S. HRG. 102-102-1021, PT. 2

ARMS TRADE AND NONPROLIFERATION IN THE MIDDLE EAST

HEARING

BEFORE THE

SUBCOMMITTEE ON TECHNOLOGY AND NATIONAL SECURITY

OF THE

JOINT ECONOMIC COMMITTEE CONGRESS OF THE UNITED STATES

ONE HUNDRED SECOND CONGRESS

SECOND SESSION

PART 2

MARCH 13, 1992

Printed for the use of the Joint Economic Committee

U.S. GOVERNMENT PRINTING OFFICE
64-242cc WASHINGTON: 1993

For sale by the U.S. Government Printing Office
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402
ISBN 0-16-041366-4

JOINT ECONOMIC COMMITTEE

[Created pursuant to Sec. 5(a) of Public Law 304, 79th Congress]

SENATE

PAUL S. SARBANES, Maryland,
Chairman
LLOYD BENTSEN, Texas
EDWARD M. KENNEDY, Massachusetts
JEFF BINGAMAN, New Mexico
ALBERT GORE, Jr., Tennessee
RICHARD H. BRYAN, Nevada
WILLIAM V. ROTH, Jr., Delaware
STEVE SYMMS, Idaho
CONNIE MACK, Florida
ROBERT C. SMITH, New Hampshire

HOUSE OF REPRESENTATIVES

LEE H. HAMILTON, Indiana,
Vice Chairman
DAVID R. OBEY, Wisconsin
JAMES H. SCHEUER, New York
FORTNEY PETE STARK, California
STEPHEN J. SOLARZ, New York
KWEISI MFUME, Maryland
RICHARD K. ARMEY, Texas
CHALMERS P. WYLIE, Ohio
OLYMPIA J. SNOWE, Maine
HAMILTON FISH, Jr., New York

STEPHEN A. QUICK, *Executive Director*
RICHARD F KAUFMAN, *General Counsel*
EDWARD W. GILLESPIE, *Minority Staff Director*

SUBCOMMITTEE ON TECHNOLOGY AND NATIONAL SECURITY

SENATE

JEFF BINGAMAN, New Mexico
Chairman
PAUL S. SARBANES, Maryland
RICHARD BRYAN, Nevada
CONNIE MACK, Florida
ROBERT C. SMITH, New Hampshire

HOUSE OF REPRESENTATIVES

DAVID R. OBEY, Wisconsin
JAMES H. SCHEUER, New York
KWEISI MFUME, Maryland
RICHARD K. ARMEY, Texas

CONTENTS

WITNESSES, STATEMENTS, AND SUBMISSIONS FOR THE RECORD

FRIDAY, MARCH 13, 1992

ARMS TRADE AND NONPROLIFERATION IN THE MIDDLE EAST

FRIDAY, MARCH 13, 1992

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON TECHNOLOGY AND NATIONAL SECURITY OF THE,
JOINT ECONOMIC COMMITTEE,
Washington, DC.

The Subcommittee met, pursuant to notice, at 9:37 a.m., in room SD–106, Dirksen Senate Office Building, Honorable Jeff Bingaman (Chairman of the Subcommittee) presiding.

Present: Senator Bingaman.

Also present: Richard F Kaufman, General Counsel.

OPENING STATEMENT OF SENATOR BINGAMAN, CHAIRMAN

SENATOR BINGAMAN. This is a beginning of a new round of hearings on arms trade and nonproliferation. It follows similar hearings on related issues that we had in 1990 and 1991.

The purpose of the hearing today is to examine U.S. Government policies and practices concerning exports and the transfer of conventional arms and sensitive technologies used in building nuclear, missile, and chemical and biological weapons.

We're interested in the demand as well as in the supply side of the international arms trade and in proposals to improve our own export control program, and also the multilateral mechanism, such as the nuclear nonproliferation regime.

We will focus primarily on the arms race in the Middle East as a way to evaluate the effectiveness of our policies and the various approaches to slowing the arms build-up in that region.

We're also interested in how countries such as Russia and the other former republics of the Soviet Union might be brought into any of the various options for control regimes.

This week, I returned from a short trip to Russia and the Ukraine with Senators Nunn, Lugar and Warner trying to identify trends that were occurring. It seems clear that Russia may be seeking in the future to earn hard currency by exporting massive amounts of arms, or at least that's their stated intention, based on our conversations with several officials.

Many feel that current efforts are diluted today by emphasizing the wrong thing. We ought to be less concerned about COCOM and the old problems of restricting East-West technology transfer, and more concerned with arms proliferation taking place to developing countries.

In the Middle East, we need to be working for a pause in arms exports and in the arms race. The United States is now the leading arms exporter to that

region. It may have been appropriate last year during the Persian Gulf war for us to assume that role, but I think we need now to rethink that policy.

The breakup of the Soviet Union is, if anything, adding to the volatility of the Middle East by introducing potential new sources of arms, including nuclear weapons.

Before I introduce the fist panel, I would like to have included into the record a statement by Congressman Stark.

[The prepared statement of Representative Stark follows:]

PREPARED STATEMENT OF REPRESENTATIVE PETE STARK

Mr. Chairman:

Thank you for holding this hearing on this critical issue. With the Cold War over and the Soviet Union disbanded, nuclear proliferation is now the leading threat to our national security. Congress and the Administration must implement aggressive new non-proliferation policies or it's only a short time before countries like Iraq, Iran, and North Korea acquire the ultimate doomsday weapon.

There are two main pillars of our non-proliferation policy: export controls and International Atomic Energy Agency (IAEA) safeguards. Saddam Hussein ran embarrassing end runs around both of them. U.S. and European firms sold many nuclear dual-use items to Iraq. The Iraqis used this critical technology to develop a clandestine effort to build the bomb. This program went completely undetected by the IAEA, which conducted regular, six month inspections of Iraq's declared nuclear facilities.

