people. Again the US displayed its weak grasp of the magnitude of the challenges; such profound changes cannot occur overnight or possibly even in this generation.

Considering economic constraints alone, the likelihood of either the US or Russia deploying a substantial strategic BMD system in the foreseeable future is minimal. However, the recognition of the dangers from the global proliferation of ballistic missiles and nuclear technology, together with Russia's new security situation, has refocused BMD efforts towards mobile antitactical ballistic missile (ATBM) systems.

A previously inconceivable effort was initiated in late 1991 to explore options for a US-Russian cooperative development of BMD. Reagan had broached the idea of sharing BMD technology but not actual defense systems. In January 1992 Yeltsin initially signalled a readiness to jointly design and create a jointly operated BMD system—the Global Protection System

(GPS)—in place of the US SDI program.<sup>32</sup> This offer was later withdrawn, probably under strong pressure from the Russian military establishment. However, as noted above, Yeltsin did inquire about GPS at the Vancouver Summit of 1993. Some analysts believe that the Russians appear to be taking a more positive view of BMD than in the past and may be amenable to allowing limited BMD deployments by the US beyond those permitted by the ABM Treaty.<sup>33</sup>

## Looking Ahead, Now

US decision makers must realize that Russia's first concern is for Russia—not the maintenance of international order. Since an abhorrence of instability is rooted in the American strategic culture, many Americans find it inconceivable that—even with the disappearance of the “evil empire”—instability is still present. This mind-set leads one to think that any conflict may be considered a problematic “fire” that can be easily put out. It is widely assumed that major systemic problems do not exist, since experience has shown that “good” (i.e., democracy) will prevail. Therefore, one needs only limited “fire-fighting equipment” (i.e., ATBMs). Here again, the US depends on technical solutions to solve potentially serious political and strategic problems.

In contrast, the collapse of the USSR has had major consequences for Russia's strategic culture. First, Russia's threat perception has been refocused to regional dangers closer to its borders. Second, the “myth” of the great Red Army has been broken, and the population's support for the military has been vastly reduced. Nonetheless, the military and political dominance over strategy making remains essentially unchanged. Also, the military appears to be operating under basically the same doctrine as it did during the Soviet period. Third, because of the political turmoil in Moscow, political power is

diffusing to regional authorities. In addition, many people in Moscow are struggling against various extremist political movements to replace the guiding ideology of Marxism-Leninism with “something else” (i.e., a more democratic and market-oriented system of government). However, to achieve these goals, Russians must also enhance the role of the rule of law and constitutional order. Although Russia's international prestige and super-power status traditionally had been sought through military means, the country's current situation obliges it to rely on political and diplomatic means in order to maintain an approximation of its former status.

The ABM Treaty's future depends on the status of the US-Russian relationship and the resultant BMD policy decisions. The US has apparently underscored its willingness to remain within the ABM Treaty by changing the emphasis of BMD R&D to theater-level defenses. The proposal of a GPS was in part intended to revise the basis of the US-Russian relationship to one based on cooperative, strategic defensive missions rather than one based on offensive strategic weapons. Discussions about GPS may continue—but more as an exploration of confidence-building measures than a program for operational deployment. Considering the prominence of law in American strategic culture, it is unlikely that the US will unilaterally abrogate the treaty unless an unmistakable threat to US national security arises.

In view of several factors (e.g., the competition within the Russian government between conservative and quasi-liberal factions, the dissolution of the USSR, the military disapproval of the situation, and the relatively few major institutional reforms), Russian discussion of mutual BMD development is a good strategic move on Moscow's part. Such discussion throws Washington into internal disarray as US agencies argue over the advantages, disadvantages, and modalities of aid to

the former adversary. Russia can prevent any US abrogation of the ABM Treaty and unilateral BMD activity beyond the treaty's limits because the US is so concerned with legality (i.e., the US realizes that Russia still considers the ABM Treaty to be legitimate). This situation not only gives Russia time to get its house in order, but also gives it access to US funds, tech-

nology, and intelligence resources as the US tries to persuade Russia that participation in GPS would be to its benefit. With very little effort, Russia can receive enormous benefits while allowing the US to bare its soul in its eagerness to win a new friend. Once Russia is back on its feet, the US may suddenly realize that it has bared more than its soul—to the detriment of its own security. □

#### Notes

1. For a more detailed discussion of this subject, see Lt Miriam D. Becker, "Strategic Culture and Ballistic Missile Defense: Russia and the United States" (Master's thesis, Naval Postgraduate School, June 1993).
2. Andrew W. Marshall, "Arms Competition: The Status of Analysis," in Uwe Nerlich, ed., *Soviet Power and Western Negotiating Policies*, vol. 2, *The Western Panacea: Constraining Power through Negotiation* (Cambridge, Mass.: Ballinger Publishing Co., 1983), 6, 16.
3. Jack Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*. Rand Report R-2154-AF (Santa Monica, Calif.: Rand Corporation, September 1977).
4. Ken Booth, *Strategy and Ethnocentrism* (New York: Holmes & Meier Publishers, Inc., 1979), 121.
5. *Ibid.*, 127.
6. Jack Snyder, "The Concept of Strategic Culture: Caveat Emptor," in Carl G. Jacobsen, ed., *Strategic Power: USA/USSR* (New York: St. Martin's Press, 1990), 3-9.
7. David S. Yost, "Nuclear Deterrence and Western Societies: Strategic Culture and Public Opinion in Britain, France, Germany and the U.S." (Unpublished paper presented to GREFHAN, 8 March 1991), 15-16.
8. Colin S. Gray, *Nuclear Strategy and National Style* (Lanham, Md.: Hamilton Press, 1986), 40.
9. John Shy, "The American Military Experience: History and Learning," *Journal of Interdisciplinary History* 1, no. 2 (Winter 1971): 212-13.
10. Gray, 45, 48, 142.
11. David R. Jones, "Soviet Strategic Culture," in Jacobsen, 38-39.
12. *Ibid.*, 42.
13. William E. Odom, "The 'Militarization' of Soviet Society," *Problems of Communism* 25 (September-October 1976): 34-51.
14. Gray, 75.
15. Jones, 40-41.
16. Gray, 20.
17. William E. Odom, "Soviet Military Doctrine," *Foreign Affairs*, Winter 1988-1989, 131.
18. Leon Gouré et al., *The Emerging Strategic Environment: Implications for Ballistic Missile Defense*, Special Report (Washington, D.C.: Institute of Foreign Policy Analysis, Inc., December 1979), 4.
19. Odom, "Soviet Military Doctrine," 118.
20. Jeanette Voas, *Soviet Attitudes towards Ballistic Missile Defence and the ABM Treaty*, Adelphi Papers no. 225 (London: Brassey's, Winter 1990), 21.
21. David S. Yost, *Soviet Ballistic Missile Defense and the Western Alliance* (Cambridge, Mass.: Harvard University Press, 1988), 5-6.
22. Donald R. Baucom, *The Origins of SDI, 1944-1983* (Lawrence, Kans.: University Press of Kansas, 1992), 8.
23. US Arms Control and Disarmament Agency, "Arms Control-Related Material from the Summit Meeting between U.S. President Bush and Russian Federation President Yeltsin," *Fact Sheets*, 16-17 June 1992.
24. Bruce Parrot, *The Soviet Union and Ballistic Missile Defense*, SAIS Papers in International Affairs no. 14 (Boulder, Colo.: Westview Press, 1987), 87.
25. Fritz W. Ermarth, "Contrasts in American and Soviet Strategic Thought," *International Security* 3 (Fall 1978): 143.
26. Yost, *Soviet Ballistic Missile Defense and the Western Alliance*, 110.
27. Gray, 68.
28. Odom, "Soviet Military Doctrine," 123.
29. Yost, *Soviet Ballistic Missile Defense and the Western Alliance*, 73.
30. *Ibid.*, 112-14.
31. Lawrence K. Gershwin, "Threats to U.S. Interests from Weapons of Mass Destruction," *Comparative Strategy* 12, no. 1 (January-March 1993): 10.
32. See note 23.
33. Interviews conducted by the author in Washington, D.C., in April 1993.



# THE UNITED STATES AND NUCLEAR WEAPONS IN EUROPE

LT COL DOUGLAS ERWIN, USAF

**O**VER THE LAST 45 years, the nations of North America and Europe learned something about the North Atlantic Treaty Organization (NATO) that seemed—to some of them—to be counterintuitive: that the military aspects of the alliance must continually take a backseat to political considerations. This fact was the essence of “coalition warfare” and was something that the alliance became quite good at. Some people, particularly in America, called it “papering over problems” while others saw it as avoiding the

hard issues. Yet, in Germany the nuclear question was predominantly—if not always—seen in the political context. For instance, NATO had a nuclear policy that was confusing at best and a “forward defense” policy that was often the nemesis of good military judgment. But in reality it was what the essence of alliance was—and is—all about: the give-and-take of politics applied to a military alliance. But if we learned this in the last decades, we seemed to have forgotten it all over again. Today the call is for the definition of a “clear threat” and the necessity of a





military response to it (if such a thing can be found in the post-cold-war world). The result is a call for a smaller (or no) NATO: the rational and logical attitude is that if no concrete threat is seen, no response is needed. At its best, this shows the cold logic of the military planner: interest articulation, threat definition, and military response. But this is backwards. If it does accurately reflect the Clausewitzian view that there must be a clear link between means and ends, it nevertheless ignores several other of Clausewitz's main points: the necessity of the political goal being dominant over the military one and the dialectic of politics and military affairs

*The volatile issue of maintaining nuclear weapons in Europe has sparked public protests in England (above) and Germany (opposite).*

that makes predicting outcomes of conflict difficult at best. Thus, while it may sound Clausewitzian to say that a rational means-ends calculus is necessary, it does not follow that the rationality must include the primacy of the political object. The goal of this article is to make this point concrete in the transatlantic context.

We in the North Atlantic Alliance, thus, must learn again—even in the new world order—that the alliance is first and foremost political. *This means that it is more*

important to negotiate interests than it is to have a clear, logical political-military policy. This was always true of nuclear policy. It is true today too. This article is about relearning this lesson. We shall see that this lesson, rather than being painful for the United States in the 1990s, ought to be a matter of self-interest if nothing else.

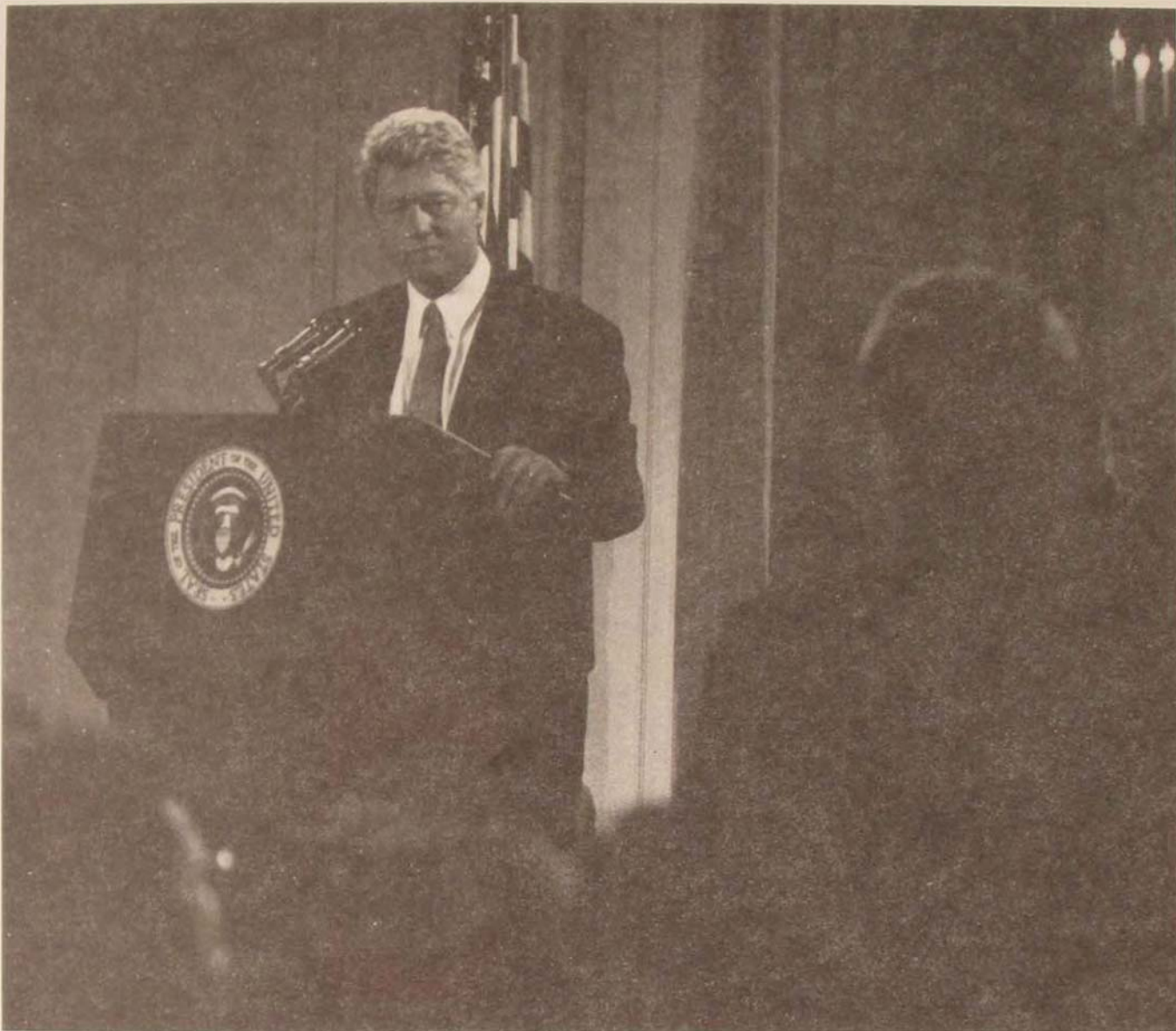
The way to address these issues in the context of this article must be to identify goals that may be relevant to nuclear weapons and the way these goals are distributed among alliance partners. Such goals may include the "residual threat from the East" (i.e., perhaps Russia or Ukraine), the emerging threat from the South (including the Middle East), and the necessity of alliance unity (with its particularities of France, Britain, Germany, and the US).

