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Verification of a Chemical Weapons Convention: A Guide to the Perplexed

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Pragmatic Steps Toward Ideal Objectives

VERIFICATION OF A CHEMICAL WEAPONS CONVENTION: A GUIDE TO THE PERPLEXED

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The Multilateral Verification Project

This essay is a product of the Stimson Center's Multilateral Verification Project which is made possible by grant support from the Carnegie Corporation of New York and the Rockefeller Brothers Fund. The Multilateral Verification Project is designed to promote constructive approaches for international security problems and multilateral negotiations. Our work has focused primarily on useful applications for "Open Skies" and constructive ways to strengthen the prospective Chemical Weapons Convention. Our goals are to generate understanding and appreciation of problem-solving approaches that are practical, equitable, prompt and as resistant to manipulation as possible. We also wish to call attention to multilateral verification proposals that are likely to cause more harm than good. Luncheon meetings are held in Washington where concept papers are presented and discussed by representatives of the executive and legislative branches, the diplomatic corps, non-governmental organizations, and the media. These papers and notes of the meetings are then distributed to government offices and research institutes.

About the Author

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Introduction

Verification, like beauty, lies in the eyes of the beholder. Analysts disagree on the value of arms control and disarmament agreements in large part because they disagree on core assumptions about the nature of national security and the objectives of negotiating partners. Similarly, assessments of an agreement's "verifiability" can be quite different, depending on underlying assumptions about the motives of participating states, the military utility of cheating, and the potential for responding to violations.

Professionals in the intelligence community are supposed to advise policymakers about which treaty provisions can be monitored easily and which with great difficulty. Ideally, these assessments help shape the executive branch's arms control and negotiating policy and become the basis for high-level policy pronouncements about verification. The legislative branch then passes judgment on the adequacy or effectiveness of verification arrangements, echoing arguments ventilated in the media, pro and con. Although basic substantive issues are often in dispute, debates over verification usually are a surrogate for larger political issues.

Verification debates have been especially contentious over bilateral agreements between the United States and the Soviet Union. During the ebbs and flows of the cold war, the Kremlin habitually pushed against the margins of agreed limitations or entered gray areas in ways bound to create friction. On rare occasions Soviet officials overstepped agreed boundaries with such clarity as to create political firestorms abroad and embarrassment at home. Soviet behavior dovetailed and reinforced a legalistic negotiating approach in Washington to produce highly detailed treaty texts keyed to verification concerns.

Multilateral negotiations dealing with proliferation have involved a far more relaxed approach to verification than recent U.S.-Soviet accords. The Nuclear Nonproliferation Treaty (NPT), signed in 1968, does not include verification provisions. The "safeguards" agreements of the International Atomic Energy Agency (IAEA), governing verification of states' obligations under the NPT, were not even concluded before the Senate consented to ratification. The Biological Weapons Convention (BWC), signed in 1972, has no verification provisions whatsoever.

Verification arrangements for the Chemical Weapons Convention (CWC), however, cannot be treated so cavalierly. This accord, unlike the NPT, is a nondiscriminatory agreement and will not permit the United States to stockpile unconventional weapons while other states pledge to refrain from doing so. Yet a U.S. commitment to adhere to the CWC's provisions will do nothing to prevent lesser, nonsignatory military powers from making and using chemical weapons. Unlike biological weapons, chemical weapons have periodically been used on the battlefield, at times with considerable tactical success. If the convention enters into force, and if the United States becomes a party to it, U.S. military forces will be unable to retaliate in kind against chemical attacks.

Thus, the Bush administration can hardly follow the approach adopted in the BWC, especially given the troubling allegations of Soviet violations of that convention and given Saddam Hussein's covert program to produce both biological and nuclear weapons.[1] There is also the delicate matter of eight years of Reagan administration rhetoric about the need for the most stringent verification requirements, for challenge inspections in particular. The man who conveyed this message to the chemical weapons negotiators at the Conference on Disarmament in 1984 was none other than Vice President George Bush.[2] The CWC will therefore include useful verification arrangements. They will, however, fall considerably short of inspections "anywhere, anyplace, without a right of refusal," as previously sought by Reagan administration officials.

Consequently, both supporters and critics of the CWC will have powerful arguments to make about the verification arrangements of this multilateral accord. Supporters will dwell on the utility of establishing international norms against chemical weapons and the utility of the new multinational bodies created to implement the convention. Critics will argue that norms can easily be vitiated by large verification deficiencies, as well as by nonsignatory states. All of these arguments have merit, and all are interconnected. What follows is an effort to guide the reader through the pros and cons of verifying a chemical weapons convention. A conceptual approach is adopted, both because detailed provisions in several key areas have yet to be concluded as of this writing and because a conceptual framework is especially useful for addressing the larger political and national security issues associated with verification provisions.

Basic Verification Guidelines

Every U.S. president since Richard Nixon has enunciated the same standards for assessing verification requirements. Before the Reagan administration, these standards were deemed to constitute "adequate" verification; with the Reagan and Bush administrations, the term "effective" verification has gained currency. Although the adjectives have changed, the key criteria have remained constant: the United States must have an ability to detect militarily significant violations in sufficient time to take an effective response.[3] Each of these three interrelated elements for adequate or effective verification—military significance, timely warning, and effective response—is extremely important.

Timely warning of troubling developments is needed to allow for a response at a stage at which the problem may be most amenable to solution, whether by diplomatic or other means. Without an ability to detect problems as they arise in a timely fashion, verification regimes will have little deterrent effect. Early detection also permits the concentration of monitoring assets on the problem to help with evaluations of military significance. Just as important, early warning provides decision makers with the time needed to plan and orchestrate careful, appropriate responses.