We need to tighten export controls and strengthen the IAEA. There is currently legislation pending before Congress which will do just that.

The Export Administration Re-Authorization, which is currently waiting to be conferenced, contains a provision that would strengthen U.S. export controls on nuclear dual-use items. It also directs the Bush Administration to conduct multi-lateral negotiations to get our allies to tighten their export controls as well. Had it been in effect, this legislation would have seriously hampered Saddam's efforts to acquire nuclear weapons technology.

The Administration claims to be serious about combating proliferation, but they have threatened to veto the whole Export Administration Re-Authorization unless the non-proliferation provisions are removed! What is the Administration's alternative? Thus far, they have been unwilling to compromise or negotiate on this matter. But steps must be taken--the status quo has clearly failed us.

The IAEA is charged with safeguarding peaceful nuclear facilities around the world, preventing diversions of bomb materials to military purposes. Currently, though, the IAEA only inspects facilities a country has officially "declared." The IAEA must exercise its right to inspect any facility it suspects harbors illicit nuclear activities. Additionally, countries should be able to request short notice IAEA inspections of another country's facilities, following the verification models in the INF Treaty and the Chemical Weapons Convention. Finally, the IAEA must have adequate funding to effectively carry out its safeguarding responsibilities.

Last fall, I, along with Senator John Glenn, introduced a Joint Resolution laying out 21 reforms to strengthen the IAEA. Our resolution instructs the Administration to investigate the feasibility of undertaking these proposals and then report back to Congress.

Everyone recognizes the threat of proliferation. It's time to take concrete measures to stop it. The Administration must take a leadership role on this issue. We need action, we can't afford to close our eyes to this problem any longer.

SENATOR BINGAMAN. We have two panels this morning. The first panel is a group of experts—specialists in this field—all of whom have published extensively and are recognized authorities in the area of arms control and proliferation of weapons.

Michael Klare is an associate professor of Peace and World Security Studies at Hampshire College and at a consortium of other colleges.

Kathleen Bailey is Vice President and Director of the Arms Control Studies at the National Security Research, Inc. During the 1980s, she served in a variety of posts in the U.S. Government, including the Bureau of Intelligence and Research, Department of State and the U.S. Information Agency.

William Potter is the Director of the Center for Russian and Eurasian Studies, and a professor at the Monterey Institute of International Studies.

Janne Nolan is a senior fellow at the Brookings Institution, and was in the U.S. Arms Control and Disarmament Agency during the Carter Administration.

We will have separate introductions of the government witnesses when we get to that panel, but I think at this point, why don't we go ahead and hear from the first panel.

Why don't we just start here on the left and have each of you summarize your testimony, if you would. We'll include the full statements in the record. If you would make your major points, we'll then have a little time for questions in the process.

Mr. Klare, please proceed.

STATEMENT OF MICHAEL T. KLARE, ASSOCIATE PROFESSOR, PEACE AND WORLD SECURITY STUDIES, HAMPSHIRE COLLEGE

MR. KLARE. Thank you very much, Senator, for letting me have this opportunity to address the trade in conventional weapons.

This is a particularly opportune moment to have such a review and discussion, because we're poised at a critical crossroads on this issue.

A year ago, following the conclusion of Operation Desert Storm, the United States embarked on a process of developing multilateral constraints on the arms trade, and since then we've seen some progress in that direction. But the Administration has also authorized billions of dollars in new arms sales to the Middle East, and appears poised to sell more arms to the region in the year ahead.

We're faced, therefore, with a fundamental choice—whether we will be proceeding more in the direction of multilateral constraint, or if we will allow the restoration of an essentially unregulated arms market.

The choice we make in this regard will be critical. With the Cold War over, the greatest threat to world security in the 1990s is regional conflicts and insurgencies. In this situation, the tempo of the conventional arms trade will be critical—if the arms flow increases, we're likely to see longer conflicts and more of them; if we could somehow bring the arms trade under control, we have a much better chance at curbing the virulence of regional conflicts.

Unfortunately, the proliferation of conventional arms has received less attention from U.S. policymakers than the proliferation of nuclear, chemical

and missile technology. And I understand the importance of curbing the trade in unconventional weapons. But we have to recognize that the trade in conventional weapons is a critical part of the proliferation problem and one that, if not brought under control, could seriously undermine U.S. efforts to promote peace and stability in regions of conflict.

I would argue that a focus on conventional weapons is critical for five reasons:

First, the military might of likely regional adversaries is composed essentially of their conventional weapons. Iraq used its conventional forces to seize and occupy Kuwait, and we had to assemble an enormous opposition force to drive him out.

Second, there's a close relationship between conventional arms transfers and the risk of escalation to unconventional weapons. It's precisely because aspiring regional powers have so many conventional weapons that some among them seek unconventional weapons, nuclear and/or chemical, as a hedge and a deterrent. And the greatest risk we face of nuclear escalation in the 1990s is in a conventional war in which one side or the other faces catastrophic defeat and uses its incipient nuclear arsenal in its final defense.

Third, the diffusion of conventional military technologies is preceding even faster than the proliferation of nuclear and chemical technologies. Already, dozens of countries in the Third World are developing modern arms industries, some of them quite sophisticated, and are becoming arms exporters on their own.

Fourth, the growing flow of conventional arms sales through established government-to-government channels is inevitably spilling over into the black market, making it easier for terrorists and insurgents and separatists to get arms to fuel the terrible ethnic and civil conflicts that we've seen in the past few years.

And fifth, there's a growing risk that American forces and those of our allies that are engaged in peacekeeping or contingency operations abroad will face heavily equipped enemies with very sophisticated weapons—including our own weapons in some cases.