The key to a program of *interest aggregation* in an alliance is that many interests must be reflected in one strategy and one force structure, although—to be sure—that strategy and force structure may be as indefinite as necessary. The benefit, though, is that once a strategy is agreed upon, all members are on board to support it. This not only reflects alliance unity, but also positively builds it if it is done

carefully. The goal, then, is to use the means of a military alliance (nuclear weapons included) to achieve the political ends that are desired and inherent in the concept of alliance.<sup>1</sup>

Two points must be made in this context. First, the benefit of the political nature of nuclear weapons is due in no small part to the question of what role "ambiguity" plays in deterrence theory. One view is that deterrence is heightened by certainty of response. But an alternative view is that ambiguity of response actually increases deterrence since a potential enemy will tend to plan for the worst-case scenario and thus be deterred even when objective circumstances may not predict it. Further, it must be emphasized that nuclear weapons possess a "political nature" independent of a "political role" in war itself. That political role includes an integrative function in the alliance that allows its members to use a concrete force-structure arena to settle a wide range of policy issues. As we shall see, it is this force-structure arena, when combined with a form of "forced bargaining," that will offer the greatest potential for alliance integration. This is true despite Germany's—the main Continental ally—lack of interest in emphasizing the





*Both the foreign and defense policies of the Clinton administration "de-emphasize" nuclear weapons.*

"Atlantic link."<sup>2</sup> But, as we shall see, the suggested solution will fulfill Germany's interests, as well as those of America.

Having suggested these questions, we still must address a practical and contemporary issue. Is the public's silence on the issue of nuclear weapons in Europe a matter of "alliance politics" (in the sense of seeming to paper over issues, but in reality aggregating them in a whole that everyone can support), or is it a matter of policymakers not wanting to think about a potentially divisive issue (i.e., letting

sleeping dogs lie)? If it is the former (or an incipient form of it), then we should be appreciative of the alliance thinking. But if it is the latter, then we must—at some point, not necessarily now—kick the sleeping dog. Any strategy based on an old cold war strategy holdover that no one wanted to address anew due to the fear of public outcry is one that must fail in the long run. Certainly, public support for military strategies (particularly nuclear ones) is critical. Such support may not be automatic—and may not be easy to garner—but once acquired through honest public discussion, it is solid and serves its purpose well.

Of course, France and Britain possess nuclear weapons, but—as we shall see—there is little to suggest that they will be available for alliance military strategy or for integrative functions for alliance goals. Thus, this article addresses the integrative role of nuclear weapons in the future European security structure with that assumption.

### Political Nature of the Alliance

The old saw about NATO keeping the Russians out, the Americans in, and the Germans down is not as out-of-date as some people would believe. Yes, the Russians are different Russians, and the Germans are different Germans—but, in fact, the Americans are different Americans. Ironically, as all three participants in the old drama have changed, their relationship with each other—in a sense—has remained constant. The transatlantic bond that brought peace in the past still brings peace today. “The alliance is much more than an exceptionally durable version of the classic ‘security community.’ Rather it should be viewed as an evolving civic community.”<sup>3</sup> Alternatively, we should point out that “the Alliance remains the strongest link between Europe and North America.” This is based “on shared values and common interests. It is this, and not the presence of an existential (or even actual) threat, that is the hub of the Alliance.”<sup>4</sup>

Yet, the tendency of the cold war years to forget the political nature of the alliance, although today acknowledged more in rhetoric than before, is less recognized in our actual policies toward Europe. There was, it seemed, a tendency to see the political nature of the alliance always tilting toward a “nonmilitary”

stance. There is no inherent reason for this, and there are several dangers that tend toward this error.

The most obvious problem may be the pressure of defense budgets that demand cuts, regardless of threat perceptions. In Europe, the threat of budget cuts is as real as it is in America—or more so—but it is also paralleled by a perceived necessity to achieve political integration as a step en route to a common European defense policy. This also acts as an irrational factor in shaping future defense budgets. The pressure from the Maastricht Summit of December 1991 for some political union with a defense component<sup>5</sup> has driven much of the security thinking since 1992. Statements by French president François Mitterrand and then foreign ministers Roland Dumas and Hans-Dietrich Genscher (and of course Jacques Delors) stress this point. But this necessity for an alliance preceding a threat response “stands logic on its head.” It “is a reversal of all historical experience.” Yet, this “rational” approach also misses an important political element of alliance politics. Thus, the Western European Union (WEU), for instance, must be measured in its ability to “meet security needs,” not political goals.<sup>6</sup> (The similarity of “political ends” of the WEU and of NATO is not missed here; rather, it held that the European Community [EC] ends are not relevant to NATO, while those of a nuclear strategy are).

The demand for a “military rationale” is almost universal for weapons systems, despite their generally agreed-upon political nature.<sup>7</sup> As another complication, former secretary of defense Les Aspin, from his prior position of House Armed Services Committee chairman, has used “threat-based” budget arguments to maintain that a military smaller than the base force would be more than a match for any likely aggressor.<sup>8</sup> *The problem in the context of this article is that an overly rational threat-based force structure is not one that will easily allow the inclusion of a*

nuclear force that has other than "military" goals. Thus, the goals of alliance cohesion—or alliance burden sharing—will tend to be dismissed.<sup>9</sup>

But this does not follow from the "end of the threat." As two strategists note, "Victory . . . does not end a commitment," or "It is no longer tenable for defense concerns to dominate NATO's security planning."<sup>10</sup> But the "rational" or pragmatic element is strong.<sup>11</sup> The Europeans certainly express their own "distinctive political personalities," if not "renationalization" itself. This "present danger" is that "the Western allies will tend to take parochial views of Alliance matters." This approach "uses a national filter to assess weapon systems, force structures, contingency plans and command arrangements."<sup>12</sup> The problem, then, is one of not having available the tools for alliance integration if defense policy becomes too "rational."

But another danger on the opposite side also exists—that of making the threat "too existential" for a concrete force to deal with. Thus, if the existence of any nuclear weapons will deter, then force-structure planning becomes redundant, and all the old requirements for planning become obsolete. "International institutions are by definition expressions of collective purpose," an American academic said, "so it's not surprising that they flounder when we are so unclear about what our purposes are."<sup>13</sup> Political imperatives have driven the Europeans to "reify" the drive toward defense cooperation.<sup>14</sup> This problem is only exacerbated with a lack of US alliance leadership. We shall see later that a too-generalized threat perception can lead to a too-generalized threat response, which can lead only to disaster when the response is requested or executed. If it is true that all the old cold war deterrence theories do not apply to the modern world, it is also quite possible that some of them do apply now as they did before.

Very much linked with that problem is

another one that refers to the willingness of the US to in fact forego short-term national interests for the sake of longer-term alliance goals, particularly in the context of weakening Atlantic relations.<sup>15</sup> There is a new willingness to go it alone, not just in strategic matters but in trade and economics,<sup>16</sup> leading eventually to a weakening of the core values that bind the alliance together.<sup>17</sup> The danger is to Europe itself, to the US,<sup>18</sup> and to the wider community.<sup>19</sup>

In sum, there are major disincentives and roadblocks for the US in pursuing an integrative goal for the alliance with the tool of nuclear weapons. Yet, the "primacy of politics" must win out if US foreign policy is to be rational. We shall see how this can be done.

The first issue for the US to decide is whether the assumption about primacy of alliance goals is still correct. Can the US truly say that the interests of the Atlantic alliance are superior (generally—of course, in extremis, national interests must apply) to those of the day-to-day interests of the US, now that the cold war is over?<sup>20</sup> The US has wanted a free hand as a superpower since 1945, but the allies managed to bind it to a "sense of alliance." In turn the European allies have wanted a "free ride" but in general have avoided the worst aspects of going in that direction by a sense of the need to keep the US involved as a "European power." Is the "tie that binds" still relevant? Three issues are germane. First, will alliance members realize the political nature of the alliance to the extent of seeing NATO as a reflection of a common goal and not an organization "in search of a mission"? Second, will the nations—especially on the northern side of NATO—"return the favor" to the southern nations for the "risk sharing" that was the reality of the cold war? Third, are the nations in Europe willing to see proliferation as the threat that it is to the Continent? Most of all, will the US itself see the necessity of the primacy of politics?

## How Will Interest Aggregation Occur?

A major problem in studying nuclear weapons in Europe is that the strategy and force structure must be rooted in an organization that can make the appropriate decisions and continue to be responsible for them over time. Not surprisingly, although NATO presently plays that role, the long-term problem remains unresolved. It may be presented by addressing the question of what precisely is sought in a security architecture for Europe. The word *architecture* is used carefully since it embodies the very problem of whether one is seeking a *system of overlapping organizations* that may serve to complement each other or a *single organization* that can form a comprehensive view of security. The argument will be made here for a single organization.

Each option provides benefits; unfortunately, they are mutually incompatible. One cannot form a "compromise" between a single forum and several forums: either it is one, or it is more than one. Of course, overlapping organizations offer different solutions for different problems—an à la carte approach. This is intuitively beneficial; clearly, not all problems demand a single type of solution. Yet, the problem of multiple organizations also raises the problem of what we may call "forum shopping"—the tendency of a nation or any other actor—if thwarted in one forum—to go to another one that offers a better chance of success. But what if the issue does need to be addressed in the original forum? Indecision and procrastination may well result in "interlocking and interlocking" organizations. So far, in Europe, no decision has been made on which approach is best. The result has been to delay and thwart real decision on the future of European security. "The presence of two decision-making centers and two operating agencies handicaps efforts to forge new modes of collective action that do not depend on US leader-

ship."<sup>21</sup> This was evidenced by the Bosnian United Nations (UN) Resolution 836, which was resisted by the NATO commanders since, among other reasons, they were not consulted.<sup>22</sup> (Later on, the problem was the identification of NATO forces for UN use but with a UN execution sequence.) Since then, the US has emphasized NATO, but it has taken no action to date. Similarly, as Sen Richard Lugar (R.-Ind.) noted in the refusal to admit the northern East European nations to NATO, "the failure to do this is, I think, to see problems simply fall between the cracks of no one's responsibility, much to the lament of everybody that no one did the proper thing."<sup>23</sup>

The key for the US is to begin to see the problem of forum jumping (or forum shifting) as the problem that it is instead of as a search for a workable solution to a new Europe. As in the past 45 years, the US must see that *bargaining is good* for the alliance. Too often now, it is seen as threatening to US interests: either the WEU is going too far for the US, or the Europeans are not going far enough on Bosnia. If these problems can be seen as a result of forum hopping and not a necessary (or mere) divergence of interest, then the US will be in a better position to begin to address actual problems in Europe. Clearly, interests will be different through time, but the problem of how one goes about reconciling those different interests is important here. "The U.S. no longer dominates. We have to negotiate a new deal with Europe. It's inevitable that Europe will become more assertive in economic and security terms. We no longer have a compelling security interest for a large force on the continent."<sup>24</sup> "It's going to be a more complex relationship, if only because we're going to see alignments where the Europeans and Americans will find themselves in opposition on fairly important issues." But for all this, the US and Europe "will continue to have shared interests."<sup>25</sup> The key point is to force ourselves, in a sense, to *negotiate*. This can

be done only in a single defense organization because multiple organizations will make it too easy to shift forums rather than bargain seriously. As already noted, the subject of nuclear weapons fits nicely in this context. The ambiguity of nuclear doctrine allows the type of bargaining that furthers alliance integration.

