Policy Background 3

This chapter surveys the range of policy measures, present and possible, that can be applied to the problem of limiting the spread of weapons of mass destruction. The chapter will also show that if these measures are to have a chance of success, meeting two conditions will be increasingly important. First, policymakers must engage the greatest possible international cooperation for nonproliferation. Second, as a prerequisite to obtaining that cooperation, they must act to strengthen international norms, or rules of acceptable behavior, against the acquisition and use of weapons of mass destruction. To meet those two conditions, policymakers must give the goal of nonproliferation higher priority than they did during the Cold War.

It is by no means certain that the levels of international cooperation needed to contain proliferation can be achieved. Indeed, some analysts have argued that the inherently anarchic nature of the international political arena will make nonproliferation efforts futile.[1] Others agree that the levels of cooperation needed to stop proliferation entail a transformation of international politics, but they believe that with the end of the Cold War, such a transformation has become feasible.[2]

UNITED NATIONS

[1] For example, one argued in 1980 that:

> . . . unless the system of states undergoes a revolutionary transformation, any suggestion that further proliferation can be stopped borders on the absurd. . . In a world of independent states, some proliferation will be inevitable, much as will some war and the threat of it.

John J. Weltman, "Nuclear Devolution and World Order," *World Politics,* vol. *32,* January 1980, p. 192-193. Ted Galen Carpenter, "A New Proliferation Policy," *The National Interest,* summer 1991, pp. 63-72, argues that nonproliferation policies were not only futile, but even counterproductive.

[2] See Randall Forsberg et al., "After the Cold War: A Debate on Cooperative Security," *Boston Review,* vol. 17, No. 6, November/December 1992, pp. 7-19. For further analysis of the linkages between nonproliferation policy and global security policy, see Ashton B. Carter, William J. Perry, and John D. Steinbruner, *A New Concept of Cooperative Security* (Washington, DC: Brookings Institution 1992).

What follows is a menu from which the components of a coherent nonproliferation strategy are likely to be chosen. The menu does not attempt to organize the policy measures discussed into such a strategy, nor to assess their feasibility y or promise. The second report of this study will specify and analyze selected options in greater detail.

Table 3-1 lists the primary international agreements and U.S. national laws that underpin the current nonproliferation regimes. The sections below summarize the measures already in effect in these regimes and identify measures that could intensify or broaden them. The measures are discussed under four broad categories:

- imposing obstacles to those trying to acquire the weapons,
- imposing disincentives to deter proliferants,
- offering rewards to increase the attractiveness of voluntarily forgoing the weapons, and
- offering global or regional security improvements to reduce perceived needs for the weapons.

An additional section addresses the special, urgent problems posed by the breakup of the Soviet Union.

IMPOSING OBSTACLES TO PROLIFERATION

Proliferant nations, particularly the less industrialized ones, generally need materials, equipment, and knowledge from abroad to acquire weapons of mass destruction.[3] Therefore, blocking their access to such supplies can hinder their progress. Methods of blocking access might include:

- use of secrecy to restrict the flow of knowledge;
- . export controls adopted by supplier nations;
- . diplomatic, military, or other actions to stop exports by third parties; or
- actions to stop or discourage experts from giving assistance.

If a proliferant nation nevertheless manages to acquire or build facilities for a weapon program, another kind of obstacle is still possible, although fraught with legal, political, and operational difficulties: taking military or other actions to disrupt or destroy the facilities.

Secrecy

Limiting the spread of nuclear-weapon knowledge through secrecy has been a tool of U.S. policy since the first weapons were created during World War II. Today, although the basic principles of nuclear materials production and nuclear weapon design and manufacture are well known throughout the world, important engineering details and technical shortcuts are still classified by the current nuclear powers. (Despite this secrecy policy, nuclear-weapon states have at various times helped other states develop the weapons: the United States cooperated in the development of the British nuclear weapon program; the Soviet Union helped China before the Sine-Soviet split in 1959; French nuclear assistance may have advanced the Israeli weapon program; China reportedly helped Pakistan; Israel reportedly helped South Africa, although in admitting its past nuclear weapon program, South Africa has denied this.)

The basic knowledge needed to produce chemical and biological weapon agents is much more accessible than that for nuclear weapons. Secrecy may help protect important details of incorporating the agents into more effective delivery systems, but will not be of much use in blocking proliferation of simpler weapons.

National and Multilateral Export Controls

The potency of export controls as an obstacle to proliferation depends on the degrees of:

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[3] Assuming, of course, that they cannot simply buy complete weapona outright. No state yet is known to have bought a complete nuclear weapon, but with the breakup of the Soviet Union, this possibility has become a more pressing concern.

Table 3-l—Primary Institutional Bases of Current Nonproliferation Regimes

Regime	U.S. Legislation	Supplier Groups	Consensual Treaties
Nuclear	Nuclear Non-Proliferation Act, 1978 (NNPA) Foreign Assistance Act, 1961 Export Administration Act (EAA), 1979 (1990 version vetoed, provisions then sustained by Executive Order, Act later reinstated as interim measure) Atomic Energy Act, 1954 Weapons of Mass Destruction Control Act of 1992 Iran-Iraq Non-Proliferation Act of 1992 Freedom Support Act of 1992 (aid to former Soviet republics)	Zangger Committee (Nuclear Exporters Committee), 1971 London Club (adherents to Nuclear Suppliers Guidelines), 1976 Coordinating Committee on Multilateral Export Controls (CoCom), 1949	International Atomic Energy Agency Statute, 1957 Nuclear Non-Proliferation Treaty (NPT), 1970 Treaty of Tlatelolco, 1968 (Latin American nuclear-free zone) Treaty of Rarotonga, 1986a (South Pacific nuclear-free zone)
Chemical	EAA Chemical and Biological Weapons Control and Warfare Elimination Act, 1991 Weapons of Mass Destruction Control Act of 1992 Iran-Iraq Non-Proliferation Act of 1992	Australia Group, 1984 CoCom	Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, 1925 Chemical Weapons Convention (CWC), 1993
Biological	EAA Chemical and Biological Weapons Control and Warfare Elimination Act, 1991 Weapons of Mass Destruction Control Act of 1992 Iran-Iraq Non-Proliferation Act of 1992	Australia Group CoCom	Geneva Protocol, 1925 Convention on the Prohibition of Bacteriological (Biological) and Toxin Weapons (Biological Weapons Convention, or BWC), 1975
Missiles	Arms Export Control Act, 1976 EAA Missile Technology Control Act, 1990 Weapons of Mass Destruction Control Act of 1992 Iran-Iraq Non-Proliferation Act of 1992	Missile Technology Control Regime (MTCR), 1987	None

a The United States is not party to this treaty.

SOURCE: Congressional Research Service and OTA. For a more comprehensive listing of relevant U.S. legislation, see Zachary S. Davis and Warren H. Donnelly, *Non-Proliferation: A Compilation of Basic Documents on the International, U.S. Statutory,* and *U.S. Executive Branch components of Non-Proliferation Policy* (Washington, DC: Library of Congress, Congressional Research service, Dec. 18, 1990), CRS Report 91-85 RCO. See also Zachary S. Davis, *Non-Proliferation Regimes: Policies To Control the Spread of Nuclear, Chemical,* and *Biological Weapons* and *Missiles* (Washington, DC: Library of Congress, Congressional Research Service, Feb. 18, 1993), CRS Report 93-237-ENR. See also Leonard S. Spector and Virginia Foran, *Preventing Weapons Proliferation: Should the Regimes be Combined?* (Muscatine, IA: The Stanley Foundation, 1992).

- proliferants' dependence on outside resources (and their ability to work around blockages of those resources);
- controllability of supplies having valid civil applications, but also usable for producing weapons of mass destruction;
- participation in controls by all suppliers; and
- effectiveness of each nation's monitoring and enforcement of controls.

As more nations advance technologically, the frost three of these factors are likely to decay. This is especially the case for chemical and biological technologies, which are already widely available. In the case of nuclear technologies, although the number of potential suppliers has been growing, many states have also been strengthening and broadening their export control policies. Therefore, changes in the net availability of technology useful for nuclear weapon programs are hard to assess.

Despite the global spread of technology, export controls will remain an important nonproliferation policy tool for many years, especially in the nuclear area. In addition to impeding proliferation, export controls also supply information important for detecting and monitoring it. Nevertheless, both tightening export controls and applying sanctions against foreign violators can have economic as well as political costs. These costs may be deemed worth the return in international security, but they should be acknowledged. First, controls can somewhat restrict international trade. Although the number of export denials is a small fraction of all international transactions, many transactions must be screened in order to detect those that ultimately are denied. Consequently, a wide range of businesses must keep informed about and comply with complex regulations and licensing procedures. Individual companies may find themselves losing significant legitimate sales and the other business opportunities that might have followed those sales. More seriously in terms of U.S. jobs and exports, U.S. firms may also find themselves losing market share to foreign competitors under less stringent controls. In such cases, not only do the U.S. firms lose business, but other suppliers obviate any nonproliferation benefits that the blockage or delay of sales might have had.

Another cost of controls may be imposed on international development policy: tighter control on dual-use technologies may not only hinder weapons proliferation, but it may also stunt the peaceful technological advancement of the importing countries. On the other hand, if controls are narrowly targeted to countries of serious proliferation concern, countries that cooperate with nonproliferation regimes should not find their peaceful development hindered.

NATIONAL EXPORT CONTROLS

Export controls have been a major tool of U.S. nonproliferation policy since the Atomic Energy Act of 1946 (superseded by the Atomic Energy Act of 1954, itself amended several times since then). Table 3-2 summarizes U.S. laws and regulations directed at restricting exports from the United States (or re-export of U.S.-originated items) that could contribute to the proliferation of weapons of mass destruction or of missiles. Other legislation, likely to be introduced in the 103rd Congress, would further restrict proliferation-related exports. A later table (3-4) describes sanctions established under U.S. law against countries or companies that violate export laws and regulations.