For all of these reasons, it's very evident that control of the conventional arms trade is a major U.S. priority. And I think that the Persian Gulf War demonstrated that, and led the Bush Administration a year ago to indicate that this would be a priority in the post-Gulf War era.

A year ago, Secretary of State Baker told the House Foreign Affairs Committee that we must:

> Try to change the destructive pattern of military competition and proliferation in [the Middle East] and to reduce the arms flow into an area that is already overmilitarized.

In consonance with that view, the Administration announced a Middle East Arms Control Initiative on May 29, 1991, which called for controls on conventional arms transfers. And thereafter, the five permanent members of the U.N. Security Council—the Perm Five—met first in Paris and then in London, and adopted on October 18th a number of guidelines on the control of conventional weapons—proposed guidelines, I should say.

They pledged to avoid arms transfers that would be likely to: Prolong or aggravate an existing arms conflict; increase tension in a region or contribute to regional stability; or, introduce destablizing military capabilities in a region.

The adoption of these guidelines represents a strong commitment by the United States to conventional arms transfer restraint, and, if followed up with effective enforcement and compliance and regulatory measures, could make a real difference in slowing the spread of sophisticated weapons to areas of conflict.

It's not clear, however, that the Administration views the guidelines in this manner. Rather, there's some evidence that the Administration is following an alternate track of increasing arms sales to our friends in the Middle East and in other Third World areas. Indeed, we've seen statements by Secretary of Defense Cheney to the effect that arms control doesn't inhibit us from selling the weapons we want to areas where we have allies.

And in line with that view, we've seen a sharp increase in U.S. military sales to the Middle East, and, according to the Javits list, as has been reported in the press, proposed U.S. arms sales for 1992 totals $35 billion, with two thirds of that going to the Middle East, and a large part of it to Saudi Arabia, including the proposed sale of 72 F-15 fighters.

The problem with pursuing these sales is that this behavior will be read by other major suppliers as giving them permission to proceed with their own arms sales. And, as you reported from your trip to the Soviet Union, Russian leaders and leaders of the other former Soviet republics say that if the West is not going to curb its arms sales, we feel free to use our very elaborate military infrastructure to export arms for the hard currency that we so badly need.

Also, our friends in Europe—the French and the British—with declining arms spending on their own military forces, are looking for any excuse to boost their sales to the Middle East and other Third World areas.

The result of this behavior, I fear, is likely to be a new round of arms-buying in the Middle East, leading to larger inventories of sophisticated weapons, and I believe a greater risk down the line that these weapons will be used in conflict, and sustain regional wars of greater intensity and with a greater risk of escalation.

It seems to me, therefore, that the country is faced with a choice: Whether to proceed in the direction of business-as-usual in the sale of weapons—and face the risk of greater escalation in the future—or to proceed with the track that we began a year ago, following the Persian Gulf War, of a strong commitment to multinational arms restraints.

I think, in conclusion, that it would be to our advantage to proceed in the direction of greater control over the arms trade. I think there are five reasons why that would be our best choice of how to proceed.

Such controls would enhance U.S. security, first, by preventing the rise of another heavily armed regional superpower like Sadam Hussein's Iraq.

Second, by moderating local arms races in areas of tension and prompting the states of the region, especially in the Middle East, to pursue regional security pacts and arms control agreements that would minimize the risk of future conflicts in those areas.

Third, by slowing down the spread of conventional arms-making technology to aspiring arms producers and exporters in the Third World.

Fourth, by slowing the leakage of modern weapons into the black-market arms traffic.

And fifth, by diminishing the risk that U.S. and friendly forces committed to future peacekeeping operations will be attacked with sophisticated weapons of our own manufacturing.

I think that these benefits of a strengthened international regime for controlling arms sales will greatly outweigh any perceived advantages of an essentially unregulated arms market.

I'll conclude with the view that I hope our friends in Congress will continue to press the Executive Branch to view the Perm Five meetings as the place to develop very tight controls over the arms trade, and to proceed with enforcement and regulatory measures that go along with that.

Thank you very much.

[The prepared statement of Mr. Klare follows:]

PREPARED STATEMENT OF MICHAEL T. KLARE

Mr. Chairman and Members of the Subcommittee:

I am very pleased to have this opportunity to address current U.S. policies regarding the transfer of conventional weapons and sensitive military technologies to the Third World.

This is a particularly opportune occasion for a review of U.S. arms transfer policy, as we appear to be situated at a critical crossroads in our approach to this issue. A year ago, following the termination of Operation Desert Storm, President Bush indicated that conventional arms transfer control would be a major goal of U.S. foreign policy in the post-Gulf war period. Since then, U.S. officials have participated in a series of great-power talks aimed at constraining the flow of conventional arms to areas of conflict, and have helped draft a new set of international guidelines for this purpose. But the Administration has also authorized billions of dollars' worth of new arms exports to the Middle East, and appears poised to approve other such transactions--including the sale of 72 F-15 fighter aircraft to Saudi Arabia. And because other major military suppliers view increased U.S. weapons sales as a sign of American tolerance toward conventional arms transfers, it is likely that these suppliers will follow our lead and increase their own sales to areas of conflict. We are faced, therefore, with a choice between two clear policy options: either we move toward the adoption of tighter international constraints on the arms trade, or we allow the restoration of an essentially unregulated arms market.

The choice we make in this regard will be crucial for the future evolution of the international security environment. With the Cold War over, the greatest threat to world peace and security that we face today is the increasing frequency and intensity of regional conflicts. In this situation, the relative tempo and scale of international arms trafficking will prove critical: if the arms flow expands, we are almost certain to see an increase in the intensity and duration of regional conflicts; if we can somehow bring this trade under control, we will have a better chance at curbing the virulence of regional conflicts.