### *US Strategy*

Of course, the declaratory policy of the US is that stated by former secretary of defense Aspin—a commitment to “provide leadership in a reinvigorated NATO.”<sup>26</sup> But several questions remain. One might be, What precisely is the level of US commitment? Aside from the view of security represented by NATO (be it old or new), “the world’s turn has brought to the fore another alternative: a calculated retreat from engagement in local ethnic disputes and regional security equations in Europe as elsewhere, and a new focus on economic considerations.”<sup>27</sup> “Reductions in US foreign policy involvement because of economic priorities” were noted by Assistant Secretary of State for Political Matters Peter Tarnoff and “[are] supported” by Aspin’s defense revisions.<sup>28</sup> Former president George Bush’s base force<sup>29</sup> is to be reduced by President Bill Clinton’s mandate for a 200,000-man cut, with 100,000 or less in Europe. If this is so, the administration will not be able to maintain the commitment to NATO in terms of the new force structure.<sup>30</sup>

Of course, *The Bottom Up Review: Forces for a New Era*, a report by the secretary of defense, implies a strategic thought process for establishing a strategy and force requirement.<sup>31</sup> The plan was to provide the basis for “the first truly post-Cold War budget,” noting that, “it cuts Cold War forces and begins to buy the new capabilities we need to meet the new dangers we face.”<sup>32</sup> But, as one officer observed about the Clinton defense budget process, “we’re wrapping a veneer of strategy on a budget that’s already been

decided.”<sup>33</sup> All is trimming programs and treading water.<sup>34</sup> Rep Jon Kyl (R.-Ariz) said they are “starting with a number and fitting a strategy to that. That’s the wrong way to go about it.”<sup>35</sup>

Thus, we must ask, Stemming from this type of defense level and organization, does this involve a nuclear commitment? (The issue was formally omitted from the secretary’s review.) This last issue, of course, raises the problem of “coupling” and burden sharing—but now in a new world. In the past, the US (and other nations) offered to share in Germany’s “burden” of nuclear defense and deterrence. Is this still true today in a new Europe? As noted above, some old theories seem still relevant: “substrategic nuclear systems” are the “critical link between conventional defense in Europe and escalation to strategic” levels.<sup>36</sup> This reminds one of the old Intermediate-range Nuclear Force (INF) issues.<sup>37</sup>

Further, the problem of US parochial service requirements arises.<sup>38</sup> The Army seems to want Air Force nuclear weapons to be maintained in Europe, as—if nothing else—“placeholders.” Nuclear weapons, once removed, will likely never be replaced. The Air Force view of dual-based aircraft being globally mobile is true but misses the point of political presence that the Army seems to be aware of. Additionally, it should be mentioned that one view has it that the US can reasonably sell its NATO program domestically only as a “foreign intervention force,” thus emphasizing the forward deployment of the forces stationed in Europe for use in future Gulf-type wars. A parochial Congress, according to this view, would fund only such a NATO deployment.

The Yugoslav example stands out as a defining case of US-European relations.<sup>39</sup> Thus, the question of US leadership becomes a major issue in terms of what role nuclear weapons will play in American and European defense policies. “The arrival of the Clinton Administration, the first in modern times to be led by a genera-



tion lacking the personal experience of European instability, has raised new questions about America's 'special relationship' with Europe."<sup>40</sup> Thus "people around the world have an eerie feeling that nobody is quite in charge of the international system."<sup>41</sup> The "Tarnoff Doctrine" reflects the same feeling.<sup>42</sup> The Clinton collapse after the Sarajevo airstrike threat only reinforces the problem.

On the other hand, the pressure of disintegrative events may mean the US will have no choice but to remain involved, an opinion held by Senator Lugar: "These countries believe they have to have us [involved] for their own security—they're incapable of maintaining peace without the presence of the United States in perpetuity. But if we are this valuable to them, and I think we are, we need to talk very candidly about what obligations Europeans have to help settle their own affairs."<sup>43</sup> This tension reflects what has become through the first year of the new administration an American attempt to continually try to find a workable alternative to the problem of the Tarnoff Doctrine. Specifically, this has to do with the next issue—US leadership and NATO's nuclear strategy.

#### *US Constraints: The Leadership Problem and Unintended Consequences*

The problem of US leadership may be an unfortunate conjunction of events having to do with the new administration and the new international context. The result, quite unintended, potentially tends toward a de facto withdrawal of US interests from Europe.

Thus, the real problem of Bosnia, as suggested above, may go well beyond the disagreement about who was at fault.<sup>44</sup> If President Clinton was "burned" on Bosnia,<sup>45</sup> he may well choose to quietly ignore the issue in the future—to the detriment of European security policy.<sup>46</sup> There is a "foreign policy vacuum in the Clinton administration and the President's

'equivocation' makes it all the more necessary" for someone "to deal with new strategic challenges."<sup>47</sup> Clinton has been "politically and temperamentally pulled in different directions" over the issue of international engagement, particularly in Bosnia. It could have forced him to decide, but he chose "to straddle," running security policy by "trial balloon" initiatives.<sup>48</sup> In this view, "when Europe looks into the American mirror, it sees an economic world power without much political influence."<sup>49</sup>

This is only exacerbated by the image of President Clinton as incompetent at the EC summit in Copenhagen in the summer of 1993 as he denied the importance of his own request to German chancellor Helmut Kohl to press for his (Clinton's) Bosnia policy. The effect on German-French relations was as damaging as it was on US-German relations. All this, in-turn, may make any decision venue harder to operate. Thus, another implication is of a structural nature. There may have been a tendency to see the WEU simply as NATO without the US. But, clearly, if the EC decision-making pattern is used, NATO-type decisions may be hard to achieve—witness, again, the failure of the EC over the Bosnian situation.<sup>50</sup>

Another problem is the nuclear proliferation threat. There may be pressure for a decreased US nuclear commitment due to a possible overreaction to a lack of progress (Ukrainian or North Korean cases) on the Nonproliferation Treaty as the treaty review approaches. Clinton's call to "denuclearize the world" despite the growth of nuclear arsenals in other nations may be a danger signal.<sup>51</sup> The weak US leadership position here could be very dangerous to achieving any non-proliferation goals in Europe. In short, there is an even greater need for US leadership at the very time that it is lacking.<sup>52</sup> Since President Clinton took office, there has been a "decreasing direction for the West," with serious implications for the US in NATO.<sup>53</sup>

Eugene Rostow sees a pattern of "withdrawing from the Truman policy of American leadership in halting aggression."<sup>54</sup> Dangerously, "the US is now more inclined to overlook or play down the importance of marginal threats to European security."<sup>55</sup> Thus, Senator Lugar has stated that "the dilemma as I perceive it is that United States defense policies . . . will lead to calls for a greater reduction of United States forces in Europe."<sup>56</sup>

Of the NATO force cuts, Secretary of Defense William Perry stressed that this was not "because of a reduced commitment to Europe, but because of a reduced threat to our collective security." Some people worry that the US is going too fast; that the cuts will bring further cuts in European forces.<sup>57</sup> In 1992 Congress cut the \$221 million infrastructure request for Europe to \$60 million. One official said that this reduction left NATO "very seriously concerned. It was a signal that the US was opting out" of external engagement.<sup>58</sup> In sum, the danger of a US leadership deficit is that intended actions may have unintended consequences. A de facto withdrawal from Europe may result from a simple overreaction to relatively minor policy failures. We will suggest later how best to deal with this threat.

**Counterproliferation: Germany and Nuclear Weapons.** One issue for the US in the future is the question of avoiding a German interest in nuclear weapons. We shall later deal with the problem of rogue nations developing weapons of mass destruction; here, we address the problem of allied weapons. "Germany, surrounded by the atomic arsenals of Britain, France, Russia and Ukraine, is bound to ask why the biggest and richest nation in Europe should be denied the means of defending its interests in a perilous world."<sup>59</sup> (France and the United Kingdom [UK] stated that at some indefinite time in the future, they would reduce their arsenals if the superpowers did so.<sup>60</sup> This superpower reduction, of course, has now occurred.) Says

Benjamin Frankel, editor of *Security Studies* and author of a forthcoming article on the pressures for proliferation, "I have no doubt that Germany and Japan<sup>61</sup> will have nuclear weapons by the end of the decade." With peaceful, democratic countries like these, he says, the best policy is to arrange for their orderly entry into the nuclear club, rather than wait for a crisis to spur them into alarming sudden moves. Frankel calls this the "New York City public school solution" (i.e., if you can't keep kids from having sex, at least give them condoms to make it safer). Managed proliferation—limited to responsible nations with the money, scientific resources, and political stability to handle nuclear weapons properly—can foster peace by making some crucial powers more secure.<sup>62</sup> (One fears, however, the same result as in New York City.) The Pentagon drafted a paper under Paul Wolfowitz's signature that suggested that the US ought to try to prevent any other superpowers from emerging. This was widely criticized, but one supporter—Charles Krauthammer—suggested that the idea of German (or Japanese or other) nuclear powers in the world might be dangerous.<sup>63</sup> (The German government was, of course, not pleased.<sup>64</sup>) "NATO is crucial to prevent nuclear proliferation, especially in Germany," a British speaker said. "It's the American [nuclear] guarantee that removes the need for Germany, or for Japan, to have their own nuclear weapons. Does [President] Clinton understand this?"<sup>65</sup> Many people agree that Washington will at least retain a strong interest in a balance of power and an even stronger interest in maintaining a security umbrella credible enough to preempt any leanings in Germany (or Japan) toward nuclear-power status.<sup>66</sup> But the test ban will only decrease the credibility of US weapons and thus decrease their ability to provide an extended deterrent to such countries as Germany. The result, ironically, may be to increase German interest in nuclear weapons.<sup>67</sup>

**Threats.** The traditional threat of large attacking forces is, of course, no longer extant in Europe.<sup>68</sup>

But in many ways the Cold War was an anomaly. The West no longer enjoys the luxury of focusing on a huge, monolithic force at its doorstep, an ominous presence that ensured the cohesion of the Western alliance and gushing investments in military defense. Instead, Europe and the Middle East are studded with "zones of potential instability" that include the Balkans, Iraq, Turkey, the southern Mediterranean, the Persian Gulf as well as parts of Eastern Europe.<sup>69</sup>

NATO now speaks of "risks" only,<sup>70</sup> but the US role remains unclear.

**A Russian Threat?** It is not hard to see threats arising from Russia, which has recently shown nationalistic interests (i.e., on Serbia, Baltic troop withdrawal, and arms sales to third world nations). "Russian concerns about regional hegemony [are] sometimes at the expense of US interests."<sup>71</sup> Aside from these relatively minor issues, "a worst-case scenario posited by [Russian reformers is a Russia] trapped in the same political-economic trends as Germany in the 1920s."<sup>72</sup> But most dangerous is the problem of a "natural" tendency to get "more bang for the buck" by using nuclear weapons where the West might not see any rationale at all. Thus Pavel Y. Felgenhauer, a Russian military analyst for the Kushan daily *Sigodniya*, points out that Russian military expenditures are climbing again—especially in the nuclear arena—and that arms production in 1993 has increased.<sup>73</sup> Russian officers talk of aiding Armenia against Azerbaijan, yet with an "unready Russian military," the attractiveness of using nuclear weapons arises.<sup>74</sup> Smaller—or "hollow"—forces may actually increase Russian reliance on nuclear weapons.<sup>75</sup> "The problem with the Russian military is that the only battle ready force is the nuclear weaponry," notes Felgenhauer.<sup>76</sup>

## Stability/Power Issues

It is difficult to separate the issue of the future of NATO from the issue of a US nuclear commitment to Europe. Thus, we must now examine the basic question of whether NATO will continue in its present (or similar) form.

The major point of departure is about the problem of forum shifting, mentioned earlier. This suggested that the multiplicity of defense-related forums (e.g., NATO, Conference on Security and Cooperation in Europe [CSCE], UN, and WEU), rather than allowing each forum to specialize in a specific type of security issue, in fact merely allows a nation to shift from one forum to another if it does not achieve its goals in the first one. This does not increase efficiency; rather, it increases—even encourages—inefficiency and inaction. Bosnia, of course, could be the prime example. Thus, assuming the necessity of a single security organization, we shall examine here whether NATO ought to be that organization.

NATO, although seen by some people on both sides of the Atlantic as outdated,<sup>77</sup> is in fact a good candidate for the nuclear structure and doctrine suggested here,<sup>78</sup> as both Europeans and Americans are beginning to realize.<sup>79</sup> Assets, new strategy, and leadership are unique advantages.<sup>80</sup> Yet, the legacy of the clear implications of the Tarnoff Doctrine and the lack of US leadership or interests threaten the future of the alliance.<sup>81</sup> This, of course, raises the question of European goals and the ways they relate to the US interests noted above.