The military significance criterion is no less important than timely warning. Military significance does not derive solely from the extent of a

treaty violation. For example, the employment of 2,000 agent tons against protected military forces in European conflict scenarios would have far less consequence than the use of 100 agent tons against population centers in the Middle East. If rule-bending or rule-breaking permitted a state to increase its security in important ways at the expense of another state, the treaty regime could become fragile and counterproductive. Verification arrangements should allow states to make educated guesses about the nature and the extent of problems they face. These estimates, in turn, can help shape responses. Verification arrangements, together with national technical means (NTM) of intelligence collection, should facilitate detection of troubling developments well below the military significance threshold, however, to permit political leaders to send warning signals long before problems become severe.

Appropriate responses may be political, economic, or military in nature, or any combination of the above. Ideally, a verification regime should help make it easier for policymakers to determine and substantiate what level and which types of response are proportional to the problem. Sometimes simply publicizing the inappropriate or troubling behavior may be sufficient; sometimes nothing short of military action or economic sanctions may be required. If no corrective action is forthcoming, other steps may be needed to protect a concerned state from being placed at a military disadvantage. A verification regime and NTM cannot resolve domestic debates over what constitutes appropriate responses, nor can it ensure corrective action. It can, however, clarify the nature and extent of the problem.

The CWC Verification Regime

The Chemical Weapons Convention will be the most complex multilateral agreement negotiated to date. Verification arrangements will go far beyond those of previous agreements, including the Conventional Forces in Europe Treaty, because for the first time, inspections will regularly take place at civilian industrial sites. The international inspectorate created by the convention will watch over the production of "dual-use" chemicals to make sure that the chemical industry produces legitimate compounds, such as fertilizer, rather than prohibited chemical warfare agents, such as nerve gas. In addition, inspectors will monitor the declaration of facilities that once produced chemical weapons, their temporary conversion, closure, and destruction. They will also monitor storage facilities, the transfer of chemical weapons to disposal sites, and the destruction of stockpiles.

The draft CWC currently divides chemicals into three major groupings, or schedules, with different monitoring objectives associated with each schedule. Schedule 1 includes existing means of chemical warfare (such as nerve and blister agents), chemicals closely related to known agents, or chemicals that can readily be weaponized. These chemicals have little or no use other than as instruments of warfare. Schedule 2 chemicals include key precursors for chemical warfare agents, while Schedule 3

consists of dual-purpose chemicals and precursors to chemical warfare agents also used in relatively large quantities for commercial purposes. Facilities producing chemicals on these schedules will be subject to inspections. Facilities capable of producing chemical weapons (according to criteria that have not yet been agreed upon) are also likely to be subject to routine inspections. In addition, challenge inspections will be permitted for suspect sites although, as discussed below, the value of these inspections depends on important details that have not been agreed upon as of this writing.

Inspections associated with Schedule 1 chemicals have a variety of purposes: to confirm the cessation of activity, to confirm the accuracy of declarations, to ensure that there is no resumption of activities prohibited by the Convention, and to confirm the destruction of chemical weapons as well as the facilities that once produced them. Each State Party, however, may choose to operate a single small-scale facility to produce an aggregate of one metric ton of agent which may be used only for research, medical, pharmaceutical or protective purposes. The draft text of the convention stipulates limits on equipment and production capacity for such facilities as well as inspection procedures to monitor declarations and aggregate production associated with these sites. The interim storage and phased destruction of declared chemical munitions and bulk quantities of agents will be carefully monitored by *in situ* devices as well as inspections.

All facilities that manufacture listed Schedule 2 chemicals in greater than specified threshold quantities will be subject to routine inspections. States with Schedule 2 facilities must annually submit records on production, processing and consumption of these chemicals. Verification measures associated with Schedule 2 chemicals have the following objectives: to confirm that declared facilities are not producing anything on Schedule 1; to confirm that the data provided are consistent with purposes not prohibited by the Convention; and to confirm that Schedule 2 chemicals are not diverted or used for prohibited purposes.

Inspections of Schedule 3 facilities are not well defined as of this writing. One approach would have inspectors selecting sites from a national register of Schedule 3 facilities which includes information on the names and amounts of chemicals produced, processed, consumed, imported and exported annually. The final products and end uses of Schedule 3 chemicals would also be provided. Consideration is also being given to broadening the Schedule 3 category to include all "CW capable" facilities, although the criteria for declaring such facilities have yet to be agreed upon. Under this approach, any facility with the equipment and expertise to produce prohibited chemical compounds could be subject to inspection.

While these broad outlines of the Chemical Weapons Convention are clear, important details have yet to be worked out. Still, the negotiations have moved far enough along for an analyst to assess the strengths and weaknesses of the convention's verification provisions.

Verification Negatives

The difficulties associated with verifying compliance with the Chemical Weapons Convention have been well advertised. They were spotlighted, in particular, by Reagan administration officials strongly averse to negotiating the convention. In a special congressional hearing in 1984 Richard Perle, then assistant secretary of defense (international security policy), outlined three verification "problem areas of potential military significance": the production of dual-purpose chemicals, such as hydrogen cyanide, which have legitimate civilian uses but which can also be employed for military purposes; the potential for significant undeclared production or conversion of chemical warfare agents such as mustard gas; and the potential for significant undeclared chemical weapons stockpiles.[4]

Although Perle has embellished these problems more than most, his complaints reflect substantive problems.[5] Executive branch officials have characterized the monitoring tasks associated with permitted production activities under the convention as "difficult," and those associated with clandestine stocks and production as "extremely difficult."[6] The latter concern was heightened by the Kremlin's declaration of the size of its chemical arsenal, which prompted open skepticism from U.S. and British officials.[7] The professed absence of Soviet chemical weapons in Eastern Europe was also met with considerable, albeit more quiet, skepticism.