Unfortunately, the proliferation of conventional arms has tended to receive less attention from U.S. policymakers than has the proliferation of nuclear, chemical, and missile technology. This discrepancy reflects the perception that transfers of the latter are more dangerous than transfers of the former, and the belief that transfers of conventional weapons can, under certain circumstances, enhance U.S. security interests in the Third World. But while it is certainly true that the proliferation of unconventional weapons poses a substantial threat to world security and that conventional arms transfers can on occasion contribute to regional stability, it is essential to recognize that conventional arms trafficking is a key part of the global proliferation problem, and that our failure to bring this trade under tight control will seriously undermine U.S. efforts to promote peace and stability in areas of conflict.

An expanded focus on conventional arms transfer control is essential for several key reasons:

First, because the military might of likely regional aggressors is composed largely of modern conventional weapons acquired through international sales channels. True, the possession of ballistic missiles and weapons of mass destruction possessed by these states poses a significant risk to their neighbors, and must therefore be a matter for serious concern. But Iraq did not use its missiles to seize and occupy Kuwait--such acts of aggression can only be conducted by conventional forces. Similarly, the primary threat to Israel consists of the large conventional armies of its Arab neighbors. If we are to significantly diminish the threat of regional conflict and aggression, therefore, we must seek to limit and down-size the conventional armies and arsenals of potential belligerents.

Second, there is a close relationship between conventional arms transfers and the risk of nuclear and chemical escalation in regional conflicts. It is precisely because so many Third World countries have acquired large quantities of modern conventional weapons that some among them have acquired unconventional weapons as a hedge and a deterrent. The greater the flow of conventional arms to areas of conflict, the more likely that existing nuclear and chemical powers will seek to preserve and to expand their supplies of unconventional weapons. And, should any of these powers face catastrophic defeat in some future conventional conflict, they are certain to consider the actual use of their nuclear or chemical munitions--indeed, this is the most likely way in which a regional nuclear war might erupt in the post-Cold War era.

Third, the diffusion of conventional arms-making technology is proceeding at an even more rapid pace than the spread of nuclear, chemical, and missile technology. According to the Stockholm International Peace Research Institute (SIPRI), some four dozen Third World countries now manufacture small arms and light artillery, while a dozen or so produce tanks, aircraft, ships, and missiles. Many of these countries plan to expand and to upgrade their military production efforts in the years ahead. In many cases, moreover, they have entered the arms trade as suppliers on their own, thus further contributing to the global glut of conventional weapons.

Fourth, the growth in conventional arms sales to the states of the Third World is being accompanied by--and contributes to--a growing black-market arms trade with insurgents, terrorists, separatist groups, and other non-state entities. No matter how rigorous our export controls and those of our allies, it is inevitable that a certain percentage of state-to-state military sales leak into the black-market arms trade; with the growing privatization of weapons production in both East and West, and with the breakdown in central control over arms exports in the former Soviet Union, this leakage appears to be growing larger all the time. And because there is such a close relationship between intra-state and inter-state violence in most Third World areas, the expanding arms capabilities of non-state actors pose a very significant threat to regional peace and stability.

And fifth, there is the growing risk that U.S. forces committed to peacekeeping or contingency operations abroad will be confronted by capable Third World armies equipped with large numbers of highly lethal and sophisticated weapons. We clearly faced such a threat in the Persian Gulf, but, fortunately for our side, Iraqi forces lacked the training and leadership to employ their high-technology weapons in an effective manner. We cannot assume, however, that such will be the case in all future confrontations of this sort; sooner or later, we are likely to confront a well-trained and well-equipped Third World army, and then the diffusion of modern arms will pose a very significant threat to the success of our efforts and to the lives of our soldiers.

For all of these reasons, it should be apparent that uncontrolled arms sales represent a very significant threat to U.S. and international stability. If there was any question about this before 1990, the Iraqi invasion of Kuwait and the subsequent crisis in the Persian Gulf should have dispelled any doubts about the matter.

Between 1980 and 1990, Iraq conducted the most ambitious buildup of conventional arms ever undertaken by a Third World country, and this undoubtedly contributed to the self-confidence with which Saddam Hussein's ordered the attack on Kuwait. Similarly, Hussein's stubborn refusal to abandon Kuwait was surely influenced by his belief that his mammoth arms supplies would protect him against external opposition. In addition, the evident ease with which Hussein was able to acquire sophisticated arms from the major suppliers--all of which, except for the United States, sold arms to Baghdad in the 1980s--must have persuaded him that the major powers had no real objection to his barely concealed hegemonic aspirations. Conventional arms sales thus played a very key role in provoking and sustaining the Persian Gulf crisis.

In the wake of this conflict, President Bush and his senior advisers acknowledged the threat posed by unconstrained arms sales and affirmed the need for new arms trade controls. "The time has come," Secretary of State Baker told the House Foreign Affairs Committee on February 6, 1990, "to try to change the destructive pattern of military competition and proliferation in [the Middle East] and to reduce the arms flow into an area that is already over-militarized." President Bush also spoke of the need for conventional arms trade restraint in his first press conference after the war's conclusion, on March 1, 1991. Curbing the spread of nuclear and chemical weapons would be the Administration's top priority, he indicated, "but let's hope that out of all this there will be less proliferation of all different types of weapons, not just unconventional weapons."

In the weeks that followed, conventional arms transfer restraint became a major topic in Congress, with many lawmakers calling for the adoption of new legislative restrictions on foreign military sales. "The window of opportunity for Middle East arms control is now open," Senate Joseph Biden told his colleagues on March 13, 1991, precisely one year ago. "Before it begins to shut," he asserted, "we must apply the same diplomatic skill and ingenuity to arms control that we brought to reversing Saddam's aggression against Kuwait, lest some future dictator, armed with Western technology, again unleash the dogs of war in the cauldron we call the Middle East." Along with other Members of Congress, Biden called for a moratorium on arms sales to the region pending international negotiations aimed at the adoption of multilateral arms transfer restraints.