## European Goals

European goals are, of course, hard to define because Europe is not a singular entity. In general, the major European nations want a strengthened European pillar; smaller nations want a US presence; and flank states are wary of alternative

institutional solutions (e.g., CSCE, EC, and WEU). Clearly, there is a desire to retain an ability to react to disruptive events.<sup>82</sup> Yet, the old cold war fears of "abandonment-entrapment"<sup>83</sup> still exist. Thus, the fear of being "used" by the US in its global responsibilities, a cold war problem, still remains. The use of NATO-assigned forces in the Gulf War and the associated "fire-brigade" thinking<sup>84</sup> are reflective of this. Yet, these issues are symptoms—not essential questions.

The real issue, then, must be seen in the context of the need for, as noted above, a single security organization—a single decision-making forum—for Europe. If this article is correct in seeing the potential for nuclear weapons to be the integrative factor that holds the alliance together, the real issue is the usefulness of nuclear weapons in the new international context. We shall examine the two opposing views and then the views of each major actor.

As noted above, it is a policy of the current administration to "deemphasize" nuclear weapons in US foreign and defense policy. A view in Europe is similar, although the "seat at the table" argument for retention of nuclear weapons is still strong.<sup>85</sup> Additionally, defense elites in France and the UK still see some military necessity for nuclear weapons.<sup>86</sup>

*Bundeswehr* (German armed forces) officers tend to denigrate the concept of conventional deterrence.<sup>87</sup> The point, then, is that if a threat is seen, if the German military is seen as weak, and if conventional deterrence is tried, then the need for a nuclear guarantee from a European perspective will only increase. This returns us to the major theme of the necessity of alliance politics and interest aggregation, all based on the overriding necessity of seeing NATO in a political light. In fact, the old cold war nuclear deterrence problems seem to refuse to go away.

In the context of a German need for nuclear protection and the perceived unreliability of the present US administration, the possibility of an alternative guar-

antee arises. One such possibility is either a French-British nuclear force or, similarly, such a force in the context of the WEU.

Britain and France certainly have held talks on nuclear weapons cooperation, in particular over the development of the free-fall bomb replacement.<sup>88</sup> In support of this type of cooperation, Defense Minister Pierre Joxe has emphasized the special relationship between his country and Britain, "two old European nations" sharing a "joint destiny." WEU cooperation since the Dunkirk Treaty is often recounted in this context.<sup>89</sup>

What this means is at this time impossible to say. Is a "WEU Nuclear Planning Group" an option? Will France and Britain accept some sort of German "control," even if only semantic at best, over their weapons? It has already been mentioned that Mitterand has spoken of this issue, although no more was heard of it from Paris. Would Germany accept such an "extended deterrence" for its own interests? These questions can remain only questions for now, but they suffice to show that some Europeans are thinking of alternatives to a US deterrent.

## Nuclear Theology

A relevant question is, Who wants whose nuclear weapons in Europe and why? One may be excused for initially observing that the US thinks the Europeans want them and thus supports them, and that the Europeans think that the US wants them and thus support them. As it turns out, this "confusion" may not be not so bad because it does encourage "alliance thinking" and interest aggregation among otherwise disparate nations.

We have seen that the present US administration is trying to "deemphasize" nuclear weapons but still maintain them; that the US military services are split on the issue; that France and Britain still are quite interested in them but are worried

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
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about their costs; that Germany is still, as ever, extolling the US deterrent but is worried about a shift in public opinion; and that NATO sees them as a "last resort." All this, then, is quite old. What is the impact of new conditions on the old issues? This article has tried to suggest that there are interests in each country that want or do not want nuclear weapons. To say that this will or will not result in a national decision is beyond the scope of this article. For now, it can only be concluded that there are strong pressures in Europe for a nuclear deterrent and that the possibility for such a deterrent is looking increasingly unlikely to many observers.

### *Risk Sharing*

A theme of this paper has been the necessity of maintaining the primacy of politics in the alliance. Much of the above material has suggested that there is a wide diversity of opinions on the threat, military needs, acceptable costs, and public opinion. Yet, the diversity itself suggests a direction for a solution. There is a tendency to throw the baby out with the bathwater and jettison the old necessity of the primacy of politics of the cold war since the latter is over. But the necessity of a "political alliance," as suggested earlier, was not a function of the specific conditions of the cold war, but rather was a necessity of a coalition of nations united for a common purpose. If this is accepted, then the real question becomes, What *mechanism* can be used to further this goal today, given the changed conditions in Europe and the rest of the world? It will be suggested that the answer will include a nuclear role for NATO into the indefinite future that would both respond to actual needs and perform an integrative function.

As in the cold war, this integrative function requires visibility that the present nuclear systems do provide but that sea-launched systems do not offer. Further,

the deployment of nuclear systems from the US likewise offers the same nuclear protection but not the visibility that alliance integration requires.

As is the theme of this article, the US and Germany are the key nations involved in this calculus. The US is the only nation capable of producing needed nuclear systems, and Germany is the nation that can provide the centralizing influence in Europe. As the major nonnuclear nation, Germany can demonstrate the ability of a country to have major influence without nuclear weapons. No longer the "frontline state," Germany is in a position to "return the favor" done for her for some 45 years: states not directly threatened still acting as nuclear-involved nations and sharing the risk of nuclear retaliation by enemy states.

To see how such alliance integration through the sharing of risks—nuclear risks—can take place, two examples will be used which in fact are based on the two geographical threat areas—the East and the South.

A key is to remember another lesson of the cold war: the role of nuclear weapons was often as political as it was military, perhaps more so. Some sort of guarantee to East Europe, obviously a disputed topic on both sides of the Atlantic, could be addressed by nuclear weapons, as could the threat to Europe from the South:

If NATO needs a new mission, it could find it by admitting Poland, Hungary and other East European nations. This would protect these nations from the threat of chaos in the former Soviet Union. More important, it would do for them what NATO first did for the West Europeans after World War II—provide military security while they rebuild their economic and political lives.<sup>90</sup>

The critique of such a guarantee to East Europe often involves the specifics of against whom it is directed and exactly how it is to be implemented. But another lesson of the cold war is that many plans and programs (and understandings) can be accommodated under the broad tent of

nuclear deterrence. Oftentimes the presence of ambiguity was an advantage—not a disadvantage—of deterrence; the stated policy did not remove ambiguity.<sup>91</sup> The unknown can often work to the benefit of the one deterring. It is true that, as noted above, such linkage can drag one side or the other into commitments not intended,<sup>92</sup> but this must be balanced against the goal of alliance unity and the benefits of that on a global scale.

The key is that an interest exists in preserving alliance unity, and a nuclear force structure exists that can serve as a vehicle for that unity. It makes sense to marry the two elements. The key, again, is *shared risk*, a concept from the cold war but very applicable today. An example will illustrate how this could function for two ends: to solve a military problem and to aid in alliance integration for larger, political purposes.

A hypothetical scenario of a southern threat (using, for instance, Scuds or similar delivery vehicles and weapons of mass destruction—be they chemical, biological, or nuclear) could elicit a response from Europe, perhaps using the NATO structure. Such a response may involve the use of the remaining nuclear weapons stationed in Europe. The question, then, is whether the alliance solidarity that allowed 16 nations to put their national existence at risk for the sake of the defense of Germany during the course of the cold war still exists. Thus, if the frontline state is no longer Germany but, say, Turkey or Spain, will NATO show the same risk sharing by involving all or most of the NATO nations in a response—for instance, a deployment of nuclear weapons and delivery systems to the threatened area? (Nonnuclear nations could easily identify themselves with the nuclear response by, for example, providing transport or security or other logistic aid to the operation.) This is the essential question that we must address to see what future nuclear deterrence has in Europe. It is the conclusion here, based on the

data presented in this article, that Europe does desire such a deterrent capability. Thus, given the lack of a European will to develop its own nuclear deterrent (not all that bad from an American perspective), the US must in fact maintain its present forces in Europe.

The very substantial issue of what kind of force will be used in this instance and what requirements are necessary to maintain a “credible deterrent” will not be addressed here. Some observers have noted that the present force, sufficient for an “existential deterrent” directed to the East, is wholly inadequate for a deterrent to the South, where some of the old criteria of the cold war deterrents still apply (e.g., flexibility, survivability, and presence). However, the European public now is clearly not receptive to any talk of an *increase* in the nuclear force structure. This must wait a “decent interval” for discussion.

Yet, this is not to say, as some people in Europe do, that the issue ought not to be raised at the public level at all. There is a strong feeling among European defense elites that nuclear issues are not a proper topic for the masses; they seem not to have learned the lessons of the 1980s in Europe. If in fact the defense establishments want a nuclear deterrent against the South in the future, they must soon begin to address the issue publicly. This is particularly true if some of the old criteria for robustness of deterrence are desired in a deployable force for Europe in the 1990s and beyond, since this may require restructuring or even an increase in the number of weapons and a change in the type of delivery systems.<sup>93</sup> Having said that, we must still examine one more important reason for the maintenance of the present force structure.

### **Counterproliferation**

We have seen that the main point for the US is to maintain the primacy of the political nature of the alliance. This involves



insuring that real interests are articulated by preventing forum shifting and by recognizing US leadership deficiencies. We have seen that threat perceptions still exist, despite the end of the cold war, and that major nations in Europe still see nuclear weapons as a tool of defense policy, despite public opinion that is sometimes to the contrary. As noted earlier, we must now concern ourselves with the question of whether we should let sleeping dogs lie and ignore the nuclear issue (after all, it is not now a major public issue) or whether we should address the strategic problem. To answer this question, we must address the issue of the major threat today—nuclear proliferation.

A major goal of the US must be to realize the advantages that it *presently* possesses. *This is a way to make virtue out of necessity in terms of a present US leadership deficiency.* If positive action on Bosnia is impossible for the US now, perhaps a maintenance of the nuclear status quo, with all its benefits, will be easier since no new initiatives are needed on the part of the US. It is oftentimes easier to maintain a situation than it is to change it. *Thus, this is a reasonable goal with the real constraint of the present US "leadership deficit."*

We may tend to think that the new world order offers a tabula rasa for a new international system. If this is so, we need to realize the dangers of potential changes in the new world order. Proliferation of weapons of mass destruction—among them nuclear weapons—has clearly been identified as a threat to the US by both the Bush and Clinton administrations.<sup>94</sup> The current situation may thus offer the US an optimal solution: do nothing, and reap the benefits of a major policy initiative that contributes much to US goals in the European arena.

In fact, one of the best counterproliferation strategies available is to contain the nuclear strategies within the present *system* or paradigm of how one uses nuclear weapons (deterrence, war fighting,

alliances, etc.).<sup>95</sup> The present *global nuclear system* encompasses the US, its allies (France and the UK), and the former Soviet Union—even China. All these nations already have bought into a "system" of nuclear weapons that encompasses their maintenance, storage, protection, security, enabling, strategy, and—most important—reluctance for use. To exit this system for another is to lose the "control" that being the senior partner in the system for 45 years has brought and to exit the known for the unknown—and, potentially, the uncontrollable. *On the surface of it, to withdraw US nuclear weapons from Europe may seem like a good way to aid a counterproliferation strategy. But in fact what it may well do is remove US leadership and thus destroy the best control strategy in existence—or even on the horizon.* Problems in the former Soviet states, in Europe itself, in third world nations—all possibly associated with the coming Nonproliferation Treaty review—may drive the US administration, perhaps in response to a weak domestic program or the need to please a wing of the president's party, to make a show of support for nonproliferation, perhaps by removing some or all of US nuclear weapons from Europe. The point learned here is that such a strategy would not aid nonproliferation but in fact it may well, by decreasing US control, encourage proliferation of nuclear weapons.

This article has shown that there are pressures (on both sides of the Atlantic) for the US to weaken or remove its nuclear commitment to Europe and that on the surface such ideas have some merit. But we have also seen that there are strong currents of a remaining interest in nuclear deterrence in Europe. The conclusion, though, is that to remove weapons would only make the world a more dangerous place; in fact, the present nuclear levels, although low, ought to be maintained.<sup>96</sup> Senator Lugar suggests a new "trans-Atlantic strategic bargain"<sup>97</sup> between the US and Europe, and this

must take place. But in the process, it is in the US interest to maintain control of the global nuclear system that is already in place. "Nothing goes in Europe without the Americans," one European government official said.<sup>98</sup> Given present problems of US leadership in the world, this is an existing advantage that the US cannot ignore.

## Conclusions

We have thus seen that the maintenance of nuclear weapons in Europe can meet the US goals of alliance integration and counterproliferation. Likewise, we have shown that alternative—British and French—nuclear weapons do not appear to be available for either of those functions. Since the maintenance of present US systems in Europe demands only the status quo and not any active change that would demand US active and respected leadership, the US—with its present leadership deficit—would be wise to take advantage of the situation and not withdraw its systems from Europe.