Accordingly, the *Fiscal Year 1989 Arms Control Impact Statements*—an interagency-approved document transmitted annually by the director of the Arms Control and Disarmament Agency to Congress—concluded:

> It will be very difficult to be sure whether all facilities and stockpiles have been declared or whether new facilities are being developed. The United States has proposed in its draft treaty to open to inspection upon request any site which could be suspected of a violation . . . . Even with these measures, it is not clear that the United States could effectively verify compliance of a ban on chemical weapons.[8]

Robert M. Gates, then deputy director of the Central Intelligence Agency (CIA), offered the consensus view on chemical weapons verification in a public address delivered at a Washington symposium in October 1988: "National technical means can only do so much. There are few signatures for production and storage of chemical weapons, and little on the horizon that will help us substantially in this area."[9] A CIA report leaked to columnist Jack Anderson was more blunt: "There should be no illusion about the feasibility of achieving a highly reliable verification scheme for a chemical weapons ban. Substantial uncertainties will still remain."[10]

Verification problems begin with knowing where to go within facilities that may be large and complex. This problem applies to all types of inspections, but particularly to challenges at suspect sites. The number of facilities subject to inspections will undoubtedly be substantial. Every

form of inspection, however, will be constrained not only by number, frequency, and cost but also by the size and capabilities of the inspection teams.

It will be reasonable to assume that most, if not all, of the multinational inspection team members will be unfamiliar with the facility being inspected. This places a premium on having a highly professional, well-trained team especially familiar with chemical engineering and weaponization. Yet inspection team members will also need detailed information about a facility before they visit it if they are to make the most effective and efficient use of their limited time on site. It is by no means clear that team members will have this information. Site layout diagrams and process flow diagrams are not required for many declared facilities, and there are no clear standards for those diagrams that are mandated by the convention.[11]

At present, there are no guaranteed ways for inspection team members to receive sufficiently detailed information about a site to be visited. Commercial observation satellites, such as the French *Satellite Pour l'Observation de la Terre* (SPOT) might be utilized to help prepare for site visits and to help draw perimeters for challenge inspections, but the usefulness of these images will be constrained by their ten meter resolution.[12] In the future, access to higher quality data could be obtained by multinational technical means (MTM). Such collection methods, however, are not yet operational. The information-sharing arrangements of MTM, such as the French-Italian-Spanish photoreconnaissance satellite, *Helios*, scheduled to be launched in 1993, are still unclear.[13]

States with assured access to MTM, like those possessing national technical means, may be reluctant to share detailed information received about some suspect sites. They may, as an alternative, submit artists' sketches of the imagery obtained by NTM or MTM, or they may quietly pass along intelligence information about a suspect site to the inspection authority, as did the United States government to the UN Special Commission for Iraq.[14] There is no guarantee, however, that useful information will be forthcoming or that it will be satisfactory or sufficient for a thorough inspection.

Over time, multilateral accords may eventually be backed up by dedicated satellite systems. In the interim, or as an adjunct to other means by which inspection authorities obtain information, aerial inspections could help in the conduct of inspections, particularly in surveying suspect and declared sites prior to an inspection.[15] In addition, to demonstrate a reasonable effort at compliance, a challenged state might volunteer detailed diagrams about a site to be inspected in enough time for the information to be useful for planning purposes. Such diagrams, however, may not exist, or the host country may not wish to share them. Without any of the assists noted above, inspection teams may be hard-pressed to know where to carry out their investigations.

In sum, there are good and sufficient reasons for critics to belittle the CWC's verification provisions and to be concerned about permitted as well as covert production. This bleak picture, however, is far from com-

plete. Other considerations suggest a more promising outlook for monitoring compliance with the convention.

Verification Positives

Despite formidable problems in verifying compliance with a chemical weapons convention, there are also positive elements that deserve note. The draft CWC follows the useful practice of requiring states parties to declare militarily significant activities and facilities. By doing so, the CWC simplifies monitoring tasks associated with declared items and establishes a basis for determining noncompliance if proscribed equipment, facilities, or stockpiles are located elsewhere. The actual monitoring of declared stockpiles and facilities is characterized as a "straightforward" operation in Pentagon testimony, as is monitoring the destruction of declared stockpiles and declared production facilities of chemical weapons.[16]

Suspect sites and extremely large industrial complexes that produce chemicals suitable for both commercial and military purposes clearly pose the greatest verification challenges. Nevertheless, the broad scope of the CWC inspection regime is a significant positive factor. The Convention expressly provides inspectors with the right to unimpeded access within Schedule 1 facilities, and specifies inspection targets of particular importance for Schedule 2 facilities. The right to inspect Schedule 3 and other facilities capable of producing chemical weapons might also have a deterrent effect, although determined cheaters will wish to deny access if inspectors are close to discovery of illicit activities. Even in this case, however, the Convention's verification provisions may be useful in clarifying the actions of participating states that have something to hide.

Another helpful feature is the small number of known chemical warfare agents that inspection teams must be on the lookout for.[17] Concerns have been raised about the potential for scientists to produce novel agents, and these concerns obviously cannot be discounted. At present, however, the known list of chemical weapons is quite small, dating back to World War I era blister agents and World War II era nerve agents. New techniques for delivering and packaging chemical warfare agents have been considered (such as "binary" munitions), but the basic categories of agents and their telltale signatures have not changed. As long as states continue to opt for "standard" blister and nerve agents, rather than to pursue more difficult and expensive paths leading to entirely new kinds of lethal unconventional weapons, inspectors will know what to look for—a significant plus for any inspection regime.