MULTILATERAL EXPORT CONTROLS

The United States can help limit proliferation by controlling its own exports and by trying to block aid from other countries to proliferants. Nevertheless, there are too many possible foreign sources of materials, equipment, and knowledge for unilateral U.S. policies to control the problem alone. Imposing restraints on proliferants requires multilateral cooperation to have a chance of being effective. The United States has

Table 3-2—U.S. Unilateral Proliferation-Related Export Control Legislation

Legislation, Regulation, or Executive Order	Description or Comment
Atomic Energy Act of 1954 (as amended)	Sets guidelines for dissemination and restriction of data relating to nuclear weapons. Provides statutory framework for export controls on nuclear trade.
Nuclear Non-Proliferation Act of 1978	Tightens export controls by requiring IAEA full-scope safeguards as a condition for exports of nuclear fuel and reactors. Seeks to establish U.S. as reliable supplier for nuclear reactors and fuels to nations adhering to nonproliferation policies. Seeks to strengthen international controls over transfer and use of nuclear materials and technology. Directs the President to seek agreement from all exporting nations to require recipients of nuclear technology and materials to accept International Atomic Energy Agency (IAEA) "full-scope" safeguards on all peaceful nuclear activities. Further specifies legal guidelines for regulation of nuclear commerce and technical assistance. Directs the President to publish procedures for the Commerce Department to control U.S. exports of "dual-use" items that could be used for nuclear explosives. Defines jurisdiction of Departments of State, Energy, Defense, and Arms Control and Disarmament Agency over nuclear exports.
Export Administration Act of 1979 and Executive Order 12735 (Nov. 16, 1990) on Chemical and Biological Weapons Proliferation	Commerce Department, after insulting with State and Defense, issues Export Administration Regulations; its Bureau of Export Administration administers export licenses on controlled commodities (including nuclear, chemical, or biological weapons-related or missile-related, as well as other items controlled for national security or foreign policy purposes). Authority extends primarily over dual-use goods. EAA of 1979, the primary authority for U.S. export controls, expired Sept. 30, 1990; President Bush vetoed successor act but extended export control authority by executive order under emergency power (conferred by the International Emergency Economic Powers Act of 1977). In 1992 Congress passed an interim renewal of the 1979 Act.
Chemical and Biological Weapons Control and Warfare Elimination Act of 1991	Amended EAA to require Secretary of Commerce to establish and maintain "a list of goods and technology that would directly and substantially assist a foreign government or group in acquiring the capability to develop, produce, stockpile, or deliver chemical or biological weapons" if licensing them would be effective, and then keep a list of countries for which exporters must obtain validated export licenses.
Arms Export Control Act of 1976	Authorizes State Department (through its Center for Defense Trade) to control by licenses items (including chemical and biological warfare agents and missiles) covered by International Traffic in Arms Regulations and U.S. Munitions List. In contrast to Export Administration Regulations (above), authority of this act extends mainly over sales of conventional weapons and weapon components.

1 Many other laws address nonproliferation issues; this list only covers the major ones.

SOURCE: OTA and Congressional Research Service (see table 3-1.)

Table 3-3-Current Multilateral Proliferation-Related Export Control Agreements

Agreement	Provisions or Comment
Treaty on the Non-Proliferation of Nuclear Weapons (NPT) (entered Into force Mar. 5, 1970)	Nuclear weapon state parties (now Including China, France, Russia, United Kingdom and United States) agree not to transfer nuclear devices to any recipient, nor to assist any non-nuclear-weapon State to make or acquire them, All state parties agree not to transfer nuclear materials or related equipment to any non-nuclear-weapon state unless the latter will accept International Atomic Energy Agency safeguards (monitoring) over the materials.
Nuclear Suppliers' Guidelines: Nuclear Exporters Committee (Zangger Committee) and London Suppliers Group (London Club)	To strengthen and better implement NPT export restrictions, seven NPT members who were major nuclear suppliers (the Zangger Committee) agreed Informally in 1971 on a list of nuclear technology items, the transfer of which would trigger application of IAEA safeguards to ensure that the items were not used to develop nuclear explosives. Forming the "London Club," in 1976,8 more nuclear supplier nations (including France, not then an NPT member) joined those on the Zangger Committee and agreed on a set of Nuclear Suppliers' Guidelines, under which "trigger list" exports would further require physical security for transferred items, acceptance of safeguards on facilities replicated from London Club member designs, and prohibitions against retransfer of Items to third parties; suppliers also agreed to "exercise restraint" in transfer of nuclear-sensitive facilities, technologies, and weapons-usable materials. Total of 27 nuclear suppliers agreed In April 1992 to an additional list of 65 categories of dual-use items to be controlled. Participating nations have adapted these controls voluntarily. There is no international mechanism for monitoring and enforcement, but a Japanese-administered secretariat in Vienna is now overseeing the application of the dual-use guidelines.
Australia Group	Group of Industrialized nations agreed in 1984 to establish national controls on chemical weapon agents and precursor chemicals that could be used to make them. Group, then with 22 members, agreed in March 1992 to add to the control list organisms, toxins, and equipment that might be used to make biological weapons. Has no formal coordination, monitoring, or enforcement, but does have informal agreements to share intelligence and notice of export denials. Eleven other states apply some or all Australia group standards.

attempted to enlist other supplier countries in nonproliferation export controls. Table 3-3 summarizes the results of these efforts.

Blocking Exports From Third Countries

The purpose of sanctions against suppliers to proliferant nations is primarily deterrence, not revenge. The hope of the policymakers is that potential suppliers will not want to risk U.S. sanctions just to get the business of the proliferants.

United States laws and regulations provide for sanctions (e.g., criminal penalties or government procurement embargoes) against U.S. and foreign companies that violate U.S. export regulations. Short of criminal indictments, the United States may also impose trade sanctions on foreign firms that it believes are violating internationally agreed export controls.[4] Some of the laws also provide for trade sanctions against foreign individuals or companies that export items of types restricted by the United States (whether they are U.S. goods or not) when the parties know that their exports

[4] For example, the United States determined in 1992 that the Russian company Glavkosmos was violating the terms of the Missile Technology Control Regime by agreeing to sell cryogenic rocket motors to India; it then imposed U.S. export and import sanctions both on Glavkosmos and on the Indian Space Research Organization.

Table 3-3-(Continued)

Agreement	Provisions or Comment
Missile Technology Control Regime (MTCR)	Group of supplier nations agreed in 1987 not to transfer complete rocket systems or subsystems, or production facilities for them. Group now consists of 23 states, plus 2 "partners"; other states, including Argentina, Israel, Russia, and China, have separately promised United States that they will abide by MTCR constraints. Members also agree to restrain exports of other components, material, or technology that would be useful in missile production. Applies to missiles of range over 300 km; also applies to any missiles which the member government judges to be intended for use with weapons of mass destruction. Agreement is subject to no formal coordination, monitoring, or enforcement.
Coordinating Committee on Multilateral Export Controls, (CoCom)	Group of U.S. allies in 1949 agreed not to export listed items (including some related to missiles and weapons of mass destruction) to Communist countries. Controls have been relaxed after collapse of the Soviet bloc. CoCom is unique among supplier agreements in attempting to establish common standards of enforcement of national export controls among the members; however, it is ill-suited to control proliferation-sensitive technology because the very states that were its targets-Communist and former-Communist states—would have to be members of any nonproliferation export control regime. CoCom might serve as model for other agreements.[1]
U.S.-foreign bilateral arrangements	As noted above, in some cases the United States obtains bilateral agreement with individual nations to abide by supplier group restraints. State Department also issues diplomatic demarches, urging individual foreign governments to impose controls on specific exports of concern discovered by the United States.

[1] See United States General Accounting Office, *Export Controls: multilateral efforts to improve enforcement: Report to the Subcommittee on International Economic Policy and Trade, Committee on Foreign Relations* (Washington, DC: GAO/NSIAD-92-167, May 18, 1992).

SOURCE: OTA and Congressional Research Service (see table 3-1).

contribute to proliferation. Some other supplier nations have legal sanctions comparable to those of the United States.

In some cases, the U.S. laws provide for aid or trade sanctions (e.g., cutoffs of economic aid, military aid, or nuclear cooperation) against *countries,* rather than just companies or persons, that supply the wherewithal for proliferation to other countries. Finally, the President may also take diplomatic actions to try to punish countries that defy U.S. nonproliferation policies. Table 3-4 surveys U.S. laws that authorize or require sanctions against foreign suppliers.

Other sanctions against suppliers-including *nations,* not just "persons' '-contained in legislation proposed in the 102nd Congress and likely to be reintroduced in the 103rd ares:

- denial of most-favored nation trade status,
- forfeiture of property and assets,
- denial of assistance from international institutions in which the United States participates,
- denial of arms transfers from the United States,
- denial of U.S. Export-Import Bank credits,
- termination of codevelopment and coproduction agreements,
- blocking of international financial transactions,
- suspension of aircraft landing rights, and
- prohibition of loading and unloading of cargo from sanctioned countries in U.S. ports.

The President can already take several of these actions at his own discretion under his powers to

[5] See U.S. Congress, Congressional Research Service, Foreign Affairs and National Defense Division, ***Weapons Nonproliferation Policy and Legislation: 102nd Congress, 92-429*** F (Washington, DC: Congressional Research Service, July 3, 1991, Updated May 5, 1992).

Table 3-4--Legislative Bases of U.S. Sanctions Against Suppliers

Law	Description or Comment
Atomic Energy Act	Requires cutoff of nuclear cooperation with states that transfer U.S.-supplied nuclear materials or technology without U.S. permission. Requires cutoff of nuclear cooperation with nuclear-weapon states that assist, encourage, or induce a non-nuclear-weapon state to engage in activities that involve nuclear materials and are significant for the making or acquisition of a nuclear explosive device.
Glenn (1977) and Symington (1977) amendments (sections 669 and 670) to Foreign Assistance Act of 1961 (FAA)	Require President (unless he issues waiver) to cut off economic and military aid to countries that supply the wherewithal for enriching uranium or extracting plutonium from spent nuclear fuel when all the recipient's nuclear facilities are not under IAEA safeguards.
Chemical and Biological Weapons Control and Warfare Elimination Act of 1991	Requires President (unless he issues waiver) to deny U.S. Government procurement or any U.S. imports from 'foreign persons' (individuals or firms) knowingly and materially contributing to chemical or biological weapons proliferation through the export of goods or technologies either covered by the Act, or that would be covered by the Act if they were produced in the United States.
MissileTechnology Control Act, 1990 (Title XVII of the FY 1991 National Defense Authorization Act, which added a chapter to the Arms Export Control Act and sections to the Export Administration Act of 1979)	Denies U.S. Government contracts or export licenses to U.S. or foreign persons who improperly export missiles or major components; Denies U.S. Government missile-related contracts or export licenses to those who improperly export missile components, materials, or test and production equipment; Provides for Presidential waivers of sanctions.
Iran-Iraq Nonproliferation Act of 1992 (A section of the FY 1993 Defense Authorization Act)	Extends sanctions to Iran that already apply to Iraq: a variety of sanctions against individuals, companies, and countries who knowingly assist Iran or Iraq to acquire weapons of mass destruction.

SOURCE: Adapted by OTA from Congressional Research Service, 1992 (See table 3-l),

conduct foreign policy. In November 1990, President Bush vetoed the revised Export Administration Act (since reinstated on an interim basis) that would have mandated sanctions in some circumstances. He nevertheless announced, in an Executive Order dealing with chemical and biological weapon proliferation, that the United States would implement trade sanctions against violators of U.S. law. In December 1990, the Bush administration issued its Enhanced Proliferation Control Initiative, which (among other things) formalized the President's commitment to impose sanctions without a statutory requirement to do so.

Hampering Transfer of Expertise

Exports of equipment and blueprints are one way to transfer weapon technologies; export of experts is another. Proliferants may hire the services of foreign experts to work directly on their weapon programs, to advise their own personnel, or to train their own experts. Alternatively they may send their own scientists and engineers abroad for education and training applicable to weapon programs.