The use of NATO as a vehicle for this integrative function of nuclear weapons has been shown to be useful as a method of forced bargaining to avoid the problem of forum shopping by frustrated nations seeking their individual interests. The political nature of nuclear weapons, with their high tolerance of ambiguity for deterrent strategy, also adds to the benefit of such a strategy.

Germany, for its part, as we have seen, has demonstrated that it fears threats (of "instability") to the East (if not directly from the South) and that it does not put a great deal of faith in the concept of a conventional deterrence. Further, if some of the East European nations enter NATO at some higher level of participation, as might be expected, then such a necessary guarantee can most easily be made credible with nuclear weapons and strategies. Only the US, most Germans realize, can

provide such military capabilities. The element of risk sharing with reference to the threat from the South will demand that Germany share the risk of nuclear vulnerability and thus pay back its southern allies who supported her in the cold war. This may involve activities such as military exercises that demand German participation in nuclear weapons movements as a show of force. German political trends toward acceptance of "out of area" activities and a wider sphere of military interest support this trend. The apparent desires of German leaders to increase their participation as a world power will be aided by their close integration into the old Atlantic Alliance and the combination of freedom and integration that agreement to a common nuclear strategy will entail.

Also, the US counterproliferation goals are clearly shared by the German leadership—particularly with reference to the Eastern threat—and the advantages that accrue to Germany by continued participation in the US-led nuclear system in NATO can only reinforce Germany's other goals. Finally, we must reiterate the necessity of public support for such a continuation of the alliance nuclear strategy. Germany must realize that the maintenance of the status quo in nuclear policy is not a matter of letting sleeping dogs lie (i.e., since there is little reason to deal with a potentially divisive issue, it is better not to deal with it at all) but a matter of decisively going ahead with an integrative policy in the alliance using nuclear weapons, both for their political and military value to German security interests. If the US can take advantage of maintaining a status quo as a way to make virtue of necessity due to its leadership vacuum, Germany can count no such blessing. German defense elites must do what leaders get paid for: they must lead. The German public must be instructed about what Germany's real security interests are and what role nuclear weapons can play in achieving them. The already great

progress that the Kohl government has made in relation to out-of-area use of German forces is a substantial base upon which to build. Yet, further difficult work is required.

Clearly, then, the US goals of alliance integration and counterproliferation are compatible with Germany's wider and newfound security interests. But this necessitates the realization that the alliance is primarily political—a lesson

that needs to be relearned often. Thus, we can expect (and urge movement toward) a German transition to a gradual acceptance of the continuation, however slowly, of the old cold war strategy of "US first," despite very new conditions in the security environment. US military and political pressure to maintain the present nuclear force and (modified) strategy will aid in this effort. □

#### Notes

1. "The most difficult challenge to NATO unity may be matching a specific force structure to new strategic concepts." Gary L. Guertner, *NATO Strategy in a New World Order* (Carlisle Barracks, Pa.: Strategic Studies Institute, US Army War College, 1991), 22.

2. Klaus Kinkel, "Responsibility, Realism, Safeguarding the Future," *Frankfurter Allgemeine Zeitung*, 19 March 1993, 8.

3. Michael Brenner, "Multilateralism and European Security," *Survival* 35, no. 2 (Summer 1993): 141.

4. Volker Rühle, "Shaping Euro-Atlantic Policies: A Grand Strategy for a New Era," *Survival* 35, no. 2 (Summer 1993): 130.

5. Specifically, section 2, *Petersburg Declaration* (Bonn: WEU Council of Ministers, 19 June 1992).

6. Brenner, 143. Further, there is a "growing readiness of allied governments [to] permit their concerns for how status and political influence are distributed within the Alliance, rather than strict measures of utility, to determine the evaluation of policy choices." *Ibid.*

7. See Jacquelyn K. Davis et al., *The INF Controversy: Lesson for NATO Modernization and Transatlantic Relations* (New York: Brassey's, 1989), xff.

8. Barton Gellman, "Pentagon's 6-Year Plan Drops Controversial Goal; Early Tough Tone on Allies, Rivals Abandoned," *Washington Post*.

9. One observation: "Take NATO. To the Europeans, the alliance is the defense framework within which their democracies can flourish. This purpose is as valid today as ever. Support for NATO in Europe—even by the French—is nearly unquestioned. But the American attitude is changing. For Americans, NATO was a specific response to a specific threat—the Soviet menace. It had a job to do, and it did it. With the job done and the threat gone, NATO needs a new purpose to stay credible in American eyes." R. C. Longworth, "Atlantic Rift: Basic Differences Undercut U.S. Alliance with Europe," *Chicago Tribune*, 11 July 1993, 1.

10. Guertner, 1; and Rühle, 136.

11. "There has emerged an opposition to NATO that spans the political spectrum in the US, with the liberals arguing that the Europeans can provide their own defense, and the conservatives saying that a reduced threat ought to result in a reduced commitment to Europe." Rochelle L. Stanfield, "Under Europe's Umbrella," *National Journal* 22, no. 14 (7 April 1990): 826–31.

12. Brenner, 140.

13. R. C. Longworth, 1.

14. Brenner, 145.

15. Thus, "some two years ago, as the rest of the world celebrated the end of the Cold War and the success of Desert Storm, a confidential memo was circulated to China's senior cadres. The upheavals in Europe had, it said, a silver lining: the communist threat had bound America and Western Europe together, and the disintegration of the West would rapidly follow that of the Eastern bloc. The Chinese have a taste, born of history and doctrinal arrogance, for the long view. They must be staggered by the speed with which the Atlantic has been widening." Rosemary Righter, "What If America Takes a Back Seat?" *The Times*, 3 July 1993.

16. George Jones, "Major Tries to Keep Special Relationship Going with Americans: G7 Tokyo Summit," *Daily Telegraph*, 6 July 1993, 11; and Righter.

17. Such experience raises doubts about Europe's ability to seize the initiative in the transatlantic relationship, but many said they had to try. Without such an effort "there is a danger that the two sides of the Atlantic could continue to drift apart, with those officials directly concerned with managing the relationship reassuring each other that established commitments are being maintained, while the foundations on which those commitments rested continue to erode." "New Tactics in the Trans-Atlantic Game?" *National Journal*, 1 May 1993, 1053.

18. These revolutionary changes have also resurrected some of the concerns—and, therefore, some of the vocabulary—that animated relations between France, Germany, and Britain earlier in the century. Paul Gillespie, "Some of the Old Concerns Resurrected," *The Irish Times*, 9. The economic "foot in the door" argument has often been raised but is not particularly cogent; nevertheless, it is still a factor in European perceptions. See Michael Brenner and Phil Williams, *European Security and the United States: US Security Policy toward Europe in the 1990s* (Bonn: Konrad Adenauer Stiftung, 1992).

19. "The Atlantic, for 50 years the narrowest of oceans, is suddenly becoming wider. . . . This shift is more basic than the much-publicized disagreement between the Europeans and the Clinton administration over the Bosnia crisis, or a quarrel between trading rivals over world trade talks. Both are symptoms, not causes, of the problem. That problem is a matter of perception, a divergence in how the allies see the world that emerged from their Cold War triumph. After a half-century of viewing their world through similar 'Western' eyes, the U.S. and Western Europe are developing different visions of both the present and the future. . . . The future [is] not one of hostility, because Americans and Europeans have few serious quarrels, nor isolationism, because

the world is too interdependent now for that. Rather, it [is] something worse—an indifference to each other's problems, a breakdown in the routine dialogue across the Atlantic, a growing irrelevance in the institutions that keep the relationship alive." Longworth, 1.

20. On "alliance politics," see, for instance, Stephen Walt, *The Origins of Alliances* (Ithaca, N.Y.: Cornell University Press, 1987), or Kenneth W. Waltz, *Theory of International Politics* (Reading, Mass.: Addison Wesley, 1979), 168–69.

21. Brenner, "Multilateralism and European Security," 145.

22. Eberhard Wisdorff, "Alliance in Crisis," *Handelsblatt*, 11–12 June 1993, 2, in FBIS (Foreign Broadcast Information Service), WEU 93–112, 14 June 1993.

23. Briefing, Sen Richard Lugar, US Information Agency (USIA) Foreign Press Center, subject: The Future of NATO, 21 June 1993.

24. Will Marshall, president of the Progressive Policy Institute, a Democratic think tank, and an adviser to candidate Clinton, quoted in "Searching for the New World's Order," *National Journal*, 14 March 1992, 632.

25. François Heisbourg, who recently participated in a Council on Foreign Relations study of European unity, quoted in *ibid.*

26. Les Aspin, *The Bottom Up Review: Forces for a New Era* (Washington, D.C.: Government Printing Office, 1993).

27. Stephen Rosenfeld, "NATO's Last Chance," *Washington Post*, 2 July 1993, 19.

28. Quoted in Viola Herms Drath, "Multilateralism," *Handelsblatt*, 23 June 1993, 2.

29. This force numbered 1.6 million men, with 150,000 in Europe. Barton Gellman and John Lancaster, "Army Secretary Defies Congress on Troop Reductions in Europe," *Washington Post*, 10 October 1992.

30. "Aspin Must Face Up to the New Perils of Peace," *Jane's Defence Weekly*, 16 January 1993, 16; and Peter Grier, "Pentagon Aims to Define Future US Force Needs," *Christian Science Monitor*, 30 June 1993, 6.

31. Aspin.

32. Barton Gellman, "Clinton's 1994 Defense Budget, Out Today. Meets Goals for Cuts," *Washington Post*, 27 March 1993.

33. Paul Greenburg, "Savvy Signal," *Washington Times*, 2 July 1993, F-1. Sen Sam Nunn (D-Ga.) noted of the Aspin budget, "We have been dealing with numbers grabbed out of the air." Barton Gellman, "Defense Budget 'Treading Water,'" *Washington Post*, 28 March 1993.

34. Thomas Ricks, "Defense Budget Defers Decisions on Weapons," *Wall Street Journal*, 29 March 1993, A4; and "Treading Water," *Bulletin of the Atomic Scientists*, June 1993, 3.

35. Jeane Kirkpatrick, "An 'Alice in Wonderland' Defense Budget," *Washington Post*, 5 April 1993. Similar observations have been made by Lawrence Korb ("Les in Less: When the Going Gets Tough for Clinton, Defense Secretary Aspin Just Gets Gone," *Washington Post*, 18 July 1993, C-2) and Anthony Cordesman ("Reduced Readiness Jeopardizes Aspin's Strategy for Defense," *Defense News*, 19–25 July 1993, 42). "There is no policy; all we see is double the cut promised in the campaign. This is a 'sentence first, evidence later' approach of Alice in Wonderland." Secretary Aspin outlined four dangers: regional threats, proliferation, failure of democratic reforms, and poor economic performance in America.

But one view is that "this is no threat nor strategy. It defines nothing; drives no forces." Kirkpatrick.

36. Guertner, 14.

37. Davis et al., xff.

38. See Gen John Galvin's comments in Guertner, 14.

39. "Bosnia is the most dramatic example. Europe wanted to show that it didn't need U.S. leadership to resolve the crisis in Yugoslavia. But it couldn't do it. Then the United States offered to lead, but only in ways that would limit the exposure of Americans to risk. The Europeans wouldn't buy it. The result has been continuing carnage and a humiliating defeat for the West." "Political Pulse—Trouble Abroad? Problems at Home," *National Journal*, 3 July 1993, 1736.

40. "New Tactics in the Trans-Atlantic Game?" 1053.

41. "At root is a sense that the United States, weary and debilitated, is abdicating its role of world leadership, pulling back at a time when the alliance structure of the last 50 years seems to be unravelling before our eyes." Ambrose Evans-Pritchard, "America Loses Faith in a Way of Life," *Sunday Telegraph*, 11 July 1993, 23.

42. In remarks to reporters on 25 May that were not originally intended for attribution, Tarnoff—one of Secretary of State Christopher's closest aides—stirred a tempest by speaking frankly about increased sharing of responsibilities by US allies: "We've said that before, but didn't mean it the way we mean it now." Christopher hurriedly denied that there is a new unwillingness to engage overseas. "Make no mistake, America will lead," he declared in a Minneapolis speech a few days later. "Hot Spots," *National Journal*, 19 June 1993, 1547.

43. "Foreign Policy Focus—Lugar's Lonely Watch," *National Journal*, 31 October 1992, 2515.

44. The Clinton decision not to concern the US with Bosnia contradicted a pledge he made last February to bring "the full weight of American diplomacy to bear" on salvaging a unified Bosnian state. Thom Shanker, "The Blame Game Begins: Why the West Failed in Yugoslavia," *Chicago Tribune*, 22 June 1993, N1.