Since nerve agents have no other uses, discovery of their traces would provide highly damaging evidence, although the dates of production could be difficult to pin down. Similarly, the production of mustard gas and lewisite is extremely difficult to hide from gas chromatography/mass spectrometry equipment. Fears that a chemical weapons production facility could be completely cleaned up appear to be grossly overstated. Unless states are operating with completely emission-free equipment, they will

leave some trace of chemical warfare agents that could be detected by inspectors granted an appropriate degree of access.

The degree of access required may be less than is commonly presumed. Chemical facilities have waste streams, liquid or gaseous. Particulate matter from previous chemical processes can be found within and, if emissions controls are inadequate, outside buildings of interest. Extremely useful information can be gathered from soil and water samples or from swipes or wipes taken from piping, floors, and the exterior of buildings. Thus, when less than state-of-the-art emissions control equipment is present, access rights need not include entry into sensitive buildings if inspectors with suitable equipment are allowed to take samples outside buildings—a much simpler task.

Of course, states that participate in the convention could make it difficult for inspectors to carry out their tasks. States parties could go to considerable lengths to store wastes rather than provide inspectors access to them. "Creative plumbing" could be employed. Much depends on the extent of access provided, a critical subject that will be discussed in greater detail below. States parties could also employ state-of-the-art "scrubbing" equipment to prevent as much unwanted gaseous and particulate matter as possible from being released into the atmosphere. Such equipment, used by some states to meet national environmental protection standards, is expensive and currently not widely present outside of North America and Western Europe.

The paucity of environmental protection devices associated with the manufacture of chemical compounds is a worldwide problem that needs to be addressed. The more environmentally conscious participating states become, the harder it will be to monitor compliance with the CWC. In the meantime, however, this situation provides investigatory advantages to inspection teams since states that already have in place sophisticated environmental protection techniques are not among those suspected of producing clandestine stocks of chemical weapons. A number of states that are suspected of at least contemplating the production of clandestine stocks may not have well-advanced emissions controls. If they do not, their chemical weapons production efforts could provide important telltale signs of illicit activity—if inspectors are provided appropriate access.

The United States has an additional advantage in any multilateral verification regime: the unilateral collection of information by national technical means. This country's data base will be greater than any other's. As a result, the United States will depend less on information obtained by the international authority created by the accord than will other states parties. The advent of a convention is unlikely to lead to a slackening of relevant U.S. monitoring efforts; indeed, the conclusion of other arms control agreements has led to an intensification of treaty related monitoring tasks. As a result, the United States will continue to be able to draw its own conclusions and shape its own national security posture and diplomatic initiatives on the basis of information obtained by NTM.

Difficulties would arise, of course, if information possessed by the U.S. intelligence community suggested one course of action and the posture

of the Convention's international authority suggested another. Under these circumstances, states possessing sensitive intelligence would have to choose between sharing their information in some fashion beyond established patterns of intelligence cooperation and protecting sources and methods of intelligence collection. Public perceptions, if not formal determinations of guilt or innocence, are likely to turn on the degree of access permitted by inspected states, the amount of information released both publicly and privately about activities of concern, and the international credibility of states lodging or denying complaints.

States parties with access to intelligence information might not be able to ensure an appropriate inspection, but they would have the power to disseminate incriminating evidence if they so desired. The likelihood of this occurring will depend, in part, on whether the intelligence community's impulse to protect sources and methods is overridden by the need of political leaders to clarify public ambiguities or clarify private misbehavior. The prospect of greater intelligence-sharing has also been enhanced by the end of the cold war and by patterns of international cooperation forged during the UN Special Commission's inspections of Iraq.[18] Although there are risks involved in increased intelligence-sharing, there are also substantial benefits in promoting more effective verification of multilateral agreements and a more cooperative international security environment.

Challenge Inspections, Act I

As the above analysis suggests, the credibility and integrity of a chemical weapons convention rest to an uncomfortable degree on provisions for challenge inspections of suspect sites. Since the production of chemical compounds of greatest concern is likely to leave telltale signs that can readily be discovered by monitoring equipment possessed by inspection teams, much will depend on the degree to which these teams are permitted access to carry out their mission.

During the depths of the cold war, challenge inspections were out of the question; even on-site inspections of declared facilities were unacceptable in the Strategic Arms Limitation Talks accords. The latter, but not the former, became possible in agreements negotiated during the warming period before the collapse of the Soviet Union: the intermediate-range nuclear forces, conventional forces in Europe, and strategic arms reduction treaties mandated scores of inspections, but all left the acceptance of challenge inspections purely to the discretion of the host state.

At the outset of the Reagan administration, the subject of challenge inspections became an important surrogate issue over the larger question of whether to conclude arms control agreements with the Soviet Union. Against a background of well-publicized charges of Soviet noncompliance, some high-ranking executive branch officials poorly disposed toward treaties with the Kremlin championed the notion of on-site inspections. They were opposed by others within the Reagan administration and by the arms control community, which at that time opposed on-site inspections as

a thinly veiled way to foreclose new agreements. For chemical weapons, the issue was joined over an extreme form of mandatory challenge inspections, anywhere and anytime.