In response to such efforts, and in keeping with the views of his own advisers, President Bush on May 29, 1991 announced a "Middle East Arms Control Initiative" aimed at curbing the spread of ballistic missiles, weapons of mass destruction, and "destabilizing" conventional arms. As part of this effort, Bush called for meetings of the five permanent members of the UN Security Council (the "Perm Five," or P-5) to consider the adoption of mutual "guidelines" for the control of conventional arms transfers. As envisioned by Bush, the guidelines would oblige the major suppliers "to observe a general code of responsible arms transfers" and "to avoid destabilizing transfers."

Bush's proposal for a meeting of major military suppliers was accepted by the other governments involved, and on July 8-9, 1991, representatives of the Perm Five met in Paris to discuss various proposals for conventional arms transfer restraint. In a communiqué issued at the conclusion of the meeting, the P-5 states declared that "They recognized that indiscriminate transfers of military weapons and technology contribute to regional instability," and that "They are fully conscious of the special responsibilities that are incumbent upon them [as major suppliers] to ensure that such risks be avoided."

In consonance with this outlook, representatives of the P-5 continued to meet over the summer and early fall, and, at a meeting in London on October 17-18, 1991, they adopted a set of draft guidelines for the control of the conventional arms trade. In signing the London document, the Perm Five promised to consult with one another regarding the flow of arms to particular regions, and to "observe rules of restraint" when deciding on major arms export transactions. They further pledged to avoid arms transfers that would be likely to: (a) prolong or aggravate an existing armed conflict; (b) increase tension in a region or contribute to regional instability; (c) introduce destabilizing military capabilities in a region; (d) contravene embargoes or other relevant internationally agreed restraints to which they are parties; or (e) be used other than for the legitimate defense and security needs of the recipient state.

The adoption of these guidelines suggests a strong commitment by the United States to the principle of conventional arms transfer restraint. If followed up with appropriate regulatory and enforcement measures, the London guidelines could provide the foundation for an international arms transfer control regime akin to the existing regimes for the control of nuclear, chemical, missile technology. It is not clear, however, that Bush Administration officials view the guidelines in quite this manner. Rather, senior officials appear to view the guidelines as little more than a hedge against some future repetition of Iraq's mammoth arms buildup of the 1980s.[1]

The Bush Administration's reluctance to interpret the London guidelines as a call for significant arms transfer restraint is undoubtedly a product of the Administration's continuing belief in the efficacy of arms transfers as a tool of foreign and military policy. This view of arms exports first arose during the early Cold War era, when both superpowers began to use such transfers as a device for winning and retaining the loyalty of Third World countries, especially in the Middle East. Later, during the Nixon era, such transfers were also seen by U.S. policymakers as a means for strengthening the defenses of exposed pro-Western states in order to diminish the potential requirement for direct U.S. military intervention on their behalf (this approach constituting the so-called "Nixon Doctrine). Now, in the post-Cold War era, many U.S. policymakers continue to cling to these beliefs even though Moscow is no longer in a position to challenge Washington for the loyalty of Third World powers, and even though many once-vulnerable Third World countries are engaged in regional power struggles on their own.

This inherited view of the political and military efficacy of arms transfers is clearly evident in statements by senior Administration officials. Thus, in response to queries regarding the desirability of arms transfer restraints, Secretary of Defense Dick Cheney told Congress on March 19, 1991 that while he might be willing to entertain some such controls, the continuing supply of arms to U.S. allies in the Middle East should remain America's top priority. "I think our first concern ought to be to work with our friends and allies to see to it that they're secure," he asserted.

This perspective continued to influence U.S. arms export policy even after the announcement of the President's Middle East Arms Control Initiative on May 29, 1991. Thus, on June 4, Cheney told reporters accompanying him on a trip to the Middle East that the United States

[1] For an analysis of the Bush Administration's interpretation of the P-5 guidelines, see: BASIC Reports on European Arms Control, British-American Security Information Council, February 19, 1992.

would continue to satisfy requests from friends and allies in the region for access to advanced U.S. military equipment. "We simply can't fall into the trap of [saying] that arms control means we don't provide any arms to the Middle East he noted. "That is not what we recommend... [and] it would be an unwise policy."

In attempting to reconcile such comments with the President's stated commitment to conventional arms transfer restraint, Administration officials contend that there is no contradiction between continued transfers of "defensive" arms to friendly powers and the continued pursuit of multilateral arms controls. "We do not believe that arms sales are necessarily destabilizing," Under Secretary of State Reginald Bartholomew told the Senate Foreign Relations Committee on June 6, 1991. Rather, such transfers can promote stability by enhancing the defensive capabilities of friendly nations. "That is why," he argued, "it is in no way a contradiction for the United States to be simultaneously seeking an arms transfer regime with the other major suppliers and continuing to supply arms needed by peaceful states to defend themselves against aggressors."

This, in essence, represents the heart of the Administration's current position on conventional arms transfers: we will pursue moderate restraints at the international level, while continuing to satisfy the military requirements of key allies and clients in the Third World. It is a position that appears to satisfy competing pressures and demands: on one hand, the pressure to follow through on pledges to establish international controls on arms trafficking; on the other, the pressure to preserve long-standing military relationships with friendly foreign governments.

But while a compromise position of this sort is undoubtedly attractive to U.S. policymakers, it is not a stance that can be sustained indefinitely. Given the multiplicity of suppliers in the conventional arms market and the strong pressures being experienced by many of them to increase foreign sales (due to significant reductions in domestic military spending), any increase in U.S. military sales to allies and clients abroad will inevitably be seen by other suppliers as providing justification for an increase in their own arms export activities. And because what is viewed as "defensive" by one country is often seen as potentially offensive to another, increased U.S. military sales to any given countries in a region--no matter how defensive we may consider the equipment in question to be--will inevitably stimulate a desire for increased arms acquisitions by their neighbors and rivals. The result, in all likelihood, will be an intensified regional arms race with an increased risk of miscalculation and conflict.