45. Clinton was "held up to ridicule" by the Bosnian events. "Clinton 'Snubbed' by Europe on Bosnia," *Gazet van Antwerpen*, 13 May 1993, 2, in FBIS, 14 May 1993, 2. Military commanders were dismayed by his plans. He was opposed by NATO commanders for lack of planning and lack of a political concept. Eberhard Wisdorff, "Alliance in Crisis," *Handelsblatt*, 11–12 June 1993, 2, in FBIS, WEU 93–112, 14 June 1993. The State Department was not pleased with his approach. Secretary Christopher was rudely rebuffed by European leaders when he sought support for Clinton's "lift and strike" proposal to arm Bosnia's Muslims and bomb Serbian artillery positions. But observers noted that the failed approach had been adopted by the White House over the secretary's objections. "Hot Spots," 1547. Further, the international community seems not to have been impressed with the lack of response to the air strike threat.

46. "The tendency was to put US policy 'on hold since May' when Clinton's policy failed. Now he is in the uncomfortable position . . . of trying to match an old failed policy with a new, worsening situation." Daniel Williams, "US at Dead End in Bosnia," *Washington Post*, 22 July 1993, 1.

47. "America Loses Faith in a Way of Life," 23. The "White House, which feeds on the Little Rock mentality, has not heard of Otto von Bismarck, who called policymaking the art of listening to God's movements through history, jumping behind him, and holding onto his coattails." "Impact of US 'Isolationism' Assessed," *Middle East Intelligence Report*, 1 July 1993; Jerome Grossman, "Refocus America's Military Might," *Chicago Tribune*, 1 July 1993, 23; and "NATO Must Change," *Daily Oklahoman*, 19 July 1993, 8. Peter Rodman, former head of policy planning at the State Department, says that "in handling the Bosnian crisis Mr Clinton has essentially ended up with the Bush policy of cautious inaction, but only after first making America look

ridiculous and revealing himself to be a man whose bluff can be called. 'At some point, we're going to pay for his mistakes, we're going to see a strategic disaster'. "America Loses Faith in a Way of Life," 23.

48. Rep Robert Dornan (R.-Calif.), "Trial Balloons and Military Readiness," *Washington Times*, 14 July 1993, C-4. Secretary Aspin was similarly handicapped. He is "best known for discussing issues at length and offering options rather than conclusions." "Decision Time Looms for Aspin," *Jane's Defence Weekly*, 24 July 1993, 23. His management style has been described as "back of the envelope" ("Savvy Signal," F-1), leading to repeated questions about policymaking in the Department of Defense (Bill Gertz, "Aspin: A Manager in Search of a Team," *Washington Times*, 21 July 1993, 1; Paul Quinn-Judge, "Defense Panel Backs Harvard Professor: More Woes Cited for 2d Nominee," *Boston Globe*, 12 June 1993, 6; and Al Kamen, "A Bump along the Way Impedes Progress on Pentagon Confirmation," *Washington Post*, 11 June 1993, 19), including Aspin's basic leadership capabilities (Barton Gellman, "Rumblings of Discord Heard in Pentagon," *Washington Post*, 20 June 1993, 1). See also Rosenfeld, 19; and Dornan.

49. Guido Despiegelaere, "The Fortress Is under Fire," *Knack*, 23 June 1993, 60-62, in FBIS, WEU 93-139, 2.

50. This may result in "over self-congratulation" that was seen in Brussels during the Yugoslavian crisis, as no real decision was taken. See Brenner, "Multilateralism and European Security," 149.

51. Frank Gaffney, Jr., "Clinton's Not-So-Hidden Nuclear Agenda," *Washington Times*, 30 March 1993, F3.

52. "Even in the hands of a more obviously internationalist administration, the task of persuasion would be harder now than in 1949. It is easier to unite against an evident threat than to join in the difficult and expensive project of managing European instability. New thinking is needed, as fundamental today as when, more than 40 years ago, the world was confronted by nuclear weapons. An American Secretary of State who sees in Bosnia only 'a humanitarian crisis a long way from home, in the middle of another continent' is not about to provide it. Ominously, the White House did not dissociate itself from Warren Christopher's verdict." Righter.

53. *Ibid.* "Europe, too, will demand Clinton's attention. During the transition, the President-elect has been stingy with his time for Western European leaders. But the members of the European Community are struggling on their path to political and economic unity and will very likely be looking to the United States for a stabilizing influence. At the same time, there might be a loosening of traditional political ties to Europe, caused in part by an increase in economic tensions. One fact is unavoidable: Clinton was not born during World War II, the event that crystallized Bush's world view. Clinton necessarily will view Europe through different eyes." "Foreign Policy Focus—A Study in Contrasts," *National Journal*, 2 January 1993, 49.

54. "The president's behavior raises the question of whether he is prepared to carry out measures of what is known as collective self-defense against aggression. . . . The world's growing concern about the reliability of American guarantees is having startling consequences. It is reported, for example, that a number of 'moderate' states in Central Europe—including, by some reports, Poland—are attempting to buy nuclear weapons from Ukraine or Uzbekistan." Eugene Rostow, "Prevent Nuclear War. Invade Yugoslavia," *Wall Street Journal*, 28 April 1992.

55. Brenner, "Multilateralism and European Security," 147.

56. Lugar briefing.

57. Quoted in "US Official Affirms a 40% Troop Cut in

Europe," *New York Times International*, 30 March 1993.

58. Quoted in "Aspin Must Face Up to the New Perils of Peace," *Jane's Defence Weekly*, 16 January 1993, 16. "William Wallace, an Oxford Professor, warns that the U.S., as it gives up leadership, is counting on Europe to take the initiative on trans-Atlantic relations. West Europeans can no longer wait for the U.S. to propose ways and means of reshaping trans-Atlantic relations. . . . They have no alternative but to search for an agreed redefinition themselves. But since Europe seldom seems capable of doing this, the result could be more and more drift." "New Tactics in the Trans-Atlantic Game?" 1053.

59. Stephen Chapman, "How to Live with the Coming Spread of Nuclear Weapons," *Chicago Tribune*, 27 July 1993, C-3.

60. Jim Hoagland, "When to Scrap the Frappe?" *Washington Post*, 2 July 1992.

61. P. M. Muazawa pointed out the possibility of the need for a Japanese deterrent in the future. "Japan's Nuclear Program," *Washington Times*, 16 July 1993, F-2. See also T. R. Reid, "Japan's Shift on A-Pact Raises Concerns Abroad," *Washington Post*, 15 July 1993, 22.

62. Quoted in Chapman, C-3.

63. Charles Krauthammer, "What's Wrong with the 'Pentagon Paper'? It's an Impressive Blueprint for the New World Order," *Washington Post*, 13 March 1992.

64. Steve Vogel, "CIS Central to Bush-Kohl Talks, Trade, U.S. Troops in Germany Also Expected on Weekend Agenda," *Washington Post*, 21 March 1992.

65. Longworth, 1.

66. Righter.

67. Charles Krauthammer, "Test Ban Trap," *Washington Post*, 16 July 1993, 19.

68. Philip A. Karber, "Conventional Arms Control Options, or Why 'Nunn' Is Better than None," in Uwe Nerlich and James A. Thomson, eds., *Conventional Arms Control and the Security of Europe* (Boulder, Colo.: Westview Press, 1988), 174.

69. William Drozdiak, "NATO Chief Stands Down with Words of Caution: Galvin Pushes to Keep Strong Forces Intact," *Washington Post*, 2 May 1992.

70. Hoagland.

71. Daniel Williams, "Russia Wary of Following US Lead on Policies," *Washington Post*, 2 July 1993, 26. "Additionally she has shown signs of cheating on arms control agreements [on nuclear fuel]" (Rowland Evans and Robert Novak, "Nuclear Renege," *Washington Post*, 31 March 1993, A19) and on Conventional Force Europe Treaty inspections ("Aspin Must Face Up to the New Perils of Peace," 16).

72. Guertner, 1.

73. Cited in Rostow. See also "Russia Will Spend More on Weapons," *Jane's Defence Weekly*, 5 December 1992, 5.

74. Rostow.

75. Stephen Blank, professor at the Strategic Studies Institute of the US Army War College, doubts that the country that rotated more than 1 million soldiers through Afghanistan could now field and supply 14,000 troops in the Balkans. "I don't think they are capable of conducting a division-size operation." Quoted in John-Thor Dahlburg, "An Army Besieged by Turmoil," *Los Angeles Times*, 18 July 1993, A1. "These armies are combat ineffective," says a Western military attaché in Moscow. "Russia cannot even man its border posts; faced with a threat, it may be tempted to reply with a small nuclear strike." Yeltsin plans to reduce the military to 1.5 million from 2.5 million now and 5 million in the 1980s. Adi Ignatius, "Russia Now Fields a Potemkin Military," *Wall Street Journal*, 2 July 1993, 4. See also Paul Quinn-Judge, "US, Russia Strategists See Place for 'Mininukes'," *Boston Globe*, 12 July 1993, 1.

76. Quoted in Ignatius, 4.

77. "The basic critique of Western policy in former Yugoslavia was spelled out by François Heisbourg, the former head of London's International Institute for Strategic Studies, and Pierre Lellouche, adviser to French Gaullist leader Jacques Chirac. . . . The European-American alliance is irrelevant to post-Cold War conflicts in Europe. . . . Even stronger were comments by Jonathan Eyal, director of studies at the Royal United Services Institute in London, who said NATO will lose all credibility if it 'continues to maintain huge arsenals against [a Communist enemy] that supposedly no longer exists, but proves unable to deal with the continent's real wars.'" Shanker, N1.

78. "NATO still has many uses. It remains the only institutional pipeline for day-by-day U.S. influence on European affairs. It provides a context within which a reunited Germany can grow stronger without threatening its neighbors. If the Western allies want to take joint military action, NATO is still the only game in town." Longworth, 1. Manfred Woerner has called it an "equilibrating force for Russia," in William Drozdiak, "NATO Is Forced by Events into More Assertive Role," *Washington Post*, 28 March 1993, A24.

79. The US can uniquely provide intelligence, communications, strategic lift, all weather aviation, carrier battle groups (CVBG), and amphibious capability. Drozdiak, "NATO Is Forced by Events into More Assertive Role," A24. See also Rosenfeld, 19. The problem of a mission is critical. Rosenfeld, 19. Both strategy and forces are seen as deficient. "WEU Wants Overhaul of Atlantic Alliance with US," *Reuter Library Report*, 15 June 1993.

80. "New Tactics in the Trans-Atlantic Game?" 1053. The end of NATO would "be a disaster for the US and the West, leading to the fragmentation of Europe, hostility and arms races among nations, and ethnic conflicts that will swell refugee streams and hinder European economic development, and a decline in world economic growth that will damage the US economy." Morton Krondracke, "NATO's Vital Signs," *Washington Times*, 16 July 1993, F-3. Gen John Galvin noted that "we have to learn a lesson from what we've seen happen here in Bosnia, and that is that first of all, NATO is needed when there is a question of response to crisis in Europe." House Armed Services Committee, *Policy Implications of US Involvement in Bosnia*, 25 May 1993. Additionally, NATO infrastructure is unique in its capabilities. Rosemary Sawyer, "Don't Shortchange NATO, General Says," *European Stars and Stripes*, 27 July 1993, 3; and Guertner, 5.

81. Righter. The Europeans have noted such US headlines as "Europe, Our Former Ally" and *Newsweek's* labelling of European ambitions as "grotesque." A parallel thought is that the US and Russia no longer have a vital interest in Europe. Chapman, C-3. See also House Armed Services Committee, *Policy Implications of US Involvement in Bosnia*. "The initiative taken in Copenhagen by Kohl in supporting the rearming of the Bosnian Muslims took up a US proposal. Washington may well be re-evaluating the 'special relationship' as it comes to terms more with a strengthened Germany. President Clinton has not forgotten the role played by Mr Major's party in supporting his Republican opponents during last year's elections." Gillespie, 9; and Despiegelaere, in FBIS, WEU 93-139, 2. Along this line was "the shrug heard 'round the world'" when Secretary of State Christopher said that "American interests overseas can be found only in Russia and its periphery, and in the Middle East—but nowhere in the belly of Europe despite the NATO partnership. . . . The statement contradicted a pledge he made last February to bring 'the full weight of American

diplomacy to bear' on salvaging a unified Bosnian state." Shanker, N1.

82. Citing the Gulf War coalition, the self-described "guarantors of international order" affirmed the international community's ability to act together "to restore international peace and security and to resolve conflict." Such cooperation, they declared, could be brought to bear "wherever danger and conflict threaten, or other challenges must be met." George C. McGhee, "'Balance of Restraint' in an Unsettled World: How the Globalist Reality Can Replace America's Multipolar Strategy," *Washington Post*, 12 April 1992. (McGhee was undersecretary of state for political affairs in the Kennedy administration and served as US ambassador to West Germany and Turkey.)