For bureaucratic and political reasons, Reagan administration hardliners won this argument in 1984, when the U.S. government was preparing to table a draft chemical weapons convention in the Conference on Disarmament. Although qualms were raised in some quarters about mandating open U.S. laboratories and defense facilities, no one expected the Soviet Union to accept this proposal. By demanding extreme challenge inspection rights, the Reagan administration could capture the moral high ground, domestic critics could be placed on the defensive, and the chemical weapons negotiations could be stalled—all positive outcomes in the view of the convention's opponents.

The key figure in this push to provide substance to Reagan administration calls for "effective" verification was Assistant Secretary of Defense Richard Perle. As Perle later recounted about a key interagency meeting at the State Department:

> I remember going around the room and saying, "Does anyone believe that they [the Soviets] would give up all their chemical weapons?" And nobody raised their hand. Nobody. I said, "I take it then that everyone agrees that they would be likely to retain some chemical weapons." And there was kind of a silence . . . . Then the question became: What are the consequences of an agreement in which we give up ours?[19]

Perle claimed in this newspaper interview that he later convinced not only Secretary of Defense Caspar Weinberger of the need for challenge inspections anywhere, anytime ("It wasn't hard work, it was his natural instinct"), but also the Joint Chiefs of Staff. "'It may mean that we can't get an agreement on that basis; they simply may not be prepared to agree to that degree of inspection.' Perle said. But he said that an agreement without such safeguards would be worse than none at all."[20]

An account of the National Security Council meeting on formally proposing anywhere, anytime challenge inspections has been provided in Kenneth L. Adelman's memoir of his years as the Reagan administration's director of the Arms Control and Disarmament Agency.

> Secretary Weinberger countered [Secretary of State George Shultz] that the treaty was ill-conceived and ill-advised . . . . The United States needed chemical weapons, not a chemical weapons ban . . . .
>
> I pointed out to the President that the treaty was essentially unverifiable. Seconding me, after some prompting, was CIA Director William Casey. Weinberger concurred heartily. If we *had* to offer a draft treaty in Geneva, he advised, it should

> at least provide for inspections anytime and anywhere to search for clandestine chemical stockpiles in all countries. This seemingly nifty approach had one slight problem—*we* could not live with it. The intelligence community did not want Russians running around its most sacrosanct facilities. Nor did other sensitive agencies relish this prospect.
>
> Even with all this, I supported offering the draft treaty as the only real way of enticing Congress to fund the chemical weapons program we needed.[21]

Vice President George Bush, who was given the honor of tabling the new U.S. government proposal for "open invitation" inspections, called this provision "indispensable to an effective chemical weapons ban." The fiscal year 1986 *Department of Defense Annual Report to Congress*, prepared under Weinberger's signature, added,

"We realize that such a verification measure is unprecedented, but the risks of the status quo or of an unverifiable treaty are so severe that they far outweigh the risks of allowing international inspection teams into our sensitive facilities."[22]

Challenge Inspections, Act II

Cynicism and public relations constitute a hollow basis for government policy. The adoption by the Reagan administration of negotiating tactics usually associated with the Soviet Union became an acute source of discomfort when President Mikhail Gorbachev had the audacity and cleverness to accept the U.S. proposal for challenge inspections. Soon after Gorbachev's diplomatic jujitsu act in August 1987, the search began in earnest for suitable fallback positions to an unfettered right of challenge inspections. Given Washington's public statements on this matter, the impetus for seeking an acceptable solution had to fall elsewhere. The United Kingdom accepted the burden of promoting a middle ground between inspections anywhere, anytime and the traditional arms control approach of no guaranteed entry.

The British proposal that emerged, forged in a series of national trial inspections, was labeled as "managed access." In broad terms the proposal appeared to have the makings of an acceptable compromise. The British found that there was no facility on their territory so sensitive that access had to be peremptorily denied, but there might be particular areas within a security perimeter for which access could justifiably be restricted. Shrouding or other devices to protect sensitive equipment might be required. A concept of "random selective access" was devised whereby "only a given percentage of buildings within a site or part of a site, and/or a given percentage of rooms within a building and/or items within a room" would be available for inspection, although not necessarily at the inspection team's choice.[23] The United Kingdom's assessment concluded that all British sites could accommodate "*some* form of access . . . appropriately

managed," and that "a wide variety" of techniques were available "to minimize the compromise of sensitive and classified information unrelated to chemical weapons at even the most sensitive sites."[24]

To be sure, there were ambiguities with the British approach. Guidelines for managed access would necessarily remain somewhat vague and subject to differing interpretations—a positive element in building political consensus behind the proposal but potentially a significant drawback after a convention's entry into force. Much would depend on standards of implementation, which could vary considerably. Nevertheless, a clear obligation remained under the managed access approach to provide some form of entry, the United Kingdom's *sine qua non* for demonstrating good faith efforts in compliance by the host country.

U.S. officials privately criticized the British proposal from two very different perspectives, reflecting a split within the U.S. government. Some viewed the managed access proposal as unnecessary, since the existing U.S. proposal, with suitable revision and with continued Soviet support, would suffice to clarify the rights and obligations of states parties. The existing U.S. proposal, amended to limit complete access, would, in this view, make for a more successful negotiating endgame.

Others believed that the British proposal allowed too much access to sensitive sites. Fears were raised that perimeters could be drawn narrowly around especially sensitive facilities where the blackest of "black" programs were in progress. In this view any entry into a sensitive area could reveal something of significant intelligence value. Managed access might work for the United Kingdom, which did not have so much to lose from foreign inspections, but it could work significantly against U.S. national security.