Supplier nations have some possibilities for control over such transfers of expertise. They can enforce secrecy laws that make it illegal for those with classified knowledge to transfer the information. They can make it illegal to aid or abet proliferants (e.g., only since the Foreign Trade and Payments Act of 1992 have German courts been able to impose prison sentences on German engineers abroad whose activities promote the development or manufacture of nuclear, biological, or chemical weapons; the U.S. Atomic

Energy Act has long prohibited U.S. nationals from sharing nuclear technology with others.)

Another way to restrict the outflow of experts is not to punish, but to reward. For example, Western nations are attempting to establish science and technology centers to employ some of the unemployed or underemployed former Soviet weapon scientists who might otherwise be tempted to emigrate to proliferant countries to work on weapons of mass destruction.

It is much more difficult to limit education of foreigners in disciplines that could in principle be applied to weapon development. For example, nuclear physics, chemical engineering, and biochemistry may be useful for nuclear, chemical, or biological weapon programs, but they also have fully legitimate civilian applications. Indeed, the Non-Proliferation Treaty (NPT), the Chemical Weapons Convention (CWC), and the Biological Weapons Convention (BWC) all stress the obligation of advanced countries to extend peaceful technical training to less developed countries.

Brains are multiuse instruments. To bar foreign nationals from educational institutions on the grounds that they might someday work on weapons would exact a high cost: it would damage the openness in which scholarship thrives, and it would deprive developing countries of legitimate technical advancement.[6] On the other hand, somewhat less draconian policies might be considered. First, governments could record and analyze the subjects of research and study of foreigners to see if suspicious patterns emerge for particular countries. Such a measure might yield additional information about proliferation activities, even if it did not itself serve as a means of control. Second, the citizens of specific countries could be singled out for denial of educational services if their countries were suspected of developing weapons of mass destruction, or if their countries failed certain criteria, such as joining and adhering to the NPT or the CWC. Such a policy, however, would require putting nonproliferation above other concerns about relations with those countries-it would amount to treating those states as international pariahs.

Forcible Interference

Perhaps the first clear example of a military response to a proliferation threat was the Israeli bombing of the Iraqi Osirak nuclear reactor in 1981. This step set back the Iraqi nuclear weapon program but did not end it. The bombing did cause Iraq do a better job of concealing it. In 1991, as part of Operation Desert Storm, the U. N.-backed coalition against Iraq attacked and destroyed facilities believed to be connected to Iraqi mass-destruction weapon programs. The U.N. Security Council, as part of the cease-free it imposed on Iraq, required elimination of all such facilities (see below).

Other types of forcible interference besides direct military attack might include:

PETR PAVLICK, IAEA

In the wake of Operation Desert Storm, the U.N. Security Council ordered the destruction of Iraqi facilities connected with weapons of mass destruction. A nuclear facility at Al-Atheer was demolished on May 31, 1992.

[6] Since a significant proportion of U.S. college engineering teachers are of foreign origin, U.S. education might also pay a price for such a policy.

- sabotage of equipment or materials before transfer, either on the territory of its supplier or in transit;
- military interdiction of equipment or material;
- sabotage of equipment or materials after import; or
- assassination of key personnel (explicitly forsworn by the United States).

While the latter measure is not appropriate for the United States, it is not unheard-of in international affairs. Canadian ballistics expert Gerald Bull, who helped Iraq design its ''supergun," was murdered in Brussels in 1990. Later, when U.N. inspectors requested the names of people in the Iraqi nuclear program, Iraqi officials refused, saying they feared these people might be targeted for assassination.

The U.N. Security Council declared in January 1992 that the proliferation of weapons of mass destruction ". ., constitutes a threat to international peace and security. " This phrasing, referring to a key clause in the United Nations Charter, makes it conceivable that sometime the Council might approve the use of military force to destroy facilities for producing or storing weapons of mass destruction. Even so, such authority is likely to be highly circumscribed, lest states interpret it as license to attack others with impunity. Moreover the necessary steps of deliberation, approval, and preparation would likely give considerable advance notice to the targeted state. Such an internationally sanctioned strike would therefore be poorly suited for missions requiring surprise.

As a result, states believing their vital interests to be at stake may decide to take unilateral military action against some cases of proliferation. However, if such actions are not sanctioned by the international community-at least after the fact—they risk damaging the international consensus on cooperative nonproliferation efforts. Nations committing the action may find themselves accused of violating international law. Moreover, an attack may even build sympathy for the victim, ultimately lessening the obstacles to his weapon program.

Whether such an attack were internationally sanctioned or not, it would also risk retaliation or even full-scale war by the target country against either the attacking nations or their allies.

It seems unlikely that international authorities will ever sanction covert activities like sabotage, let alone assassination, as means of nonproliferation. Almost by definition, covert actions are ones that states are unable or unwilling to defend before the international community. Countries may decide to take such measures for the same compelling reasons they would use military force unilaterally. In doing so, however, they risk exposure and loss of credibility as members of an international community that opposes proliferation on grounds of the common good.

Imposing Obstacles: The Special Case of Iraq

Export controls and other nonproliferation measures-at least as administered in the 1980s—failed to prevent Iraq from deploying and using chemical weapons or from trying to develop nuclear and biological weapons as well as indigenously produced ballistic missiles. In the wake of the war to liberate Kuwait, the United Nations Security Council undertook to reverse the proliferation of these weapons to Iraq. As a condition of cease-free, the Security Council decided that Iraq should:

- give up all chemical and biological weapons, all stocks of agents, and all related subcomponents, as well as all related research, development, support and manufacturing facilities;
- give up all ballistic missiles with a range greater than 150 km as well as related major parts and repair and production facilities;
- agree not to acquire or develop nuclear weapons or nuclear-weapon-usable material or any subsystems or components or any

research, development, support or manufacturing facilities related to them;
- declare the locations, amounts, and types of all the banned items;
- submit to unrestricted U.N. inspections and supervision of the elimination of the banned items; and
- submit to future ongoing monitoring of verification of its compliance with the U.N. conditions.[7]

The sanctions for noncompliance with the cease-fire agreement are discussed below. The United Nations Special Commission established to oversee Iraqi compliance, along with the International Atomic Energy Agency, appears to have exposed and seen to the elimination of most of the Iraqi facilities and items covered by the resolution. Throughout, Iraq has tried to conceal what it could and in other ways obstruct the U.N. inspections; it has also refused to acknowledge its obligation to submit to long-term monitoring of its continued compliance with the cease-fire terms. For its part, Iraq has made it clear that it sees the United Nations as a tool of United States policy to hamstring Iraq, not as a legitimate international authority. Few doubt that, given the opportunity, Iraq will attempt to rebuild its programs for weapons of mass destruction. **Moreover, elimination of such programs based on military conquest probably does not bear much promise as a global nonproliferation measure.**

Nevertheless, United Nations Resolution 687 did establish Security Council positions that conceivably could set precedents for future international cooperation to limit proliferation. In imposing the cease-fire conditions on Iraq, the Council:

- noted ''. . . the importance of all States adhering to . . . [the Biological Weapons Convention] and encouraged the forthcoming review conference' . . . to reinforce the authority, efficiency and universal scope of the convention. . .";
- stressed ''. . . the importance of. . . work on a Convention on the Universal Prohibition of Chemical Weapons and universal adherence thereto"; and
- declared its awareness of". . . the threat that all weapons of mass destruction pose to peace and security in the area and of the need to work towards the establishment in the Middle East of a zone free of such weapons.

IAEA

In a situation unlikely to be repeated in the case of other potential proliferants, the U.N. Security Council required Iraq to submit unilaterally to inspections of facilities relating to weapons of mass destruction. Iraq has frequently attempted to obstruct such inspection. Here IAEA inspector David Kay talks with Iraqi military authorities after they denied access to sites at Falluja in June 1991.

DISINCENTIVES TO PROLIFERANTS

Economic Sanctions

Related to the sanctions against suppliers (see table 3-4) is a set of sanctions aimed at deterring potential proliferants. Sanctions are one form of disincentive intended to make acquiring weapons

[7]U.N. Security Council, ***Resolution 687*** (S/RES/687 ***(1991),*** Apr. 3, 1991),

of mass destruction seem less than worthwhile. Should a country move toward acquiring the weapons, or violate provisions of agreements not to acquire them, other countries may apply sanctions in an attempt to enforce compliance with nonproliferation norms.[8]

Current U.S. laws and regulations stress economic, rather than other, sanctions toward potential proliferants. The Treaty on the Non-Proliferation of Nuclear Weapons (Nonproliferation Treaty, or NPT) implies a mild form of economic sanction by tying cooperation in civilian nuclear technology for non-nuclear nations to membership in the Treaty. In general, the multilateral agreements attempting to limit proliferation do not contain enforcement mechanisms, except for referral to the U.N. Security Council. In the case of Iraqi weapons of mass destruction, however, the United States and the United Nations have gone well beyond the provisions of the multilateral nonproliferation regimes in which abstinence is voluntary.

Table 3-5 summarizes legislative bases for U.S. sanction policies against proliferant nations.

Although the above discussions center on the legislative bases for sanctions against **suppliers and proliferants, the executive branch has wide latitude for discretion and leadership (or default) on those matters. In** addition, the President can act to mobilize international cooperation on nonproliferation. For example, only one (the NPT) of the international, proliferation related agreements listed in table 3-3 is a formal treaty subject to Senate advice and consent; the others are essentially executive agreements.

Through executive branch powers to conduct foreign aid and trade policies, the President can selectively apply what amounts to export controls to specific countries. Through bilateral diplomatic exchanges, he can encourage other nations to restrain their exports. Likewise, he can threaten potential proliferants with economic or other sanctions under his foreign policy powers. For example, U.S. diplomatic initiatives played a major role in the 1970s in persuading South Korea and Taiwan to reverse what seemed to be nascent nuclear weapon programs. On the other hand, the effectiveness of legislated export controls and sanctions depends on conscientious executive branch enforcement; moreover, the laws usually allow the President to waive sanctions at his discretion.[9]

In addition to his diplomatic responsibilities, the President also manages the U.S. intelligence agencies. Intelligence plays a key role in identi**fying which nations should be subject to special export limitations, in discovering the actual end uses of exported goods, and in monitoring the exports of other nations to potential proliferants.** Along with Presidential management, congressional oversight can help set U.S. intelligence priorities in these areas. (See box 3-A for discussion of the implications of using intelligence in nonproliferation policy.)

Stronger Diplomatic and Military Responses

Beyond the economic sanctions listed above (which could be applied to proliferant nations as well as to suppliers), disincentives might include a variety of threatened responses that would make owning and using weapons of mass destruction seem less attractive. The effectiveness of many of these threatened actions will depend, like other nonproliferation measures, on the degree of international cooperation behind them. The presence of a strong international norm against acquiring or using the weapons will be

[8] The IAEA Statute, the CWC, and the BWC all explicitly invite members to bring treaty violations to the attention of the U.N. Security council.

[9] See Carroll J. Doherty, "Foreign Policy Rules Riddled With Presidential Loopholes," *Congressional Quarterly,* Dec. 5, 1992, pp. 3753-3758. Presidents have frequently vetoed legislation that they believed infringed on their foreign policy prerogatives by limiting their discretion.