83. See Davis et al., xff.

84. George Wilson, "NATO Commander Envisions 'Fire Brigade' Role," *Washington Post*, 5 December 1990, 29.

85. A WEU Defense Committee report stated that, "increasingly, nuclear weapons are seen, not as solutions to certain security problems, but as serious problems in themselves," calling for a European debate on the role of European nuclear weapons. "WEU Wants Overhaul of Atlantic Alliance with US"; and Catherine M. Kelleher, "Short-Range Nuclear Weapons: What Future in Europe?" *Arms Control Today* 21, no. 1 (January/February 1991): 19. Still many people hold that "no nukes is good nukes." Ian Davidson, "No Nukes Is Good Nukes," *Financial Times*, 12 July 1993, 30; and Martin Woollacott, "Odd Games Nations Play with Their Nuclear Weapons," *Guardian*, 14 July 1993, 18.

86. "Extension of Moratorium 'Grave Blow' to French Deterrent," *Le Quotidien de Paris*, 6 July 1993, 5; in FBIS, WEU 93-130, 38; and "The Fight Begins for the Few," *Jane's Defence Weekly*, 5 September 1992, 50.

87. A conference at Ebenhausen, Germany, in 1988 concluded that there was "no such thing as 'conventional deterrence'." Richard Bitzinger, *Reconstructing NATO Strategy for the 1990s: A Conference Report*, Rand Report no. R-3803-FF (Santa Monica, Calif.: Rand Corporation, 1989), 24. For instance, Gen Klaus Naumann has written that "history teaches: conventional deterrence never succeeded in preventing war." Klaus Naumann, "The Forces and the Future," in Stephen F. Szabo, *The Bundeswehr and Western Security* (New York: St. Martin's Press, 1990), 174. Similarly, Adm Wellershof (a former inspector general) claimed that "the history of war is . . . the history of the failure of purely conventional deterrence." Interview with the *Süddeutsche Zeitung*, no. 82 (9-10 April 1980): 11.

88. Peter Beaumont and Colin Smith, "USA: Clinton Puts Britain in Atom Chaos—15 Month Moratorium a Snub to Britain," *Reuter Textline*, 4 July 1993.

89. "Two-by-Two: The French Way to European Defense," *International Defense Review* 26, no. 3 (1993): 189.

90. Longworth, 1.

91. Guertner, 15.

92. This was a theme of *Discriminate Deterrence*, a report by Fred Ikle and Albert Wohlstetter (Washington, D.C.: Department of Defense, 1988), 2, 8, 30, 33-35.

93. For instance, the development of a standoff weapon to aid in penetration may be necessary. We may tend to forget that an inability to penetrate an air defense network may well make a deterrent worse than useless—a "called bluff" that merely causes more aggression.

94. Ken Adelman, "Compared to Other Threats, Nuclear Arms Tops the List," *Washington Times*, 30 June 1993, G-3.

95. Col Gordon Gage (USAF) was an articulate spokesman for this view within NATO and Supreme Headquarters Allied Powers Europe.

96. This conclusion is in accordance with a Strategic Air Command study conducted under the Bush administration (which also contained many later Clinton appointees). Quinn-Judge, 1.

97. Quoted in Rosenfeld, 19.  
98. Quoted in Longworth, 1.



# N E T · A S S E S S M E N T

**Arms Limitation and Disarmament: Restraints on War, 1899–1939** edited by B. J. C. McKercher. Praeger Publishers, 88 Post Road West, Westport, Connecticut 06881, 1992, 250 pages. \$29.95.

*Arms Limitation and Disarmament* might not be your first choice for a rainy Saturday afternoon with a six-pack of beer and a bag of pretzels. If, however, you want to do a little scholarly research on how we got to where we are today on arms limitations issues, it is well worth the money and the effort. McKercher is an associate professor of history at the Royal Military College of Canada and is an acknowledged expert on the political events of the era. His previous work includes *The Second Baldwin Government and the United States, 1924–1929* (1984); *Esme Howard: A Diplomatic Biography* (1989); and *Anglo-American Relations in the 1920s: The Struggle for Supremacy* (1991).

The book brings the topic into focus from a variety of perspectives and from several different outlooks. The unmistakable relevance for professional military officers is highlighted by this excerpt from one of the essays:

There is no doubt that the twentieth century has brought lasting changes to the way in which foreign policy is formulated and conducted. The experience of cataclysmic conflict and the increasing technological sophistication of weapons and the conduct of war has resulted in increased participation by unofficial social groups in foreign policy debates. Both this participation, and the way in which governments respond to it, can result in a fracturing of societal consensus on issues like arbitration, aggression, and disarmament. The interwar period illustrates well both the difficulties and the desirability of achieving societal consensus on security issues. The importance of the interwar British peace movement lies in the fact that its influence on the political agenda and legitimization of policies forced British gov-

ernments during the period to realize that societal consensus on security affairs could no longer be relied upon. (Pages 77–78)

A career officer interested in this complex process can glean a wealth of useful information from this impressive collection of essays. Understanding the historical roots of disarmament and what worked as well as what did not work can help set the stage for a serious analysis of the issues we face today on nonproliferation and arms limitation.

From the first essay on the background leading to the 1907 Hague Peace Conference to the last essay on the Second London Naval Conference of 1934–36, there are certain points that seem to keep presenting themselves. My impression from reading this book is that disarmament has relatively little to do with assessments of the adversary's military capability and a great deal to do with the domestic political agendas of the participants. While the technically relevant issues of verification are important to the process and the success of any conference, the comparatively mundane issue of maintaining trade-route access comes across as more important. Similarly, while the technological advances in arms production and tonnage for dreadnoughts are portrayed as delicate issues for diplomatic negotiation, the domestic and international peace movements are portrayed as viable and formidable political forces that must be dealt with.

The greatest strength of the book is also its greatest weakness if viewed from the perspective of the casual reader. The diversity of the essays and the academic credentials of the contributors are beyond question. The downside of this is that the book, as a collection of essays, has a definite style shift from chapter to chapter. The unifying thread from chapter to chapter is a historical chronology with which each author is free to perform analysis at the

level and to the degree of detail with which he or she is most comfortable.

Finally, I would be remiss not to point out that while the majority of the work deals with efforts to limit tonnage for seagoing vessels, the authors do recognize and acknowledge the changing nature of the negotiations with the advent of air power. They point out that Billy Mitchell's success in sinking the *Ostfriesland* in July 1921 and the USS *Alabama* in September 1921 caused even the most faithful disciples of Alfred Thayer Mahan to begin to take notice. In fact, the number of aircraft carriers each naval power would be allowed to produce was an issue at the Washington Conference of 1921-22. The advent of air power from this point on would complicate a process that had been a relatively simple matter of comparing raw tonnage within and among the classes of vessels.

Lt Col Albert U. Mitchum, USAF  
Maxwell AFB, Alabama

**The Proliferation of Advanced Weaponry: Technology, Motivation, and Responses**  
edited by W. Thomas Wander and Eric H. Arnett. American Association for the Advancement of Science, 1333 H Street, N.W., Washington, D.C. 20005, 1992, 330 pages.

Since its founding in 1848, the American Association for the Advancement of Science (AAAS) has taken a hard look at how scientists and science have contributed to improving "the promotion of human welfare." This is a tall order for any organization, but over the years, the AAAS (currently with a membership of 135,000) has tackled an array of complex topics ranging from what to do about arid lands and climate to finding ways to enhance the public's awareness and understanding of science and technology.

Recently, the AAAS sponsored the Seventh Annual Colloquium on Science and Security held at George Washington University. This book is a result of that academic meeting. Twenty-two authors comment on the stark realities of the alarming escalation of high-technology weapons and how the spread of those weapons has especially jeopardized the regional security of third world countries. As with any collection of essays addressing the complicated issue of arms proliferation, defin-

ing the immediate problem is relatively easy in comparison with the difficulty of devising an equitable solution all nations are willing to abide by. Only three commentaries (45 of 330 pages) focus on the tough issue of specifically what should be done to halt and control the global demand for more weapons of all types.

The book is filled with up-to-date information on weapon capabilities, how nations acquire advance weapons, and the amount of monies derived from arms exports. But one theme dominates: In spite of the demise of the Soviet Union and the collapse of communism in Eastern Europe, the world today is in a more precarious position than during the cold-war era. As long as nations continue to build up their arsenals of conventional, nuclear, biological, and chemical weapons, as well as missiles and advanced space systems, the threat will continue to grow. The sobering message is that the combination of weapons of mass destruction in the hands of unpredictable leaders increases the potential of an international crisis erupting without warning in any corner of the world in the 1990s.

In fairness to most of the writers, they do agree that arms proliferation leading to the use of force to settle disputes among nations is not the solution. Ideally, to reduce arms buildup and to deny nuclear weapons from entering the inventory of developing countries, the United Nations must step in and take the lead in pursuing a political policy embracing "multilateral mediation." As Ian Anthony, a research fellow at the Stockholm International Peace Institute, points out, no political process can succeed unless the United States and other Western nations set the example by refusing to sell weapons to those who are simply willing to pay the bill. The rub, of course, is that both industrialized and poorer nations rely on arms exports to sustain their economies in terms of jobs and foreign revenue.

However, there are exceptions to the rule as some nations show signs of moving in the right direction. China, for example, has been committed to developing a market-oriented economy since 1978 by converting its military industries to civilian production. Hua Di, a visiting scholar at Stanford, notes that China's leading producer of conventional weapons, the China North Industries Corporation (NORINCO), now makes civilian products (32- and 120-ton heavy-duty trucks in place of tanks) to attract hard currency. Although it maintains a



formidable military force and nuclear capability. China has retreated to eighth place in arms sales in 1991, while the US and Russia remain at the top of the list.

But at the same time China is converting from a military to a civilian economy, India, North Korea, Iran, Israel, Pakistan, and other countries continue to sell and procure arms at a disturbing pace. Motives for acquiring weapons and developing a profitable arms industry are not restricted to defense only. Arms proliferation is a way for developing nations to attain status in the global community, to ensure their economies prosper, and to acquire a political bargaining chip to influence decisions of international consequences.

This is not the kind of book one finds at the corner bookstore. But this thought-provoking collection of essays is well worth the effort to locate and read. Above all, the penetrating analysis offered by these commentaries will jolt the reader into realizing the enormous scope and effect of one of the most devastating dilemmas facing mankind today. It is a subject many put out of their minds, but it is not an issue that will disappear. During these times of severe Department of Defense drawdowns, this book deserves the careful attention of military and civilian leaders, as well as every concerned citizen, to reevaluate what role the US should take to reduce the real and perceived threat created by the proliferation of advanced weaponry.

Robert W. Duffner  
Kirtland AFB, New Mexico

**Out of Control: Global Turmoil on the Eve of the Twenty-First Century** by Zbigniew Brzezinski. Charles Scribner's Sons, 866 Third Avenue, New York 10022, 1993, 200 pages, \$20.00.

Zbigniew Brzezinski's latest offering is a comprehensive assessment of the world as we approach the twenty-first century. The book is premised on the idea that "ultimately, it is ideas that mobilize political action and thus shape the world." But more than just elaborating on the political ideas of this century, he condemns the "collapse, especially in the advanced parts of the world, of almost all established values." Brzezinski's purpose is not to propose solutions to problems he sees developing in the world but rather to warn of

"what must not be allowed to happen" if we are to progress as a world community.

As the twentieth century closes, an end comes to the most destructive period in our history, a history that by Brzezinski's estimates, has claimed 175 million military and civilian lives from politically motivated killings. These were propagated by what he calls the "Metamyths" of our time—communism, fascism, and nationalism. The idea of these "coercive utopias," fervently spread during the nineteenth and twentieth centuries, sought to replace the traditional moral, social, economic, and political foundations.

According to Brzezinski, the onset of literacy among the masses, combined with industrialization and urbanization in the developed world and subsequently the third world, helped spread these ideas. He maintains that rather than a man-created heaven on earth, the result was an attempt made at total control of all facets of the human condition. The abuses of V. I. Lenin, Joseph Stalin, Adolf Hitler, and Mao Tse-tung and the reasons for their failure are well documented and provide a sobering reminder of why similar developments must be prevented from reoccurring.

While the Western powers can take heart that democracy and free-market capitalism did play an obvious role in the defeat of these ideologies, Brzezinski makes his most important observations on the failures of the West. In particular, he takes aim at the secular consumerism that has produced a desire for self-gratification and moral relativism over the ideals of self-sacrifice and concern for others imbedded in traditional religious morals. He terms this a *permissive cornucopia* that threatens to undermine the West's and, in particular, America's moral authority over world events although it possesses the power to influence those events. The belief among the Western countries that one progresses through scientific advances and past the need for religion has undercut the moral underpinnings of society founded in religious teachings. Brzezinski warns that the possible effect of this could be a developing world that observes, through massive worldwide communications, the huge disparities in their material conditions with the West. These countries could turn away and be influenced by accessible alternatives, principally the offerings of the Islamic world and China, a country that Brzezinski believes may serve as the spokesman for the disenfran-

chised. Should this happen, a historic opportunity would be lost by the Western powers, and Brzezinski has fired a warning shot to see that this opportunity is not lost.