This protective view dominated Washington debates. Department of Energy laboratories and weapons plants employ chemicals of all sorts; secret military bases and research and development facilities also have chemicals on site that could be subject to inspections. The intelligence community sided with protectors rather than collectors on this issue. Together, the qualms of these government institutions were more pressing than the diplomatic embarrassment and substantive problems that would come from eviscerating the Reagan administration's original proposal for anywhere, anytime inspections.[25]

Challenge Inspections, Act III

Once the Kremlin ostensibly endorsed the idea of intrusive inspections without a right of refusal, George Bush's proposal for anywhere, anytime inspections became a diplomatic albatross hanging around the necks of the intelligence community, the Pentagon, and the Department of Energy. As other contentious negotiating issues were resolved, this untenable position loomed larger. The more negotiations appeared heading toward an endgame—complete with target dates set by the president himself—the more the national security establishment felt it necessary to

reverse course. A new U.S. position on challenge inspections was tabled in the Conference on Disarmament on July 15, 1991.

The revised position stated flatly that each state party had "the right and the obligation to make every reasonable effort to demonstrate its compliance," but it allowed extremely long time lines, loose perimeter controls, and no guaranteed access rights. Under the revised U.S. proposal, as much as a week could pass before inspection teams would be allowed to conduct an inspection. While waiting at the designated site perimeter, these inspectors would have no right to investigate the cargo of vehicles leaving the site. Under the revised U.S. proposal, the challenged state would need to satisfy only one of the following requirements:

- access on the ground for one or more members of the inspection team to portions within the requested perimeter;
- aerial access for members of the inspection team, employing the aircraft of either the challenged state or the inspection team;
- observation into the area from an elevated platform, such as a tower, ladder, or hoist, placed outside the requested perimeter;
- use of tamper-evident sensor suites, either by aerial or by ground inspections.[26]

On the positive side, the revised U.S. position on challenge inspections expressly acknowledged, for the first time, the utility of aerial inspections. But the merit of this monitoring technique was largely vitiated by making it a substitute for, rather than a complement to ground inspections.[27] Aerial inspections could also be avoided by the challenged state, which, under the revised U.S. position, could opt for a stepladder as the means to fulfill its obligations during a challenge inspection.[28] In difficult circumstances, when clear obligations during challenge inspections are most needed, these provisions would effectively make managed access optional rather than obligatory, notwithstanding the proposed hortatory language calling on all states to make "every reasonable effort" to demonstrate compliance.

Nonetheless, the revised U.S. position received the unenthusiastic endorsement of the United Kingdom, Australia, and Japan. In defense of their governments' decision diplomats from these states privately argued that the revised U.S. position would have been even more lax without their participation, that it would have been unwise to leave the United States standing alone on this issue, and that subsequent negotiations in Geneva could provide strengthening language.[29] By contrast, countervailing negotiating forces greeted the new proposal for challenge inspections: some Western states, led by France, attempted to revise it by mandating access within approved perimeters, while other states, led by China, attempted to weaken the U.S. proposal further.

Initial press reporting on the new U.S. government position was confused until domestic criticism of the administration's position generated more careful coverage of the issue.[30] Ironically, the initial wave of condemnation came from members of the arms control community rather than from hard-line critics of negotiated agreements. With the advent of *glasnost* in the Soviet Union, arms controllers had become advocates for on-site inspections. They now sought provisions akin to the British managed access approach, and they found the revised U.S. position detrimental not only to a strong chemical weapons convention but also to efforts to strengthen the IAEA's safeguards system and the Biological Weapons Convention.[31]

Publicly, Bush administration officials countered criticism about the U.S. turnaround on challenge inspections with arguments about the need to protect vital secrets.[32] More circumspectly, they also pointed to the difficulties involved in securing appropriate access at suspect sites, whether under the British managed access provisions or the more lax U.S. proposals.[33] Under either approach, some access might have to be denied; under either approach, much would depend on the good faith efforts of the challenged state to demonstrate its compliance. If, as supporters of the more lax proposals suggested, there was no fundamental difference between managed access and the revised Bush administration position, why propose weakening provisions, particularly when they would undermine efforts to improve other nonproliferation regimes as well as the Chemical Weapons Convention?

The answer clearly revolved around secrets that needed to be kept hidden from foreign inspectors.[34] Apparently, these secrets were so important and so subject to discovery that many layers of protection needed to be built into the Bush administration's revised challenge inspection provisions. The orientation toward guaranteed access in the British approach or the French alternative was too troubling; managed access, according to the Bush administration, needed to be explicitly optional rather than obligatory.

Ultimately, assessments of compliance or noncompliance will rest on information that finds its way into the public domain, perceptions of the extent to which a challenged state has made reasonable efforts to demonstrate compliance, and the credibility of the states lodging complaints and hosting challenge inspections. These assessments would be easier to make, however, under a fairly strenuous inspection regime that mandates access within suspect sites.

Congress, preoccupied by the demise of the Soviet Union and other matters, was slow to express itself on this issue. As of this writing the provisions on challenge inspections remain undecided; the final act of this extended play has yet to be written. In the absence of strong congressional sentiment for tougher verification provisions or renewed effort by allied states, however, the tactical judgment by the United Kingdom to endorse the changed U.S. position, no matter how lukewarm, may be decisive. Political rhetoric to the contrary, negotiating impulses in Geneva naturally

gravitate toward lax monitoring arrangements absent strong countervailing pressures.