Table 3-5--Legislative Bases for U.S. Sanctions Against Proliferant Countries

Law	Description or Comment
Nuclear Non-Proliferation Act of 1978 amendment to the Atomic Energy Act	Termination of nuclear exports if nation: . detonates a nuclear explosive device, . terminates or abrogates IAEA safeguards, . violates an IAEA safeguards agreement, . engages in activities involving nuclear materials and having direct significance for manufacture or acquisition of a nuclear explosive device. Prohibits sales of nuclear reactors and fuel to non-nuclear-weapon states that do not accept IAEA full-scope safeguards on all their nuclear installations.
Glenn-Symington amendments to Foreign Assistance Act (FAA), 1976 and 1977	Cutoff of military and economic assistance to nations: ● receiving wherewithal for enriching uranium or reprocessing plutonium, unless all such facilities and materials are placed under IAEA safeguards, . receiving a nuclear explosive device, or . detonating a nuclear explosive device.
Solarz Amendment to FAA, 1985	Requires President (unless he issues waiver) to cut off aid to any country that illegally exports, or attempts to export, from the United States nuclear wherewithal that would "contribute significantly" to the ability of a country to construct a nuclear device.
Pressler Amendment to the FAA, 1985	In the 1980s, Presidents Reagan and Bush waived (as allowed by congressional amendments to the Act) the requirements of the Foreign Assistance Act to cut off aid to Pakistan because of its nuclear weapons program; In 1985, Congress added an amendment requiring the President to cut off aid to Pakistan unless he declared in writing that "Pakistan does not possess a nuclear explosive device and that the proposed U.S. assistance program will reduce significantly the risk that . . . [it will]"; in 1990, the President stopped such certifications, and aid stopped (although commercial military sales continued).
Chemical and Biological Weapons Control and Warfare Elimination Act of 1991	Requires President, on request of Chairman of House Foreign Affairs Committee or Senate Foreign Relations Committee, to report whether a specified government has used chemical or biological weapons; If use determined, mandates sanctions including: foreign aid cutoff, arms sales and military financing cutoff, cutoff of U.S. Government credit or other financial aid, cutoff of exports of any controlled national security goods and technology; If, within 3 months, President does not certify that country has ceased using the weapons, provided assurance that it will refrain in the future, and allowed outside inspections, additional sanctions are at least three of the following: U.S. opposition to multilateral financial or technical aid, prohibition of U.S. bank loans, ban on all exports (except agricultural), ban on imports originating in the country, downgrading of diplomatic relations, suspension of aviation rights; Presidential waivers of the sanctions are possible.

SOURCE: Office of Technology Assessment, 1993.

especially important to getting that cooperation in the cases of those more severe measures.

Preparations to carry out such measures maybe seen as efforts not only to deter further proliferation, but to manage the consequences of proliferation when it occurs (see section below, ''When Nonproliferation Fails"). Coercive--or threatened—responses to proliferant states include:

- adversaries equipping themselves with comparable weapons or with effective defenses against them,
- countervailing military alliances,
- diplomatic isolation,
- trade embargoes,
- bilateral or multilateral promises to defend or assist victims of aggression or use of weapons of mass destruction,

Box 3-A-intelligence Dilemma

Acquiring weapons of mass destruction is usually a clandestine activity. National intelligence agencies, particularly those of the United States, are likely to have the most complete information on who is trying to get what and who is selling what. However, publicly revealing this information increases the chances that the sources supplying it will be shut off. This principle has several implications for formulating nonproliferation policy:

- it increases the temptation to emphasize unilateral or bilateral steps to block specific U.S. exports or foreign transfers, as opposed to multilateral action, which requires broad sharing of information;
- . it challenges intelligence agencies and policy makers to find ways to share findings with multilateral organizations that monitor proliferation (e.g., the U.N. Special Commission on Iraq and the International Atomic Energy Agency);
- it places a premium on increasing the transparency of international transactions and national weapons programs by means of agreements among nations to report their actions to international bodies;
- it requires establishing the ability of international bodies to synthesize and act upon the data coming from transparency reports, unclassified sources, and individual national intelligence agencies;
- it forces intelligence agencies constantly to develop new sources of information when old sources are compromised by the overt use of their product; and
- it necessitates the development of unclassified sources of information that can be used in international fora.

SOURCE: Office of Technology Assessment.

U.S. NAVY

Under some circumstances, the international community may impose economic sanctions on a proliferant nation. The United Nations imposed an embargo on Iraq after its invasion of Kuwait. Here, the Navy's U.S.S. Pratt (in distance) has stopped a Turkish cargo ship bound for Iraq. The ship was found to contain only foodstuff and was allowed to proceed,

- collective international assistance to victims of aggression or use of weapons of mass destruction, and
- military response to acquisition or use of the weapons.

In 1991, U. S., Coalition, and U.N. actions toward Iraq illustrated a range of possible military responses to proliferation. (Although eliminating Iraqi weapons of mass destruction was not a direct cause of the Coalition military intervention, that goal did become an objective of the war and a condition of cease-fire.) As noted in the section above on imposing obstacles, one military response to proliferation is to attempt to destroy the means of production of the weapons before they can be fabricated and deployed. A second is to attempt to destroy weapons already built before they can be used. A third is to employ defensive measures to try to neutralize the weapons (either


VADIM MOUCHKIN/IAEA

One military response to proliferation is that taken by coalition forces during Operation Desert Storm: destruction of potential weapon facilities. Here, IAEA inspectors examine the bomb damage to the IRT-5000 research reactor at Al-Tuwaitha.

passive measures, e.g., gas masks and protective suits, or active defenses, such as antiballistic missiles). A fourth approach, embodied in Security Council Resolution 687 and related resolutions, is to use or threaten military force to coerce the proliferant into surrendering the weapons and their means of destruction. Finally, in a step not yet (July 1993) taken in Iraq, one might force a change of governmental regime to one that would voluntarily forswear the weapons of concern.

Benefits and Limits of Coercion

Imposed nonproliferation measures--obstacles and disincentives—may be necessary, and perhaps effective, in the short run. In the near term, the proliferation problem seems limited to a handful of countries in Northeast Asia (North Korea), South Asia (India and Pakistan), and the Middle East. Continuing and strengthening externally imposed obstacles may slow the movement of these countries toward visible arsenals of mass destruction weapons. It seems unlikely, however, that there will be more imposed reversals like that of Iraq, which was the byproduct of Iraq's overwhelming defeat in a war fought for other reasons.

Supplier-imposed obstacles and disincentives can significantly raise the costs of acquiring weapons of mass destruction, particularly nuclear weapons. In so doing, they can buy valuable time during which an aspiring proliferant may undergo changes of wealth, policy, or political regime that might arrest its weapon programs. Regional security environments can improve. States can reassess the cost and worth of weapon programs. The international community can strengthen the consensual nonproliferation regimes--the NPT, the CWC, and the BWC. Even so, in the longer term, states that remain determined to acquire these weapons will likely be able to do so. The technical knowledge and skills enabling their development will continue to spread through international education, communication, and emigration. Industrial technologies and equipment useful for military research, development, and production frequently have reasonable civil applications: preventing their spread even to countries of proliferation concern will not always be feasible.[10]

For the longer run, imposed obstacles to proliferation may turn out to be surmountable hurdles, not impenetrable walls, In the case of India, one analyst argues that although a policy of technology denial did create problems for Indian nuclear work,

> . . . the long-term effects of the policy have been to promote the indigenous development of nuclear and fuel-cycle technologies in the Third World. Technical constraints can buy time but they cannot resolve the proliferation problem or

10 Nevertheless, the rates of spread of, and the potential effectiveness of export control on, necessary technologies for nuclear, chemical, and biological weapons, and for ballistic missiles vary. See Aaron Karp, *Controlling Weapons Proliferation in the 1990s: The Role of Export Controls* (Ebenhausen, Germany: Stiftung Wissenschaft und Politik, Forschungsinstitut Fuer Internationale Politik und Sicherheit, September 1992). See OTA background paper on technologies underlying weapons of mass destruction for discussions of the relevant technologies.

> contain the indigenous forces of technology in the Third World.[11]

Moreover, coercive attempts to block proliferation maybe perceived as unfair challenges, not as programs to promote international peace and stability. A Pakistani diplomat has complained that U.S. sanctions against Pakistan unfairly single out his country but bring no pressure to bear on India. He went on to threaten that sanctions could have the opposite of their intended effect:

> To add insult to injury, some elements in Congress are focusing on the perfectly legitimate commercial sale of military spare parts to Pakistan. Achieving this short-sighted objective would cripple the operational functioning of the Pakistan armed forces and might impel the government of Pakistan to pursue other military purchases and resume development of its nuclear program.[12]

(It should be noted that there are no indications that Pakistan has suspended its nuclear program, which has very likely already produced weapons, so this threat to "resume development' is disingenuous.)

Insofar as domestic support for nuclear weapon programs is based on sentiments of national pride and autonomy, coercive measures may actually reinforce motivations to persevere.

Both Indians and Pakistanis have argued that export-control regimes are mainly an attempt to deny Third World countries access to nuclear and other technology needed for peaceful purposes. For example, the President of Pakistan, speaking at the Pakistan Institute of Nuclear Science and Technology:

> . . . we believe that the cherished and noble goal of non- proliferation must not degenerate into an essay in evolving a technical fix or a ploy to eternise technological imperialism, denying the fruits of science to those who genuinely want to use them for peaceful purposes.[13]

The best chance for nonproliferation in the long term lies in building a consensus among potential proliferants that it is in their interests to refrain jointly from acquiring the weapons.

REWARDS FOR ABSTENTION

Imposing obstacles to proliferation and threatening to punish potential proliferants are essentially coercive strategies. Another strategy is consensual: offer benefits in exchange for self--restraint. One such trade-support of peaceful applications of atomic energy in exchange for forgoing nuclear weapons-was promised in the NPT. Benefits offered in return for consent not to acquire weapons of mass destruction might include economic inducements, such as:

- financial assistance,
- technical assistance, and
- exemptions from nonproliferation export controls on dual-use items.

Another set of benefits could be broadly categorized as improvements in security that reduce the perceived need for or appeal of the weapons. Security benefits might include:

- agreement by potential adversaries not yet owning weapons of mass destruction that they also will forgo them,
- assurances by existing owners of weapons of mass destruction that they will not threaten to use them,
- reduction of the role of weapons of mass destruction in international relations,
- monitoring or confidence-buildi.ng measures to help verify that potential adversaries are forgoing the weapons,

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11 Brahma Chelaney, ''South Asia's Passage to Nuclear Power,'' *International Security,* vol. 16, No. 1, summer 1991, p. 53.

12 Ali Sarwar Nazvi, deputy chief of mission of Embassy of Pakistan, letter to the *Washington Post*, July 16, 1992, p. A-23.

13 Ghulam Ishaq Khan, text of speech of May 25, 1992, from the *Pakistan Times* of May 26, 1992, pp. 1-2, as reprinted in JPRS-TND-92-017, June 3, 1992, p. 12.