This dilemma is readily apparent to arms control experts and to many members of Congress. Thus, in response to a March 1, 1991 Administration announcement of pending F-16 aircraft sales to Egypt, Senator Biden observed on March 13 that "our signals have become muddled. One day we promote the idea of Middle East arms control, the next day we step back; one day we promote a postwar order based on security with fewer weapons, and the next day the State Department notifies Congress of its intent to sell 46 F-16s to Egypt." Noting that other suppliers are ready and eager to increase their own sales to the region, Biden suggested that "the message [the F-16 sale] will send--both to other supplier nations and to nations in the region--will be this: the Middle East arms bazaar is once again open and ready for business."

At this point, it appears that Biden's prediction is largely on the mark: while it might be argued that the "Middle East arms bazaar" would be even more raucous in the absence of U.S. nonproliferation efforts, there is no doubt that the major states of the region (excluding Iraq) are enjoying a buyer's market in their pursuit of high-tech weapons. A recent report conducted by the Congressional Research Service at the request of Senator John McCain on Arms Sales to the Middle East Since the Gulf War shows substantial deliveries of sophisticated arms to such states as Egypt, Iran, Israel, Kuwait, Oman, Saudi Arabia, Syria, and the United Arab Emirates (UAE). "The key message [of the report]," Senator McCain observed on November 21, 1991, "is that the threat to the Middle East is not over."

The arms race in the Middle East will no doubt continue to escalate if the United States proceeds with planned sales to its allies in the region, and if other major suppliers follow suit. According to published accounts of the Administration's arms export plans for 1992 (the so-called "Javits list" of pending arms transactions), the Executive Branch is contemplating some $35 billion in new Foreign Military Sales (FMS) agreements, with the majority of these agreements involving buyers in the Middle East. Included among the proposed FMS transactions is the sale of 72 F-15 fighters to Saudi Arabia, of which 48 are reported to be F-15Es--an advanced ground attack version of the plane that has never previously been sold to foreign customers.[2]

Should the United States proceed with all or many of these pending sales, other major suppliers are likely to pursue equivalent sales on their own, and thus the London guidelines (however modified at the forthcoming P-5 talks in Washington) will lose much of their meaning. The impact of unconstrained U.S. sales on other suppliers is readily apparent in recent statements by Russian leaders concerning their own country's sales policies. "I think if other countries would have started reducing arms deliveries, this would have had some effect" on us, observed Andrei Kokoshin, a senior Russian military expert, in a February 23, 1992 interview in The Washington Post. However, "it turned out that most democratic countries are not stopping arms sales, but increasing them." For these reason, he noted, it is unrealistic to expect Russian arms companies to reduce their own sales activities, he noted. Similar views have been articulated by other senior Russian leaders, including President Boris Yeltsin. "Today, trading in arms is a necessity for us," he told Izvestia on February 22. "Soviet weapons are highly popular in the world and easily find buyers."

No such comments have been expressed publicly by leaders of the other major supplying countries, but it is safe to assume that they view matters in a similar light. This is particularly true for the leaders of Britain, France, Germany, and Italy, all of which face a sharp decline in national military spending (due to the Cold War's end) and thus growing pressures from domestic arms producers to increase foreign sales. This pressure to sell was plainly visible at the Dubai arms expo in November 1991, which attracted three times as many exhibitors as the 1989 Dubai exposition.[3]

It is evident, therefore, that despite the Administration's efforts to balance competing demands, there is a contradiction between selling arms to foreign governments and pursuing multilateral constraints on arms transfers. The United States cannot pursue both goals simultaneously and expect to accomplish its stated objectives. We must choose that approach which we determine will best serve America's long-term security interests.

The arguments in favor of the traditional approach are well known.[4] By strengthening the defensive capabilities of America's friends and allies, it is argued, we help to deter attacks on them by aspiring regional hegemons, and diminish the likelihood that American forces will be required to repel such aggression in the event that deterrence fails.

A new wrinkle has been added to this argument following the failure of the U.S.-supplied Kuwaiti army to deter or provide significant resistance to invading Iraqi forces, and the subsequent failure of the U.S.-supplied Saudi army to defend its territory on its own. While it may not be possible to avert future U.S. interventions in the region, the argument now goes, arms transfers can help local states to defend themselves long enough to allow U.S. reinforcements to be flown in from afar, rather than from bases immediately in the region. "The policy which we're pursuing now [in the Gulf area] is one in which we want to minimize the U.S. military presence on the ground in the region," Secretary Cheney told the House Foreign Affairs Committee on March 19, 1991. "It's probably easier to do [this] if we help our friends like the Saudis and the Gulf states have sufficient capability to be able to defend themselves long enough for us to be able to get back."

These arguments have a certain amount of merit, and were largely successful during the Cold War period in persuading Congress to support U.S. arms transfers to friendly nations in the Third World. But a policy that may have made sense in the bipolar world of the Cold War era does not necessarily make sense in the multipolar world of the post-Cold War era–a world in which long-standing loyalties and alliances are breaking down and in which every nation is scrambling to advance its own national interests. A sobering picture of this world was provided in the U.S. Army "Posture Statement" for Fiscal Year 1991:

---

[2] See AP story by Jim Drinkard, Washington, D.C., February 26, 1992.