Assessing the Balance Sheet

The old adage "something is better than nothing" applies to verification as well as to politics. Even with strong challenge inspection provisions, the verification regime of the Chemical Weapons Convention will have numerous weaknesses. The convention's limitations, whether in verification or in its lack of universal membership, cannot be viewed in a vacuum, however. At the most basic level, if the policy choice is between having a convention and not having a convention, the answer to most will be self-evident, particularly after the Bush administration's decision to renounce the use of chemical weapons once the convention enters into force and its stated intention to dispose of existing stocks unconditionally. Even if subsequent administrations attempt to reverse these decisions, popular and congressional sentiment appears fixed on getting out of the chemical weapons business. Under these circumstances, a convention that requires similar obligations of other states is better than none at all, and a convention with weak verification provisions is better than none at all.

The United States is less dependent on the CWC's verification provisions than any other potential signatory because of America's unique intelligence-gathering and military capabilities. As a result, Washington can accept porous arrangements for the CWC and still meet a minimal standard for "adequate" or "effective" verification. This may be far less than ideal, but the acceptance of weak verification provisions in this case would not threaten U.S. national security interests.

For Washington, the three essential elements of effective verification—detection of militarily significant violations in sufficient time to take effective responses—can be addressed outside the context of the CWC. Provision of timely warning to policymakers will continue to come primarily from varied intelligence sources and methods rather than from the actions of the international inspectorate. The military significance criterion has been considerably devalued by the Bush administration's decision not to retaliate in kind to chemical weapons attacks once a convention enters into force. This decision implies that chemical attacks against properly trained and equipped U.S. forces will not be militarily significant.[35] Finally, the appropriate response to chemical attack deemed necessary in the Persian Gulf War against Saddam Hussein—devastating conventional firepower—is not constrained in any way by the CWC.

These conclusions do not constitute an endorsement for weak verification provisions in the CWC. To the contrary, stronger verification instruments are essential in the crucial battles ahead to contain the proliferation of unconventional weapons. In particular, breakthroughs are needed in multilateral negotiations to move the international community beyond its traditional protective approach to suspect sites. If negotiators are able to agree upon useful provisions for challenge inspections in the CWC, these

can be extended and adapted to the IAEA's safeguards agreements and to the Biological Weapons Convention. If not, the battle for greater transparency must await subsequent negotiations. Other potential signatories to the CWC will not enjoy the United States' latitude with respect to the requirements for effective verification. Yet few of these likely states parties will press hard for stronger verification measures. Farsighted U.S. leadership is required on this issue.

The credibility and integrity of the CWC's verification provisions must be considered intrinsically important; otherwise, the convention could become an exercise in cynicism rather than a model for international control. Effective challenge inspection provisions can be devised without jeopardizing important secrets unrelated to the convention. With appropriate political direction, the ingenuity that allows states to engage in sensitive research and development can also extend to ingenious procedures that permit foreign access while protecting legitimate secrets. Succeeding U.S. administrations have avoided this obvious middle ground.

Strenuous verification provisions are clearly preferable to lax ones, as long as they allow states to protect secrets unrelated to their obligations under the agreement, and as long as the cost of verification arrangements does not exceed their effectiveness. Provisions to allow for strengthening measures for verification and implementation after entry into force are particularly important if the convention is not to become a static document, much like the IAEA's safeguards agreements. Training and support programs are worth bolstering. The international inspectorate may be constrained by the actions of challenged states, but they should not be limited by their own lack of knowledge and equipment. In addition, ways need to be found to enable a rotating international inspectorate to develop an institutional memory.

In the final analysis, access rights are critical to the credibility and integrity of the Chemical Weapons Convention. The CWC will be a useful agreement even with lax monitoring provisions, but it has the best chance of accomplishing its objectives if managed access to suspect sites is obligatory and not optional. Hortatory language calling for reasonable efforts to satisfy inspection teams is a poor substitute for clear rights and obligations.

Regardless of what the final negotiations over the convention yield, the United States would be wise to set extremely high standards for others to follow in hosting challenge inspections. If it does not, it will be poorly positioned to criticize other states or to draw public conclusions about noncompliance. Alternatively, if U.S. leaders accept high standards for hosting challenge inspections, it makes sense to negotiate similar standards for others to follow.

Notes

1. See John M. Goshko and Trevor Rowe, "U.N. Panel Describes Iraq's Anthrax Threat, *Washington Post*, August 15, 1991, A31, and R. Jeffrey Smith, "Iraq's Secret A-Arms Effort: Grim Lessons for the World, *Washington Post*, August 11, 1991, C1.
2. "Address by Vice President Bush to the Conference on Disarmament: Chemical Weapons Convention, April 18, 1984," in *U.S. Documents on Disarmament, 1984*, Arms Control and Disarmament Agency, Publication 126 (Washington, D.C.: U.S. GPO, 1986), 299-307.
3. For a review of official declarations about adequate verification, see Michael Krepon, *Strategic Stalemate: Nuclear Weapons and Arms Control in American Politics* (New York: St. Martin's Press, 1984), 156-7. The Reagan administration's definition of effective verification was that "the U.S. must have the ability to acquire sufficient information to render a reasonable judgment on whether other parties are complying with the limits of an agreement and its provisions, and to render this judgment in a timely manner, such that we can compensate any risk posed to our security by the violation." (U.S. Congress, House Committee on Foreign Affairs and Senate Committee on Foreign Relations, *Fiscal Year 1986 Arms Control Impact Statements*, 99th Cong., 1st sess., 1986 Joint Committee Print, 53.)
4. U.S. Congress, Senate Committee on Appropriations, *SALT II Violations: Hearings Before a Subcommittee of the Committee on Appropriations*, material submitted for the record, 98th Cong., 2d sess., 1984, 33.
5. A concern raised subsequently by Perle, the threat "of new techniques for the manufacture of lethal chemicals that would render a treaty banning chemical weapons stocks and production facilities largely irrelevant," has not been authoritatively documented and is difficult either to prove or to disprove. (Richard Perle, "The Continuing Threat," in *Europe and America Beyond 2000*, ed. Gregory F. Treverton [New York: Council on Foreign Relations, 1990], 123.)
6. U.S. Congress, House Committee on Armed Services, *Department of Defense Authorization of Appropriations, Fiscal Year 1985*, 98th Cong., 2d sess., 1984, pt. 2, 430. In congressional testimony, Richard L. Wagner, Jr. the assistant to the secretary of defense for atomic energy, warned that the problem of clandestine stocks and production "requires extensive challenge provisions but cannot eliminate risk."
7. The last presidential report on Soviet noncompliance issued during the Reagan administration noted, "Although the Soviet Union has declared the total volume of its chemical stockpile to be 50,000 agent tons, the U.S. seriously questions the accuracy of this figure." ("The President's Unclassified Report on Soviet Noncompliance with Arms Control Agreements," December 2, 1988 (mimeo), 10.) Then-Deputy Assistant Secretary of Defense (Nuclear Arms Control Policy) Robert G. Joseph added in congressional testimony, "I certainly agree with the general statement that the Soviets have not been honest in terms of an accounting of their chemical weapons activities, including production and current stockpile." U.S. Congress, Senate Committee on Armed Services, *Hearings on Department of Defense Authorization for Appropriations for Fiscal Years 1990 and 1991*, 101st Cong., 1st sess., 1989, pt. 6, 236.