Capt James E. Edmonds  
Maxwell AFB, Alabama

**Understanding War: Essays on Clausewitz and the History of Military Power** by Peter Paret. Princeton University Press, 41 William Street, Princeton, New Jersey 08540, 1992, 229 pages, \$24.95.

Until the 1980s many professional historians thought military history was an intellectual wasteland. As a "handmaiden to militarism," it was synonymous with propaganda and mythopoeia. It presented, through the suppression or manipulation of facts, a heroic view of the past, and thus promoted useful national myths and values. Such an approach made a nation's history less painful to consider since it discouraged muckraking revisionism, but it frequently coalesced with a second problem—military historians studied the past for "lessons learned." The latter approach, critics rightfully observed, ransacked the historical record to establish false analogies with the present. It also contributed to the obsolescence, methodological myopia, and reductivism found in military history up through the 1970s since military historians were largely content to repeat themselves and remain ignorant of burgeoning historiographical disputes and developments.

However, scholars like Sir Michael Howard repeatedly stressed the legitimacy of military history and slowly improved its stature in academe. In his seminal Royal United Services Institute lecture on "The Use and Abuse of Military History," Professor Howard insisted that the "New Military History" needed to emphasize the economic, political, and cultural aspects of war. He further believed, in Carl von Clausewitz's words, that "there can be no purely military evaluation of a great strategic issue, nor . . . a purely military scheme to solve it." This assumption became an article of faith among Professor Howard's early protégés, some of whom became distinguished practitioners of the "New Military History" in the 1970s and 1980s. Arguably the brightest star in the latter group was Peter Paret, who was Raymond A. Spruance Professor of Interna-

tional History at Stanford University before his current position with the Institute for Advanced Study, Princeton University. In *Understanding War*, a collection of 16 essays previously published in assorted journals, compendiums, and conference proceedings, Professor Paret shows himself to be true to his intellectual roots. Without losing sight of the unique nature of war, the essays treat the history of war as a part of history in general. They admirably demonstrate that "war has its own characteristics but is linked to all other areas of society and culture" (page 1). They also demonstrate that the proper function of military history is not to recount mere operational details but to study war in relation to its social, political, and intellectual context.

To fulfill the above charter, the author divides *Understanding War* into three parts. Part 1, "War and Its Institutions," includes six essays that analyze the role of military power in European history, particularly in the Napoleonic era. The essays focus on the state-creating and state-maintaining role of military power, the relationship between the American Revolutionary War and European thought and practice, and the role of conscription in an age of growing nationalism. In the latter case, Professor Paret suggests that conscription is at the core of the liberal view of citizenship; it is, in Professor Michael Geyer's words, "male obligation written into the norms of civil contact." French and Prussian military reformers, in promoting the nascent concept of conscription, stressed the reciprocal relationship of the individual and the state. In the Prussian case, however, conscription was an unequal social compact driven by practical necessity rather than a new vision of society. Social reforms did not accompany military reforms. As a result, the philosophical foundation of modern conscription (i.e., the social contract theory) was, at least in the case of Prussia, bogus and illegitimate. Nevertheless, conscription did contribute to the growth of the centralized state and the expansion of war.

After providing a historical framework in part 1, Professor Paret shifts his attention to Carl von Clausewitz. Part 2 of *Understanding War* contains nine essays that focus on Clausewitz's life and thought from the logic of his theories and aesthetics to his reactions to the French, Dutch, and Polish revolutions of 1830. It is in these essays that Professor Paret reconfirms his status as *the* English-speaking expert

on Clausewitz today. (Interested readers should also consult the author's *Yorck and the Era of Prussian Reform* and *Clausewitz and the State*.) But what is genuinely praiseworthy, given the uncritical and awed reverence "The Master" still commands, is Professor Paret's tough-minded ability to cite Clausewitz's limitations as a military thinker. Clausewitz did not, even if we acknowledge the parameters of his interests, properly analyze the impact of institutional, technological, organizational, administrative, and economic factors on war. Nor did he delve into the causes of war, its moral/ethical dimensions, and the combined effects of land-sea operations. Most important, Clausewitz assumed that when armies fought wars as a continuation of policy by other means, a policy vacuum did not exist. In democratic societies, however, civilian elites may not provide specific policy guidance and thus intentionally distance themselves from the consequences of their own actions. As a result, military leaders are left to fill foreign policy vacuums in de facto ways, as American navalists did in the nineteenth century and Checkmate, the USAF planning cell, largely did in Desert Storm. Unfortunately, the resulting policies may not match desired political outcomes.

Finally, Professor Paret focuses on "The History of War and the New Military History." He thoroughly discusses the problems alluded to earlier, but underplays one possible reason why academe still reacts to military history with suspicion. In short, the study of war is thanatology—it makes death a subject of history. In contrast, general history, in Michael Geyer's words, is "the assertion of civility over death." Squeamish general historians do not highlight death for fear it would ruin the discipline's positive social role. As a result, it may be this unresolved tension that continues to alienate the general historical community from military history. This caveat and others aside, however, *Understanding War* is an outstanding collection of essays by one of the premier military-cultural historians writing today.

Maj Peter R. Faber, USAF  
Maxwell AFB, Alabama

**Toward Managed Peace: The National Security Interests of the United States, 1759 to the Present** by Eugene V. Rostow. Yale Uni-

versity Press, 302 Temple Street, New Haven, Connecticut 06511, 1993, 401 pages, \$35.00.

Distinguished author and policymaker Eugene V. Rostow, offers a fascinating post-graduate-level panorama of the history of United States diplomacy. Stating that "the supreme interest of the United States is the effective functioning of the system of world public order as a system of peace," he builds his case with a well-documented journey through the major wars and diplomatic process that punctuated the evolution of the American culture and nation to its present status as the world's only superpower.

Rostow argues that American isolationism is a powerful but largely "mythological" belief that is rooted in Washington's Farewell Address and the Monroe Doctrine but that is not consistent with historical US foreign policy actions. He believes that Woodrow Wilson was correct to envision America as being "chosen" to preserve civilization by lifting the "burden of war from mankind." Ample support for this thesis is woven consistently through a colorful tapestry of war and diplomacy.

While he states the problem in eloquent detail, Rostow stops short of answering the "how" question. If "small wars can become big ones if they are not put out," then *how* does the US put out the fires of hatred in the former Yugoslavia? If rational and achievable military objectives are not clearly delineated, is not the notion of maintaining peace by the use of military force oxymoronic? His characterization of the US intervention in Vietnam from a Wilsonian perspective as "badly handled but in the end successful" is a leap some readers may not take. Rostow paraphrases the pastoral letter of the 1983 American Conference of Catholic Bishops in asserting that "in order to prevent nuclear war it is therefore necessary to prevent all international war." *How?* Rostow asserts that the spectrum of international diplomacy from "concert of power" through "balance of power" to "chaos" is a system that should be understood and managed pragmatically. But the sheer volume of war and international chaos of just the past decade clearly argues that much of mankind has not found the "how" answer.

That observation notwithstanding, this book should be of great value and interest to students and teachers of national security decision making and international diplomacy. The

richness of historical details and insights does not facilitate speed-reading. In fact, the book's style lends itself to a deliberate treatment. Billed as the first of a series of three books dealing with US security interests and the state system, *Toward Managed Peace* establishes a solid historical foundation that should empower deep study of this vital subject.

Col James E. Roper, USAF  
Maxwell AFB, Alabama

**Inventing the Future: How Science and Technology Transform Our World** by F. Clifton Berry, Jr. Brassey's, Inc., 8000 Westpark Drive, First Floor, McLean, Virginia 22102. 1993, 180 pages, \$19.95.

F. Clifton Berry has accomplished a rare feat by writing a book about science and technology with both cleverness and style. *Inventing the Future* addresses the advances in science and technology that have occurred over the past 40 years. The author of several texts on aerospace and defense technology, Berry has a lively writing style that makes the reader want to keep turning pages. Indeed, one can almost feel the enthusiasm he has for his subject.

In the period of time covered by the book, the world was transformed by rapid advances in science and technology, such as those in medicine, meteorology, defense, transporta-

tion, and so forth. Specific topics addressed by Berry include the electronic revolution, the development of computers, the Information Age, microchips, microprocessors, communications, fiber optics, the development of lasers and radar, thermal imaging, virtual reality, applications of new technologies, and a forecast for the future. Figures, graphs, or tables appear on nearly every page, and the book boasts an extensive bibliography and index. One question we infer from this work is whether government, academia, and industry can work together in a way that will extend the benefits of technology to everyone.

A well-illustrated book, *Inventing the Future* is fascinating and understandable. However, it may not satisfy some military readers because too few examples of technological advances are relevant to military applications, and many questions are left unanswered. For example, do smart weapons work in all weather? In sandstorms? If not, why? Which weapons would one choose to strike a moving target at night, in rain and clouds, over sandy terrain? Why? What wavelengths are most frequently used with smart weapons? Will infantrymen be exposed to hostile fire when they aim/guide smart weapons at enemy armored vehicles?

As a general reference on the development and current state of modern technology, *Inventing the Future* is excellent. From a military reader's point of view, however, it leaves much to be desired.

Capt Steve Carr, USAF  
USAF Academy, Colorado



**Capt Judy M. Graffis** (BS, USAFA; MPP, Harvard University) is chief of operations intelligence, 509th Bomb Wing, Whiteman AFB, Missouri. Previously, she was an assistant professor and course director for military theory at the US Air Force Academy. She has served as an applications intelligence officer in Germany and Korea, supporting headquarters and unit-level operations. Captain Graffis is a distinguished graduate of Squadron Officer School.



**Maj Richard W. Aldrich** (USAFA; JD, UCLA School of Law) is an assistant professor of law at the US Air Force Academy. He previously served as a systems analyst with the

Joint Chiefs of Staff and War Plans Programming, Headquarters SAC; as a legal intern with Space Division, Los Angeles AFS, California, and with the Office of the Secretary of the Air Force/Legislative Liaison; as assistant staff judge advocate, Sheppard AFB, Texas; and as an appellate defense counsel, Washington, D.C.



**Maj Norman K. Thompson** (BA, San Francisco State University; JD, University of California, Hastings College of Law) is an assistant professor of law at the US Air Force Academy. He also served as assistant staff judge advocate and as area defense counsel at McClellan AFB, California; and as circuit defense counsel at Travis AFB, California.



**Lt Col James S. Kent** (BS and MS, North Dakota State University; PhD, University of Minnesota) is an associate professor of biology at the US Air Force Academy. Prior to his current assignment, he served as a member of the Air Force's Bird/Aircraft Strike Hazard (BASH) Team, as a visiting scientist at the Los Alamos National Laboratory, and as an instructor at the Air Force Academy. He has written many articles dealing with avian research and baseline environmental studies. Colonel Kent is a graduate of Squadron Officer School and Air Command and Staff College.





**Lt Col Charles Shotwell** (USAFA; LLD, American University; JD, University of Puget Sound School of Law) is an assistant professor of political science at the US Air Force Academy and formerly a USAF National Defense Fellow with the International Security Studies Program at the Fletcher School of Law and Diplomacy, Tufts University. He also served as chief of the Legislative Affairs Section for the Deputy Under Secretary of the Air Force, International Affairs. Colonel Shotwell is both a lawyer and an international politico-military affairs officer.



**Maj Joginder Dhillon** (USAFA; JD, Harvard Law School) is assistant professor of law at the US Air Force Academy. During extended TDY to the SDIO general counsel's office, Major Dhillon briefed members of the DOD Compliance Review Group on the limits imposed by the ABM Treaty on GPALS test and acquisition schedules. He also worked with SDIO's international law advisor on developing amendments to the ABM Treaty that would allow

deployment of a system consistent with the mandate of the Missile Defense Act of 1991.



**Capt Deborah C. Pollard** (USAFA; MPP, JFK School of Government, Harvard University) is an assistant professor of political science at the US Air Force Academy, where she is the director of a course in US national space policy. She was previously assigned to the Space Programs Directorate at Headquarters Electronic Security Command and completed a project on the joint planning process while on extended TDY at USSPACECOM/JSX (Plans and Policy).



**Lt Miriam D. Becker, USN** (BA, University of Illinois; MA, Naval Postgraduate School) is the officer in charge, Personnel Support Activity Detachment (PSD), Keflavik, Iceland. Lieutenant Becker's previous assignments have included assistant officer in charge, PSD, Sigonella, Italy; and intelligence officer, Defense Intelligence Agency/Joint Chiefs of Staff (J-2), Washington, D.C.



**Lt Col Douglas Erwin** (USAFA; MA, Tufts University; PhD, University of Denver) is an assistant professor of political science at the US Air Force Academy and previously served as an F-4E weapons system officer. Colonel Erwin is a graduate of Squadron Officer School, Air Command and Staff College, and Air War College.

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