[3] See: "Middle East Offers U.S. Firms an Aerospace Sales Bonanza," Aviation Week and Space Technology, November 4, 1991, pp. 54-62

[4] For articulation of these arguments, see: Paul Y. Hammond, et. al., The Reluctant Supplier (Cambridge, Mass.: Oelgeschlager, Gunn & Hain, 1983); and Roger P. Labrie, et. al., U.S. Arms Sales Policy: Background and Issues (Washington: American Enterprise Institute, 1982)

The United States faces as complex and varied a security environment as it enters the 1990s as at any time in its history. The world economy is becoming more integrated and new centers of influence are developing. The increased lethality of weaponry, and the proliferation of force in the developing world make regional conflicts more rather than less likely. Allies are becoming more assertive in pursuing their own interests and are less apt to follow the lead of a superpower. (p.I-1) If this is an accurate picture of the post-Cold War world, and I believe that it is, we must ask whether it still makes sense to continue supplying Third World countries with modern arms in the belief that American interests will be best served thereby–or, alternatively, whether we should conclude that further U.S. arms transfers will simply add to the picture of instability sketched out above.

I believe that there are situations in which timely deliveries of purely defensive systems like the Patriot missile can contribute to regional stability. But these situations are rare. In most cases, U.S. deliveries to a given power in a region will only fuel the insecurities of neighboring countries, thus provoking additional arms transfers into the region and placing the original country at greater rather than lesser risk. "The Bush Administration is correct in saying that the nations in the region have legitimate security concerns," former ACDA Director Paul C. Warnke told the Permanent Senate Subcommittee on Investigations on June 12, 1991; "however, their security interests are only made more precarious as the region becomes further laden with sophisticated conventional armaments."

It is also risky, as repeatedly demonstrated by events in the Middle East, to assume that today's friendly regime will remain friendly in the future, or that it will successfully resist efforts by hostile political factions to overthrow it. The United States poured billions of dollars' worth of sophisticated arms into Iran when we thought that the reign of the Shah would last forever; today, those same weapons (or at least those for which the Iranians have been able to obtain spare parts) are being used by the Shah's revolutionary successors to threaten stability in the Gulf area. "Plausible strategic justifications are of course offered for each sale" to friendly recipients in the Third World," Edward Luttwak noted in The New York Times on November 4, 1990, "but these are worthless when the recipients are fragile autocracies whose policies can change overnight."

Nor can we have any confidence that substantial U.S. arms transfers to threatened allies will significantly reduce the need for U.S. intervention, should a key ally come under attack. "The Gulf War proved that, no matter how well [America's allies] are armed, the United States still is the ultimate guarantor of their security," Warnke testified in 1991. "We simply cannot arm Saudi Arabia or Israel or Egypt enough to ensure their physical safety, especially if we are arming their neighbors as well."

Looking at the other side of the equation, it is evident that rigorous international controls on conventional arms transfers would prove a real asset to U.S. security in the post-Cold War era. Such controls would enhance U.S. security in several ways:

(1) By preventing the rise of another heavily-armed regional superpower like Saddam Hussein's Iraq. A transparency system, based on the soon-to-be-established U.N. arms trade register, can provide early warning of major arms acquisitions efforts by aspiring regional powers; supplier restraints could then ensure that such efforts are curtailed before the recipient in question assembles a significant offensive capability.

(2) By moderating local arms races in areas of tension, and prompting the states of these areas to pursue regional arms control and security agreements designed to minimize the risk of conflict. So long as regional powers believe that they can gain a significant military advantage over their rivals through further arms acquisitions, they will resist all calls to sit down with one another and adopt mutual restraints on military systems; once the prospect of such acquisitions is foreclosed, however, they will have a greater incentive to negotiate such restraints.

(3) By slowing down the spread of conventional arms-making technology to aspiring arms producers in the Third World. While it is not possible to stop the spread of all such systems, it should be possible to curb the transfer of advanced military technologies whose diffusion would further exacerbate the arms problem in areas of conflict.

(4) By slowing the leakage of modern weapons into the black market arms traffic, and providing governments with effective tools for curbing this traffic.

(5) By diminishing the risk that U.S. and friendly forces committed to future peacekeeping or contingency operations abroad will be attacked with large numbers of sophisticated conventional weapons of their own manufacture.

Given this assessment, I believe that America's security interests–and those of our allies–would best be secured by constraining the flow of conventional arms to areas of conflict, and by persuading the nations of the area to join in regional peace talks aimed at reducing regional tensions and lowering the levels of regional arsenals. This approach has, in fact, been written into U.S. law: As stated in Section 401 of the Foreign Relations Authorization Act for Fiscal 1992-1993, "future security and stability in the Middle East and Persian Gulf region would be enhanced by establishing a stable military balance among regional powers by restraining and reducing both conventional and unconventional weapons." On this basis, Section 402 of the Act calls upon the Executive Branch to work with other major arms suppliers to establish a multilateral arms transfer control regime similar to those now covering exports of nuclear, chemical, and missile technology.[5]

In keeping with the intent of Section 402, I propose that Congress support and encourage efforts by the Executive Branch to pursue the following initiatives:

* Greater transparency in international arms trafficking through timely reporting of all proposed U.S. arms transactions to Congress and active participation in the UN-mandated conventional arm trade register.

* Meaningful supplier restraints through vigorous implementation of the October 17-18 London guidelines and the adoption of appropriate verification and enforcement measures.

* Enhanced multilateral technology controls through the adoption of MTCR-like regimes covering such items as submarines, cruise missiles, and antisatellite weapons.

* Enhanced domestic control over the export of U.S. military technology through the adoption of rigorous inter-agency review procedures and regular consultation with Congress.

* Economic incentives and disincentives entailing reductions in development loans and grants to underdeveloped nations that devote disproportionate funds to arms purchases, along with incentive loans and grants to countries that agree to significantly reduce their military spending.

* The establishment of international curbs on black-market arms trafficking involving stepped-up cooperation between the customs and intelligence agencies of affected states and the adoption of uniform import/export oversight procedures.