8. U.S. Congress, House Committee on Foreign Affairs and Senate Committee on Foreign Relations, *Fiscal Year 1989 Arms Control Impact Statements*, 100th Cong., 2d sess., 1988, Joint Committee Print, 137.
9. U.S. Air Force Symposium, "Developments in the Soviet Union: Implications for U.S. Intelligence," October 21, 1988 (mimeo), 9.
10. The report was entitled "Implications of Soviet Use of Chemical and Toxin Weapons for U.S. Security Interests," *Washington Post*, November 30, 1984, E7.
11. The limitations of sketchy site diagrams have been evident in several exchanges under the terms of the Intermediate-range Nuclear Forces Treaty. See Amy E. Smithson and Michael Krepon, *Strengthening the Chemical Weapons Convention Through Aerial Inspections*, Occasional Paper 4 (Washington, D.C.: The Henry L. Stimson Center, April 1991), 18-19.
12. See Michael Krepon, Peter D. Zimmerman, Leonard S. Spector and Mary Umberger, eds. *Commercial Observation Satellites and International Security* (New York: St. Martin's Press, 1990), especially 201-230.
13. See Giovanni de Briganti, "France Offers Helios Data to Allies," *Defense News*, June 10, 1991, 4.
14. See Melissa Healy, "U.N. Sleuth Credits Allied Data on Iraq," *Los Angeles Times*, October 18, 1991, 12.
15. See endnote 11.
16. See endnote 6.
17. The conclusions in the paragraphs that follow have been derived from confidential interviews with executive branch officials and from technical experts working on chemical weapons verification issues.
18. See Paul Lewis, "U.S. Shows Photos to Argue Iraq Hides Nuclear Material," *New York Times*, June 27, 1991, 12.
19. Fred Hiatt. "Perle's Distrust Shapes U.S. Policy," *Washington Post*, January 2, 1985, A20.
20. Ibid.
21. Kenneth L. Adelman, *The Great Universal Embrace: Arms Summitry—A Skeptic's Account* (New York: Simon and Schuster, 1989), 258.
22. *Department of Defense Annual Report to Congress* (Washington, D.C.: U.S. GPO, 1986), 281.
23. United Kingdom of Great Britain and Northern Ireland, "Verification of the Chemical Weapons Convention: Practice challenge inspections of Government facilities: Analysis of results," CD/1012, CD/CW/WP.304, July 11, 1990, 6.
24. Ibid., 21. Emphasis in the original.
25. Confidential interviews.
26. CD/CW/WP.352, July 15, 1991, 11.
27. At the same time that the revised U.S. position was being table, the difficulties of the UN Special Commission in Iraq were clarifying the importance of combining ground and aerial inspections.
28. See Amy E. Smithson, "Chemical Inspectors: On the Outside Looking In?," *Bulletin of the Atomic Scientists* (October 1991): 23-25.
29. Confidential interviews.

30. See R. Jeffrey Smith, "Stricter Verification Measures Backed for Chemical Arms Ban," *Washington Post*, July 16, 1991, A16; George Leopold, "Critics Blast Inspection Plan," *Defense News*, July 22, 1991, 1; and Gerald F. Seib, "Bush Fires Up Critics of Chemical-Arms Treaty By Forsaking His Tough Site-Inspection Scheme," *Wall Street Journal*, August 15, 1991, A14.
31. See William Colby and Elisa D. Harris, "Look Who's Barring Access to Weapons Sites," *Washington Post*, July 28, 1991, C7.
32. See Leopold, "Critics Blast Inspection Plan," 1.
33. Confidential interviews.
34. See the comments of Bush administration officials in Seib, "Bush Fires Up Critics of Chemical-Arms Treaty," A14, and Leopold, "Critics Blast Inspection Plan," 1.
35. For an elaboration of the elements of the "military significance criterion, see the responses of Secretary of State George Shultz to questions submitted for the record in U.S. Congress, Senate Committee on Foreign Relations, *The INF Treaty: Hearings before the Committee on Foreign Relations*, 100th Cong., 2d sess., pt. 1, 470-71.