- broader regional or global arms control arrangements that reduce conventional weapon threats,
- foreign commitments to come to the defense of or otherwise assist a nation if it is attacked (with or without weapons of mass destruction),
- regional security arrangements that more broadly reduce the chances of war with local adversaries, or
- global security arrangements that reduce the chances of attack from regional or extraregional adversaries.

Following a general discussion of the question of addressing motivations for proliferation, this chapter section addresses each of these measures in turn.

Addressing Motivations

Persuading potential proliferants of the benefits of going without weapons of mass destruction has been partially successful in the past. More than 150 non-nuclear countries have ratified or acceded to the NPT, many of which are technically capable of building nuclear weapons; most that are capable are refraining. The CWC has been signed by numerous nations that could, but almost certainly will not, acquire chemical weapons. On the other hand, a few countries have refused to deny themselves the nuclear option, while one or two others (Iraq and possibly North Korea) have violated their agreement to abstain. Several have declined initially to join the CWC, although hope remains that they can be brought in. Several are suspected of violating their BWC obligations.

in its 1977 report, *Nuclear Proliferation and Safeguards,* OTA found that

> The technical and economic barriers to proliferation are declining as accessibility to nuclear weapon material becomes more widespread. Consequently, the decision whether or not to acquire a nuclear weapon capability has become increasingly a political one. The choice will turn on whether a nation views the possession of such a capability as being, on balance, in its national interest.[14]

The conclusion that, in the long run, motivations are key still holds true. It applies even more strongly to chemical and biological weapons than to nuclear weapons, because technologies for the former are so much more accessible. **Ultimately, nonproliferation policies will have to find ways of showing leaders still desiring weapons of mass destruction either that their goals can be met in other ways or that the price of the weapons route is too high.**

Factors that make it difficult to persuade some nations to forgo weapons of mass destruction include:

- the perceived value of the weapons,
- double standards applied to those who already have nuclear weapons and ballistic missiles and those who do not,
- domino effects, and
- the entrenchment of proliferation in conventional military rivalries.

The subsections below discuss these factors.

PERCEIVED VALUE OF WEAPONS

For different countries, the appeal of weapons of mass destruction may lie in the national pride or international status they seem to confer, their deterrent value, or their military utility. Nuclear weapons in particular have been associated with great power status (see table 3-6 for summary of nuclear proliferation motives). That the five permanent members of the U.N. Security Council are all nuclear powers, and show no signs of wanting to renounce that status, must enhance the perceived value of the weapons. Nuclear weapons played multiple deterrent roles during the Cold War. Their sheer destructive power makes them attractive to military planners. Even so, the apparent commitment of the two largest nuclear powers, the United States and the Soviet Union

[14] U.S. Congress, Office of Technology Assessment (Washington DC: U.S. *GPO,* 1977), P. 11.

Table 3-6-Possible Motivations for Nuclear Proliferation

Category	Motive
Military power	Deter nuclear attack
	Redress conventional arms asymmetries with rivals
	Seek military superiority over rivals
	Anticipate or match nuclear weapons of rivals
	Intimidate neighbors or rivals
	Deter intervention by extra-regional powers
International political status	Enhance regional political status
	Enhance global status
	Enhance image of technical prowess
Domestic politics	National pride or morale
	Satisfy military groups
Economic improvement	Scientific, technological or industrial spinoffs

SOURCE: Adapted from Stephen Meyer, *The Dynamics of Nuclear Proliferation* (Chicago, IL: University of Chicago Press, 1984), pp. 46-74.

(and now Russia), to dramatic reductions in their nuclear forces is at least a step in the direction of lowering the prominence of nuclear weapons in international relations.

As noted in chapter 2, South Africa added a reverse twist to the motive of deterring outside intervention: it hoped that its threat to use nuclear weapons in a southern African conflict would induce the United States to intervene in its favor to forestall that use.

Chemical and biological weapons programs are more likely to be influenced by military power motives than by the other factors cited in table 3-6. These weapons do not seem to hold much attraction as symbols of international status or national pride. Indeed, their possession is usually kept secret because of the stigma associated with them.[15] Nor do leaders of developing nations argue that they must pursue these weapons to enhance technical or industrial development.

On the other hand, Iraq used chemical weapons in the Iran-Iraq war with impunity and with some military success, albeit against poorly defended troops and undefended civilians. In addition, in 1990 Saddam Hussein attempted to invoke the deterrent value of chemical weapons by threatening to use them in response to Israeli nuclear threats or other (undefined) acts of Israeli aggression.[16] Many in the Arab world defended the Iraqi threat against Western criticism. It remains to be seen what lessons potential chemical weapon proliferants will draw from the ultimate inability of chemical weapons to save Iraq from catastrophic military defeat.

Some nations may seek chemical or biological weapons to deter the use of comparable weapons by other nations. Some may see one of those types of weapon as a "poor man's atomic bomb," deterring nuclear neighbors, conventionally superior neighbors, or intervening powers.[17] They may also simply seek these weapons as instru-

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15 Recent nuclear proliferants have also found it prudent to remain secretive about their weapon programs, while clearly @@ pride in the nuclear technology underlying those programs.

16 In a speech on Apr. 2, 1990, Hussein declared:

> Whoever threatens us with the atomic bomb, we will annihilate him with the binary chemical. . .we will make the fire eat up half of Israel if it tries to do anything against Iraq.

Baghdad INA, translation in FBIS-NEW-90-064, Apr. 3, 1990, p. 36.

When Western countries criticized this threat, many Arab spokesmen came to Hussein's defense, saying that Britain and the United States were trying to deny Iraq legitimate means of self-defense. For example, the Kuwaiti foreign ministry was quoted as saying:

> Kuwait, while deploring this campaign and its exposed intentions, sides with brotherly Iraq in the right to defend its safety and security of its people using all available means.

Kuwait KUNA quoting Kuwait News Agency, FBIS-NES-90-069, Apr. 10, 1990, p. 21.

17 See W. Seth Carus, "The Poor Man's Atomic Bomb?' Biological Weapons in the Middle East" (Washington, DC: The Washington Institute for Near East Policy, Policy Papers No. 23, 1991), p. 11.

ments of military advantage for dominating military rivals.

Among delivery systems, ballistic missiles are perceived as another symbol of technological and military prowess. The chances seem slim of building an international consensus that the status of current ballistic missile powers should be ''grandfathered' like that of nuclear-weapon states but that further missile proliferation should be illegitimate, More likely, although not a near-term prospect today, would be a global ban on these delivery systems.[18] If they are instituted at all, voluntary agreements to forgo or reduce ballistic missiles will probably be in the context of regional security and arms control arrangements rather than in a global nonproliferation regime.

DOUBLE STANDARDS

One problem in persuading aspiring ballistic missile owners to forgo them is that they are being asked to accept an international double standard: the advanced powers now deploying ballistic missiles have the right to do so, but newcomers to the club are not welcome.[19] Nuclear nonproliferation efforts suffer to some extent from the same problem. India has complained the most vigorously that it is hypocritical of the United States and the other nuclear powers to deny the rights of non-nuclear nations to acquire the weapons without giving up their own. Although Argentina and Brazil are moving toward participation in the Treaty of Tlatelolco (making Latin America a nuclear-free zone) and have accepted International Atomic Energy Agency (IAEA) safeguards on all their nuclear facilities (fill-scope safeguards), both have refused to join the NPT because it is discriminatory. On the other hand, the overwhelming majority of the world's nations *have* been willing to accede to the NPT as non-nuclear-weapon states.

The international community reached an unusual consensus on the unfitness of Iraq to own nuclear weapons. But neither Iraq nor India nor most other nations accept what they see as the implication that all but the five acknowledged nuclear powers are immature nations unqualified to handle the responsibilities of nuclear guardianship.[20] Thus, the nuclear aspirants are not likely to be persuaded by arguments to the effect that only grown-ups should have nuclear weapons.

A second perception of double standards stems from the variability of past U.S. nonproliferation policies. From the U.S. point of view, failing to make serious efforts to block Israeli acquisition of nuclear weapons or to enforce sanctions against Pakistan in the 1980s in response to its nuclear program reflect the dilemmas of conflicting policy objectives. From the point of view of some other countries, however, it reflects a willingness to look the other way when the proliferant is a friend of the United States—to select what proliferation is acceptable.

The history of double standards, real or perceived, will in some cases be an obstacle to international consensus on nonproliferation. Furthermore, enhancement of the nuclear nonproliferation regime may see the emergence of a triple standard: a way must be found to deal with the three undeclared nuclear powers,

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18 For a detailed proposal of such a ban, see *F.A.S. Public Interest Report,* vol. 45, No. 3, May/June **1992,** pp. 1-18. See also Alton Frye, "Zero Ballistic Missiles," ***Foreign Policy,*** fall 1992, pp. 3-20.

19 in addition, curbs on missile technology are complicated by its relationship to space technology. India, fOr example, has both space-launch and ballistic missile programs. It has expressed strong resentment at U.S, attempts to block foreign exports to its space program that might also be useful to its missile program.

20 In a speech to Pakistani nuclear scientists and engineers, the **President** of Pakistan noted that

> The bombs that devastated Hiroshima and flattened Nagasaki were not hatched by the "unstable countries" and the "irresponsible minds' of the Third World. .

From text of speech by President Ghulam Ishaq Khan in ***The Pakistan Times,*** May ***26,*** 1992, pp. 1-2, reprinted in JPRS-TND-92-017, June 3, **1992, p.** 11.

India, Pakistan, and Israel. Will they be treated as de facto nuclear states, or will they be asked to disarm themselves of weapons they do not admit having?

DOMINO EFFECTS

Proliferation occurs in the context of international conflict. China wanted nuclear weapons because the United States and the Soviet Union had them. India pursued them because China had them. Pakistan, aided by China, developed them to counter the Indian threat. Israel's adversaries want to catch up with Israel. In the latter case, Israel's adversaries also have pursued chemical, and probably biological, weapons in part to try counter the Israeli nuclear advantage-as illustrated by Saddam Hussein's April 1990 threats to use his "binary" weapon. Iran sought chemical weapons in response to Iraqi attacks during their war, and it may be seeking nuclear weapons.

In short, some countries might not be talked out of pursuing one kind of weapon of mass destruction unless they are convinced that their enemies will verifiably renounce not only that kind, but others as well. (In some cases, even that may not suffice: even if Israel's adversaries were to renounce chemical and biological weapons, it seems unlikely that Israel will give up its nuclear weapons unless its general military security is assured.)

CONVENTIONAL MILITARY RIVALRIES

Weapons of mass destruction are frequently seen as potential compensation for inferior conventional military firepower or personnel. This was the case for the United States and NATO during most of the Cold War.[21] Some vulnerable countries-such as Germany, Japan, and South Korea--clearly found it easier to forgo the nuclear option themselves because they enjoyed the nuclear protection of the United States. Not enjoying such an explicit commitment, Israel developed its own nuclear deterrent against its vastly more numerous (and Soviet-armed) Arab adversaries. North Korean nuclear nonproliferation negotiations, stalled as of this writing, had been taking place in the context of a broader political and military modus vivendi between North and South Korea.

Considering the special dangers that weapons of mass destruction present, it might be desirable to treat their proliferation separately from other political and security issues. In the current regions of proliferation concern, this compartmentalization may not be possible. Agreements to forgo weapons of mass destruction may depend on complementary agreements to reduce perceived conventional military threats.

Economic Incentives To Forgo Weapons of Mass Destruction

FINANCIAL AND TECHNICAL ASSISTANCE

Linking technical or financial assistance to nonproliferation began with President Eisenhower's 1953 Atoms for Peace Plan. That plan proposed the creation of the International Atomic Energy Agency, whose mission would be to make peaceful applications of atomic energy globally available while ensuring that nuclear materials were not diverted to weapons. In the NPT, parties agree to foster peaceful applications of nuclear energy for peaceful purposes, "especially in the territories of non-nuclear-weapon States Party to the Treaty, with due consideration for the needs of the developing areas of the world"; they also undertake to ensure availability of the benefits of peaceful nuclear explosions to non-nuclear-

21 The idea that Western superiority in conventional military technology-rather than U.S. nuclear weapons—could counter Warsaw Pact numerical advantage was emphasized mainly in the later years of the Cold War, especially as discomfort with the idea of extended nuclear deterrence grew. Until the very end, the United States declined to follow the Soviet example (however disingenuous it might have been) of declaring that it would not be the first to use nuclear weapons.

weapon states .22 The U.S. Nuclear Nonproliferation Act of 1978 also links assistance to nonproliferation, while recognizing that disseminating peaceful applications of nuclear technology cannot avoid the potential of contributing to weapon applications as well. The Act provides that the United States ". . . shall seek to cooperate with and aid developing countries in meeting their energy needs through the development of [nonnuclear energy] resources and the application of nonnuclear technologies . . .' and shall seek to encourage other industrialized nations to do the same.

The Biological Weapons Convention (BWC) calls for parties to facilitate exchange of equipment, materials, and scientific and technological information for the use of biological agents and toxins for peaceful purposes; parties able to do so also are to cooperate in contributing to the further development and application of scientific discoveries in the field of biology for prevention of disease or for other peaceful purposes.[23]

Article XI of the CWC specifies that its provisions will be carried out ". . in a manner which avoids hampering the economic or technological development of States Parties. " It also provides that the states ". . undertake to facilitate, and have the right to participate in, the fullest possible exchange of chemicals, equipment and scientific and technical information relating to the development and application of chemistry for purposes not prohibited under this Convention. "

A more comprehensive nonproliferation measure would be to tie a large portion of international development assistance to nonproliferation goals. (There is a precedent: during the Cold War, U.S. foreign aid policies were keyed closely to blocking Communist influence in the Third World.) One way to do this is to deny aid to countries that do not participate fully in the nonproliferation regimes (e.g., refusing to join and adhere to the NPT, the CWC, or the BWC). Another would be to offer increased aid to induce states to end the regional arms races that stimulate desires for weapons of mass destruction and to convert military efforts to peaceful development programs. (In the case of the former Soviet Union, discussed in a separate section below, foreign aid may be directed at stabilizing polities where the weapons already exist and at reducing incentives to export proliferation-sensitive goods and services.)


PETER WINKLER/IAEA

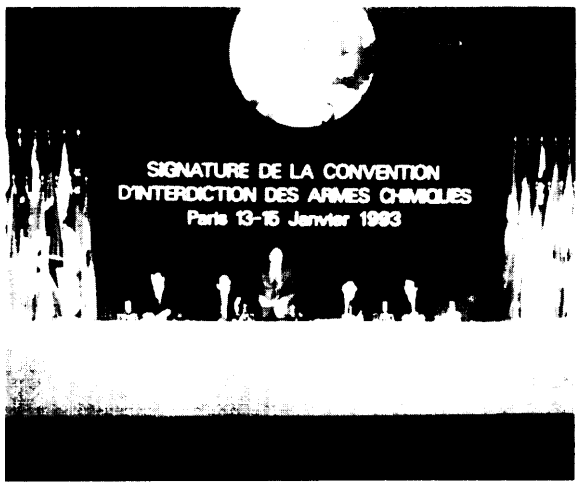
The International Atomic Energy Agency (IAEA) was created to help make peaceful applications of nuclear energy globally available while ensuring that nuclear materials were not diverted to nuclear weapons. IAEA headquarters are located in the Vienna International Centre, pictured here,

22 Peaceful nuclear explosions (PNE) were once a major bone of contention in nonproliferation debates, since there is no difference in principle between a device that could create a peaceful nuclear explosion and one that would create a destructive one. There now appears to be little political support in the world for maintaining the PNE option.

23 The BWC Second Review Conference in 1986 recommended measures for increasing such cooperation. However, the author of a 1991 book on the BWC asserts that no concrete results have been obtained:

> The recommendations [of the Second Review Conference] have served only as a formal recognition of the preoccupations of developing countries at the review conference.

Barend ter Haar, ***The Future of Biological Weapons (New*** York, NY: Praeger, 1991), p. 37



UN PHOTO BY CLAUDE MICHEL (UNESCO)

The opening ceremony of the Signing of the Chemical Weapons Treaty at UNESCO headquarters in Paris was attended by (from left to right) the Foreign Minister of Germany, the Secretary-General of the United Nations, the President of France, the Foreign Minister of France, and the Director-General of UNESCO.

EXEMPTIONS FROM EXPORT CONTROLS

U.S. export controls on items that might contribute to nuclear, chemical, biological, or missile programs require licenses for export to specific lists of countries of concern; countries not listed as proliferation risks are more likely to be eligible to receive goods and technology they want.

Security Benefits

MUTUAL AGREEMENTS NOT TO ACQUIRE WEAPONS

The central bargain of consensual nonproliferation agreements is that states give up their own rights to acquire weapons of mass destruction on the condition that such weapons will not be needed to deter the weapons of others. The non-nuclear-weapon states party to the NPT assure one another that they will not acquire nuclear weapons. Parties to the Treaty for the Prohibition of Nuclear Weapons in Latin America (Latin American Nuclear-Free Zone Treaty, also known as the Treaty of Tlatelolco) agree not to acquire or to permit the presence on their territory of nuclear weapons.[24] States have agreed to forgo biological weapons under the BWC of 1975. All parties to the Chemical Weapons Convention agree to abjure chemical weapons.

Bringing the undeclared nuclear weapon states—India, Pakistan, and Israel-into the nuclear nonproliferation regime will be a delicate task. In these cases, the first steps may have to be measures to cap or freeze nuclear weapon programs where they are-to keep the bombs in the basement, so to speak. Regional confidence-building measures might eventually persuade these nations to roll their nuclear weapon programs back, while assuring their neighbors that matching weapon programs of their own are unnecessary.[25] One delicate **question is whether rollback will be possible without prior formalization of nuclear status. In other words, the bombs might have to come out of the basements before they can be eliminated. If declarations of nuclear weapon possession and steps to eliminate the weapons are not closely linked, the nuclear nonproliferation norm might be weakened. One way of handling this problem was recently demonstrated by South Africa, which dismantled its nuclear weapons first, then afterwards admitted their existence and promised steps to verify that it no longer had them.**

Without addressing this question, Pakistan has for several years proposed a South Asian nuclear-

24 The Treaty of Rarotonga creates a nuclear-free zone in the South Pacific. In 1993, Waler U.N. auspices, a group Of experts is to draft a treaty for the 'denuclearization' of Africa. This effort seems to have a better chance of success than proposals, previously studied by the United Nations, for a Middle East nuclear-weapon-free zone. See Jon Brook Wolfsthal, "Nuclear-Weapon-Free Zones: Coming of Age?," *Arms Control Today*, vol. 23, No. 2, March 1993, pp. 3-9.

25 For discussion of confidence-building measures and roll-back, see Gregory F. Giles, "Nuclear Proliferation Contingency Planning: Ensuring Global Ordedr In a More Proliferated World," CNSN Paper, vol. 4, No. 2 (McLean, VA: The Center for National Security Negotiations (SAID)).

free zone; in November 1992 the U.N. General Assembly again overwhelmingly endorsed this proposal, but India voted against it.[26] India has repeatedly stated that it will consent to limits on its own nuclear weapon program only in the context of global nuclear disarmament.

Onsite verification measures, such as those provided for under the CWC, maybe necessary to build sufficient confidence in compliance among the participants in mutual nonproliferation regimes.[27] Efforts to strengthen verification of compliance with the NPT or the BWC will have to take into account the difficulties of balancing costs and possible benefits from onsite inspections. For further discussion of the issues, see the appendix to this chapter.

ASSURANCES FROM EXISTING OWNERS

In 1968 the U.N. Security Council passed a resolution recognizing that nuclear aggression or the threat of nuclear aggression would create a situation requiring immediate action by the Security Council, notably its permanent members. In addition, the United States, the Soviet Union, and the United Kingdom declared that they each intended to seek immediate Security Council action to assist any non-nuclear-weapon state party to the NPT that was the object of nuclear aggression or threats. Such *positive security assurances* could be strengthened in various ways. For example, the permanent members of the Security Council could each promise to seek Security Council action not only in cases of nuclear aggression, but also in cases involving chemical or biological weapons. Or, the Security Council could formally promise in advance to come to the aid of victims of such aggression.

In 1978 the United States issued a policy statement providing *negative* security assurances: that it would not use nuclear weapons against any non-nuclear-weapon state party to the NPT (or a comparably binding international agreement) except in the case of an attack on the United States or its forces or allies by such a state allied to a nuclear-weapon state or associated with one in the attack.

In the NPT, the parties (including nuclear-weapon states) agreed to ‘‘. . pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament . . .’ The United States and Russia have each declared that they have removed most tactical nuclear weapons from deployment and that they will destroy most of those; they have also agreed to deep reductions in their strategic nuclear forces; they have continued a moratorium on nuclear testing; the United States has ceased production of new nuclear-weapon material and Russia has indicated it will do likewise. Other proposed measures for cutting back the weapon programs of the nuclear-weapon states have included a comprehensive nuclear test ban and formal, verified cessation of production of nuclear weapon fissile materials.

If the spirit of cooperation between the two nuclear superpowers continues, even more dramatic steps are conceivable. The United States and Russia might engage in yet another round of nuclear force reductions, this time bringing France, Britain, and China into the process. All the nuclear powers might put even their weapons into “trust’ for the United Nations, pledging never to use them except in a case approved by the Security Council. Although the nuclear genie may never be fully rebottled, radically new institutions for containing it are no longer unthinkable.

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26 For discussion of a range of South Asian nuclear arms control proposals that would address situations anywhere from denuclearization to ambiguity to declared nuclear weapon status, see Steven Philip Cohen, “Policy Implications, ‘‘ in Cohen, cd., ***Nuclear Proliferation in South Asia: the Prospects for Arms Control*** (Boulder, CO: Westview Press, 1991), pp. 339-371.

27 Such measures might also build *over*-confidence: successful concealment of violations at (or away from) inspected sites could mislead states to conclude that others are complying with an agreement when they are not.

There are other examples of assurances from owners. The United States in 1969 voluntarily eliminated its own biological weapons; several other nations followed suit. The Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and their Destruction (Biological Weapons Convention, or BWC) became effective in 1975. Parties to the Geneva Protocol of 1925 agreed not to use ''asphyxiating, poisonous, or other gases" or ''bacteriological methods" in warfare. (The United States ratified the Protocol in 1975, at that time reserving the right to retaliate with chemical weapons against states not observing the Protocol; it has rescinded that reservation, effective with the signing of the CWC in January 1993.) The United States and Russia have agreed to destroy their stocks of chemical weapons and, under the CWC, agree to forgo such weapons permanently.

REDUCING THE INTERNATIONAL ROLE OF WEAPONS OF MASS DESTRUCTION

Nuclear nonproliferation policy entails persuading non-nuclear countries that they do not need nuclear weapons. One way to reduce the appeal of nuclear weapons is to retire them to the background of international relations, to dissociate them from perceptions of power and status. This is likely to be a difficult task for those who already possess the weapons. In the U.S. case, de-emphasizing the international role of nuclear weapons would logically mean weakening the credibility and utility of U.S. nuclear deterrence. That result might in turn prompt calls in some nations to reconsider their decisions to rely on U.S. deterrence rather than acquire their own nuclear weapons. On the other hand, in a world of generally lower perceived nuclear threat, such nations may now feel less dependent on U.S. nuclear deterrence for their security. In the long run, the nuclear deterrence paradox could be resolved by placing all nuclear weapons in the hands of a supranational organization and establishing a universal prohibition against national nuclear arsenals. However, such a world order still seems remote. Some argue the nuclear proliferation problem cannot be solved unless nuclear disarmament is taken even further-to total elimination of all nuclear weapons.[28]

Threatening to respond to *chemical* weapon attacks with nuclear retaliation would foster the idea that nuclear weapons are legitimate instruments of war, and that those lacking them are less than full players in the international arena. Attempting such deterrence would also have the effect of elevating the perceived significance of chemical weapons, implying that they are in some way equivalent to nuclear weapons as instruments of mass destruction. At the same time, a nation contemplating the use of chemical weapons might not believe that the United States would actually resort to so disproportionate a response as nuclear retaliation.

Biological weapons, effectively administered, could turn out to kill as many people as nuclear weapons. Nevertheless, retaining a nuclear retaliatory option against their use could have effects akin to those of trying to use nuclear weapons to deter chemical weapon use: that is, trying to apply nuclear deterrence to biological weapons could reinforce the idea that they are the ''poor man's atomic bomb," and it might just as well stimulate as discourage some countries from trying to acquire them.

BROADER ARMS CONTROL

As noted in ch. 2 and earlier in this discussion of nonproliferation incentives, nations now suspected of seeking one type of weapon of mass destruction are engaged in arms competitions with neighbors seeking not just the same type of weapon, but sometimes other types and sometimes conventional weapons; this is true in the

28 See, for example, Joseph Rotblat, et al., (eds.), *A Nuclear-Weapon-Free World: Desirable? Feasible?* (Boulder, CO: Westview Press, 1993).

Middle East, South Asia, and the Koreas. Limiting external threats of whatever character may reduce incentives for acquiring weapons of mass destruction. For example, North and South Korea have discussed verification of non-nuclear status in the context of wider arms control arrangements between the two sides.

The choices are among trying to negotiate regimes that limit various combinations of:

- a single type of weapon of mass destructions,
- all types,
- delivery systems, and
- conventional armaments and troop levels.

Casting the arms control net more narrowly may simplify negotiations. Argentina and Brazil seem to be an example of two nations arriving at reciprocal decisions not to develop nuclear weapons and to agree to some verification measures for mutual reassurance. Elsewhere—for example the Middle East—the pursuit of weapons of mass destruction may be too deeply embedded in the regional security problem and consequent across-the-board arms competition: renunciation of nuclear or chemical arms may not come without reductions in conventional military threats.

An important stimulus for limiting regional arms races could be collective agreements by the major suppliers of conventional weapons to restrain their exports. The United Nations has established an international registry of arms transfers, in the hope that greater transparency will lead to greater restraint. The five permanent members of the U.N. Security Council, who also account for the great majority of global m sales, have held talks to discuss the possibility of limiting sales to the Middle East, but have reached no agreement. (In the fall of 1992, China withdrew from these talks to protest the U.S. sale of F-16 aircraft to Taiwan.)

DEFENSE COMMITMENTS

U.S. alliance commitments to Germany and other NATO countries technically capable of building nuclear weapons, as well as to Japan and South Korea, probably contributed to their decisions not to acquire nuclear weapons. In the future, the United States, alone or in concert with other nuclear powers, might continue to offer a conventional or a nuclear deterrent umbrella to help persuade some countries to forgo the nuclear option. Offering a credible conventional deterrent, however, may be complicated by the worldwide reduction and return to the United States of U.S. military forces due to the Cold War's end. Offering a nuclear umbrella implies maintaining deployed nuclear forces that could credibly be used in retaliation for a nuclear attack on a third party .29 It also would expose the United States to the risk that the state it retaliated against would escalate to a nuclear attack against the United States. Another problem with the maintenance of such forces is that doing so would underscore the special status that nuclear weapons confer, and may contradict efforts to lower the profile of nuclear weapons in international politics. The existence of either conventional or nuclear defense commitments by the United States also risks persuading some countries of the need to develop their own nuclear forces as a counter-deterrent to external intervention in regional affairs.[30]

REGIONAL SECURITY AND ARRANGEMENTS

The long-run success of nonproliferation efforts is likely to depend in part on the reduction of security threats used to justify acquisition of weapons of mass destruction. Some analysts argue that regional conflicts are the ''root cause' of proliferation, and therefore that settling regional security problems is a sine qua non for

29 Some analysts argue that START-reduced U.S. strategic nuclear forces will more than suffice for this purpose, while others believe that smaller yield tactical nuclear weapons would be more credible.

30 Some have argued that the United States should develop nuclear weaponsspecially tailored for limited military purposes in otherwise conventional conflicts; however, arguments that the United States is entitled to special, advanced nuclear weapons, while others should have none at all, are not likely to have wide international appeal.

containing it. The security problems in each region of proliferation concern are different; each will require specially tailored arrangements if the parties are to trust one another enough to halt or reverse their military competitions. Such arrangements may consist of combinations of political agreements, economic steps, military confidence-building measures, and arms controls.

Middle East—Achieving a nuclear-weapons-free zone in the Middle East would probably entail extensive peace arrangements between Israel and its Arab neighbors. The current Middle East peace process aims in this direction. Israelis may see their undeclared nuclear weapons as the ultimate guarantor of Israeli deterrence against elimination of their vulnerably small nation by its more populous neighbors. At least some Arab states may see Israeli nuclear and other weapons of mass destruction as fully sufficient justification for obtaining the same.[31] As the Iran-Iraq war and the Iraqi invasion of Kuwait show, disputes among several Middle East states go beyond the Arab-Israeli conflict.

South Asia—Pakistan and India have both ethnic and territorial disagreements with one another. China and India, beyond their own territorial disputes, rival one another as regional great powers. As noted above, Pakistan has proposed a South Asian nuclear-free zone, but India insists not only that China would have to participate, but that all nuclear powers would have to complete nuclear disarmament.

Northeast Asia—Until recently North and South Korea seemed to be making some progress toward reconciliation between their deeply hostile regimes. At the end of 1991, they signed a "Joint Declaration for a Non-Nuclear Korean Peninsula." In that context, North Korea (a 1985 signatory of the NPT) finally concluded an overdue agreement with the IAEA for nuclear safeguards in 1992. It allowed some inspections in 1992, but in March 1993 it denied further IAEA access and announced its withdrawal from the NPT. After discussions with the United States in June 1993, North Korea agreed to postpone its NPT withdrawal, but at that time had not yet agreed to the special inspections requested by the IAEA.

Former Soviet Union and Europe—Ukrainian officials have promised in principle to give up the former Soviet nuclear weapons on their territory. But recently they have tied implementing that promise to, among other things, the kinds of security guarantees they have from (or against) their neighbors (chiefly Russia). See chapter 2 for discussions of concerns surrounding the breakup of the Soviet Union and see below in this chapter for a range of policies for limiting proliferation from that region. Several European states are technically capable of producing nuclear weapons, but have renounced the right to do so. In the long run, their adherence to their decisions may depend on their trust in regional security arrangements in a post-Cold-War world.

GLOBAL SECURITY ARRANGEMENTS

In many cases, regional groupings have been unable to establish workable security arrangements on their own. The United Nations could step in either instead of, or in support of, regional organizations-as it has recently in the Middle East, Cambodia, and Africa. Realization of lasting security arrangements in the other regions mentioned above will depend on cooperation from extraregional nations. In some cases, agreement not to interfere might be enough; in others, agreement to provide collective security[32] assurances may be necessary. Such cooperation will require that the world's great powers—particularly the permanent members of the U.N.

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31 For discussion of the Middle East nuclear problem, see United Nations, *Establishment of a Nuclear Weapons-Free Zone in the Region of the Middle East, Report of the Secretary-General A/45/435,* October 1990.

32 In this context, "collective security" implies the response of the international community to aggression by one of its members, not simply an alliance of some states against other states.

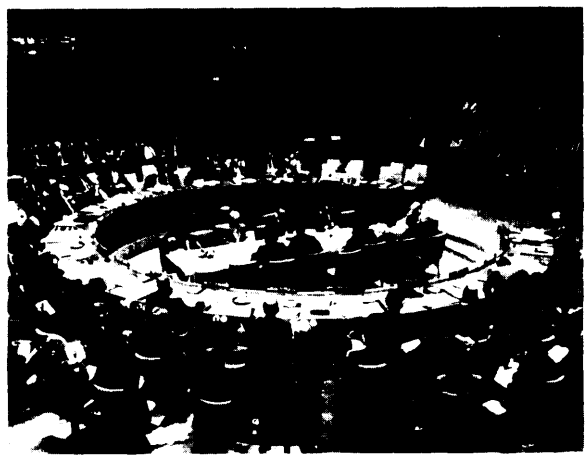
Security **Council**[33]**--work together.** For example, recent progress in regional security negotiations, particularly in the Middle East, is partly related to the end of the Cold War and the loss of Soviet patronage for some Arab states.

Some analysts argue that the *only* **way to** contain proliferation of weapons of mass destruction and other advanced weapons is to change dramatically not only regional security arrangements, but the whole basis of global security. They propose a concept of "cooperative security," the purpose of which is

> . . .to prevent war. . . primarily by preventing the means for successful aggression from being assembled, thus also obviating the need for states so threatened to make their own counterpreparations.[34]

These authors argue that proliferation is closely connected to cooperative security:

> In order to have any reasonable hope of inducing restraint among the many countries that have the inherent capacity and potential incentive to acquire advanced weapons, the major military establishments would not only have to subordinate their own national forces to international coalitions. . but also would undoubtedly have to shrink reciprocally their own forces, levels, and defense industries and would probably have to adopt deployment restrictions embodying the principles of defensive configuration. They would also have to radically de- emphasize weapons of mass destruction in their defense planning. Fortunately, historic contractions in military forces and investment of just this sort are taking place throughout North America, Europe, and the former Soviet Union. If carried out cooperatively, this contraction can set the standard for reduced *military* spending and for force and investment cuts in other regions. Contractions in defense industries and control of export sales should be transformed from politically charged national burdens into internationally shared obligations in pursuit of the benefit of lower levels of militarization everywhere.[35]



UN PHOTO M. TZOVARAS

international *security arrangements may reduce national incentives to acquire weapons of mass destruction. To succeed, both regional and global security arrangements will require cooperation among the world's great powers, particularly the members of the U.N. Security Council, pictured here deliberating in March 1992 over Iraqi violations of its cease-fire obligations.*

WI-EN NONPROLIFERATION FAILS

Some analysts argue that further proliferation of weapons of mass destruction is inevitable and that nonproliferation policy is, if anything, counterproductive.[36] Others say that although nonproliferation policies should continue, it is prudent to plan for at least some further proliferation, and to be prepared to try to mitigate its consequences for

33 Some have proposed that the permanent membership of the Security Council be enlarged to include other great powers—especially Germany, Japan, and India. On the one hand, such an expanded membership would add legitimacy to Security Council actions; on the other, the larger the Council becomes, the more unwieldy will be its operation, impairing its ability to respond rapidly to emerging crises. Should the veto rights now held by the current permanent members be extended to new permanent members, the Council might be less able to achieve the unanimity of its permanent members required for Council action.

34 Ashton B. Carter, William J. Perry, and John D. Steinbruner, op. cit., footnote 2, p. 7.

35 Ibid., pp. 3&37.

36 Ted Galen Carpenter, op. cit., footnote 1.

U.S. and international security .37 Modifying U.S. force plans and structures to cope with the possible further proliferation of weapons of mass destruction is unquestionably an important task **for U.S. policymakers.** Recognizing this fact, the Department of Defense has plans to create a new office of Nuclear Security and Counterproliferation to be headed by an Assistant Secretary of Defense.

As noted above in the section on creating disincentives for proliferants, some policies can simultaneously serve the purposes of deterring acquisition of the weapons in the first place and of deterring or militarily countering their use when nonproliferation fails. It is important to note, however, that some preparations to mitigate the consequences of proliferation might also exacerbate the process of proliferation.

One can make deterrent counter-threats to dissuade the proliferant from using his weapons. Analysts have variously hypothesized that Iraq failed to use its chemical weapons against coalition troops because it feared U.S. retaliation in kind, U.S. resort to nuclear weapons, or escalation of the conventional attack to the point of eliminating the Hussein regime; others suggest Iraq just calculated that there was no useful application available for chemical weapons. Some argue that the possibility of Israeli nuclear retaliation deterred Iraq from using Scud missiles with chemical warheads against Israel.

Noncoercive measures to try to manage the consequences of proliferation are also conceivable. Given a case in which weapons of mass destruction are deployed despite U.S. wishes to the contrary, it would be in U.S. interests to minimize the resulting dangers.

For example, the current nuclear states could implicitly or explicitly acquiesce in the deployment of nuclear weapons by India, Pakistan, Israel, or Ukraine. They could then offer the newcomers to the nuclear club help in developing stabilizing doctrines of deployment and deterrence. The help might be technical assistance to reduce the vulnerability of their nuclear forces to a disarming first-strike from others. Or, it might take the form of technology for tightening centralized control over the weapons themselves and for preventing unauthorized use, theft, or accidents. Promoting safer deployment of weapons of mass destruction would be inconsistent with a stated goal of a global ban on possession-as in the cases of chemical and biological weapons. But in the case of nuclear weapons, the policy might ''grandfather' nuclear arms deemed to be irreversibly deployed, as the NPT does those of the United States, Russia, Britain, France, and China.

A policy of acceptance might mitigate postproliferation risks, but it would also tend to encourage further proliferation by showing that successful evasion of the obstacles to proliferation can eventually lead to legitimacy as a member of the nuclear club.[38] Technical assistance on safety and security measures could also lead the new nuclear power to integrate its weapons more tightly into its military forces, keep them at higher levels of alert, and think of them as more usable instruments of force. And making the weapons more secure from preemptive first strikes from their neighbors would also make **them** more secure **from a** U.S. or multinational preemptive strike.

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37 For discussion of both nonproliferation measures and proliferation mitigation measures, see Giles, op. cit., footnote 25.

38 One answer to the problem of encouraging further proliferation would be to permit a one-time-only expansion of the nuclear club. The U.N. Security Council could set a deadline for states to declare themselves nuclear-weapon states, after which it would treat all further nuclear proliferation--including any existing but undeclared programs-to be a threat to international peace justifying a Council inspection and eliminati'on program. See David Kay, ''The IAEA-How Can It Be Strengthened?, ' Woodrow Wilson International Center for Scholars, Conference, "Nuclear Proliferation in the 1990s: Challenges and Opportunities," Dec. 1-2, 1992.

SPECIAL AND URGENT: LIMITING PROLIFERATION FROM THE FORMER SOVIET UNION

Most of the policy tools described so far in this chapter will be relevant to the republics of the former Soviet Union. But, as indicated in ch. 2, the breakup of the Soviet Union has led to new kinds of proliferation risks. The extent to which the former Soviet republics will disseminate technology, materials, and expertise for producing nuclear, chemical, and biological weapons (as well as ballistic missiles) is still far from certain. Nor is it certain that the former Soviet weapons themselves will remain under firm and responsible central control, or that the three non-Russian republics having some of the weapons within their borders will yield all of them up for elimination.

The situation in the former Soviet Union is only partially amenable to outside influences. Nevertheless, the United States and other nations can take steps to encourage favorable outcomes. In 1991 and 1992, Congress and the administration attempted to help limit these risks by budgeting $400 million each year (beginning with the Nunn-Lugar Soviet Threat Reduction Act of 1991) to assist former Soviet demilitarization. Listed below is a range of policy measures for addressing the risks identified in ch. 2. Some of these measures are already supported by the Nunn-Lugar and Freedom Support Act funds; others are possible future steps.[39]

Maintaining Central Control of Former Soviet Weapons and Materials

- The United States could lead in the creation of an international forum to coordinate efforts to help denuclearize the former Soviet republics.
- The United States and other nations can continue to insist (along with appropriate carrots and sticks) that Ukraine and Kazakhstan ratify the START agreement and the NPT, confirming their non-nuclear status. Belarus, which has done so, could be rewarded, and the countries providing economic assistance to the former Soviet republics could condition all types of aid on continued progress in promised denuclearization.
- Nunn-Lugar funds are supplying equipment for the secure transport of nuclear weapons to central locations. The money is also to be used to help build storage facilities for the plutonium from dismantled nuclear weapons.
- The United States could also encourage use of this money to accelerate current Russian dismantlement schedules; the United States could set an example by accelerating its own dismantlement process.
- The United States has agreed to purchase highly enriched uranium from Russian nuclear weapons for use, once diluted to lower levels of enrichment, as fuel in nuclear power reactors.

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[39] Several of the additional steps listed below were advocated by Senators Nunn and Lugar in December 1992; see Sam Nunn and Richard Lugar, "Still a Soviet Threat," *Washington Post, Dec. 22, 1992,* p. A-21. For a comprehensive collection of policy options for dealing with the nuclear risks posed by the breakup of the Soviet Union, see Graham Allison, Ashton B. Carter, Steven E. Miller, and Philip Zelikow, (eds.), *Cooperative Denuclearization: From Pledges To Deeds,* CSIA *Studies in* International Security No. 2 (Cambridge, MA: Harvard University, Center for Science and International Affairs, 1993); for discussion of U.S. nongovernmental efforts toward verified dismantlement of nuclear weapons, see Federation of American Scientists and Natural Resources Defense Council, *Report of the Fourth International Workshop on Nuclear Warhead Elimination and Nonproliferation,* held in Washington, *D. C.,* Feb. *26-27,* 1992 (Washington DC: Federation of American Scientists, 1992); see also Christopher Paine and Thomas B. Cochran, "Verifying Dismantlement" *Arms Control Today,* vol. *22,* No. 1, January/February 1992, pp. 15-17.

- The United States could propose internationally monitored storage or disposition of highly enriched uranium and plutonium from dismantled nuclear weapons in both the former Soviet Union and the United States.
- The United States could urge accelerated implementation of START strategic nuclear arms reductions; it could ratify promptly the START II agreement and also urge rapid implementation of those reductions.
- The United States and others can offer diplomatic support and, where appropriate, financial assistance to help settle ethnic and regional conflicts and promote regional security regimes.

Preventing Export of Weapons or of Weapon Components

If weapons of mass destruction remain under effective central Russian control, their export seems unlikely. But the same sorts of civil disorder and governmental breakdown that could lead to weapons or key components falling into illegitimate hands could also foster the sale abroad of such goods. With or without cooperation from officials in the former Soviet states, U.S. and other foreign intelligence services may be able to help monitor and stop illicit transactions.

Inhibiting Emigration of Technical Personnel

The United States and other nations have supported creation in Moscow and Kiev (Ukraine) of International Science and Technology Centers, intended to help establish meaningful, nonmilitary work for scientists and engineers who might otherwise be tempted to accept foreign weapons work to earn a living.[40] Joint projects **between U.S. and former Soviet laboratories and firms might be another contribution to that goal. Efficient enforcement of laws and regulations may help.[41] Overall improvement in the economies of the states that emerged from the former Soviet Union is probably the best hope for discouraging this kind of emigration.**

Controlling Export of Critical Information, Equipment, or Materials

The Russian Government has issued specific regulations on the export of goods that might be used to make weapons of mass destruction. Information about the regulations of other former Soviet republics is still spotty .42 But former Soviet military enterprises, new companies, and local and regional governments are striving to earn foreign hard currencies through exports of all kinds. In the transition to a market economy, there is reason to question how effectively controls on either declared exports or smuggled goods will be administered. Western governments with greater experience in export regulations may be able to offer technical assistance. U.S. and other intelligence agencies may be able to track questionable exports and direct the attention of authorities in the former Soviet republics to specific problems.

A private U.S. organization[43] is working with groups in the former Soviet Union on a project on "Building Communities of Nonproliferation Specialists in the Former Soviet Union. ' If such communities can be established, they may contribute to more rigorous implementation of nonproliferation policies in the former Soviet Union.

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40 Other centers may also open in Minsk (Belarus) and Alma-Ata (Kazakhstan).

41 *Izvestiva* has cited foreign reports that Russian authorities blocked some nuclear power specialists from traveling to North Korea. Russian officials confirmed to *Izvestiva* that border troops were instructed to detail "a certain category" of Russians thought to be "bearers of secrets." *Izvestiva, Dee.* 22, 1992, p. 2, trans. in FBIS-SOV-92-246. Dec. 22, 1992, pp. 15-16.

42 For what is publicly available, see Potter, *Nuclear Profiles of the Soviet Successor States,* loc. *Cit. inch. 2,* footnote 47.

43 The CIS Nonproliferation Project of the Center for Russian and Eurasian Studies at the Monterey Institute of International Studies, with grants from various U.S. foundations.