* Vigorous U.S. diplomacy aimed at the negotiation of regional security pacts in the Middle East and elsewhere incorporating mutual limits on conventional arsenals and arms imports by nations of the region.

In conclusion, I believe that a careful assessment of the two choices facing U.S. policymakers with respect to conventional arms transfers to the Third World will lead inescapably to the conclusion that, in today's uncertain and chaotic world, it is safer to view most arms transfers as a potential proliferation risk rather than as an assured asset for U.S. national security. Some provision must remain for the transfer of Patriot missiles and other systems that can have no function other than self-defense against external aggression. But our first priority as a nation should be to pursue the establishment of an arms transfer control regime like that envisioned in Section 402 of the Foreign Relations Authorization Act, and to accelerate the efforts initiated by Mr. Baker to promote a comprehensive peace settlement in the Middle East.

---

[5] For a discussion of such controls, see: Klare, "Gaining Control: Building a Comprehensive Arms Restraint System," Arms Control Today, June 1991, pp. 9-13.

SENATOR BINGAMAN. Thank you very much.

Ms. Bailey, why don't you go ahead.

STATEMENT OF KATHLEEN BAILEY, VICE PRESIDENT AND DIRECTOR OF ARMS CONTROL STUDIES, NATIONAL SECURITY RESEARCH, INC.

Ms. BAILEY. Thank you, Senator.

I appreciate the opportunity to appear before this Subcommittee on the topic of the Arms Trade Nonproliferation and Export Controls. Some people may say that the nonproliferation export controls cannot work and should be discarded. Others may argue that they are workable and should be made more stringent. Today, I will argue a middle position, that export controls should be maintained, but should not be the focus of efforts to strengthen the nonproliferation regime. My remarks will address two questions: How effective are export controls in curtailing proliferation? And what are the costs associated with such controls? If time allows, I will then conclude with my assessment as to how nonproliferation policy could be more effective.

Export controls were first used as a nonproliferation tool in the nuclear arena. They were fairly successful for a number of reasons. Nuclear-related technology tends to be non-dual-use; it usually involves large equipment that can be provided by only a limited number of companies. Furthermore, nuclear power programs, the starting point of several nascent nuclear weapons programs in the past, are high-cost ventures that are fairly visible. They can be easily targeted for technology denial. Once facilities are built, they are physically identifiable not only because of their appearance, but also because of their emissions. Thus, generally speaking, it is difficult to have a clandestine nuclear program, although it has been done, as Iraq has proven.

In the early 1980s, other types of proliferation increasingly became problems—chemical, biological, and missile. It was natural for policymakers to respond with a tool that had shown success in the nuclear area—export controls. Thus, the Missile Technology Control Regime and the Australia Group were born. The latter covers chemical exports, and is currently exploring biological controls as well. The record of both regimes is not very good, and can be expected to improve only marginally with increased efforts to enforce them. Let me explain.

First, on the MTCR.

Since its inception in 1987, the following nations have acquired missiles: Saudi Arabia bought missiles from China; Iraq upgraded Scuds to travel in excess of 500 kilometers; North Korea reverse-engineered and upgraded Scuds; India test-fired its Agni missile to a range exceeding 600 kilometers; Israel put a satellite, which has basically the same technology as a ballistic missile, into orbit; South Africa test-fired a ballistic missile, possibly with Israeli help; Iran test-fired a Scud C supplied by North Korea to a distance of 500 kilometer; and also, Syria has imported Scud Cs from North Korea.

Even Argentina's Condor program, which many credit the MTCR with having stopped, continues by another name. In May of last year, Argentine Defense Minister Antonio Erman Gonzalez announced that "all installations and equipment" for the Condor-2 missile program will be moved from the Air Force to the National Commission on Space Investigation. This will allow the

Condor, which could be used for weapons purposes eventually, to proceed under the cover of peaceful space exploration.

One could argue that the above examples of proliferation represent the culmination of missile programs that were underway before the MTCR had the chance to take effect. While this is true in some of the cases, careful examination of the missile proliferation phenomenon reveals that the MTCR perhaps slows some programs, but does not deter or stem them.

The first reason for this is that the MTCR does not address the demand-side; it does nothing to affect the motivations of countries to proliferate. In fact, the MTCR is seen by many in the Third World as a regime of the "haves" against the "have nots." They ask the question, why should only a handful of industrialized states have missiles while we cannot?

There are a number of other problems that, taken together, militate against success of missile export controls:

First, missile technology and equipment are largely dual-use; i.e., it is not just for missiles, but also applicable to other products as well.

Second, equipment is often small and relatively inexpensive, making its transfer very difficult to observe.

Third, offensive missile programs can be hidden under the guise of civilian programs.

Fourth, much of the technology can be produced indigenously by many countries.

Fifth, Eastern European nations and former Soviet republics may market their capabilities and components.

And finally, as export controls are tightened by members of supplier regimes, it becomes more profitable for new suppliers to enter the market.

With regard to the last point, it is crucial to note that a number of new possible suppliers are on the horizon, including Syria, Egypt, Brazil, Taiwan, South Korea, South Africa, Israel and Iran. Furthermore, these countries can undertake "piecemeal proliferation"—as China may be—selling missile subcomponents or know-how for financial or political profit.

The missile proliferation problem is made even more bleak by the fact that countries are likely to focus increasingly on cruise missiles instead of on ballistic. This option will be attractive in part because of the relative simplicity of cruise missile technology and the widespread availability of aircraft and jet engine components. Many countries are able to manufacture jet aircraft. Brazil, for example, exports them.

Thus, we cannot expect the same success with missile export controls that we have come to rely upon in the case of nuclear export controls. The technology is easier, less observable, more dual-use, and available from a wider range of supplier countries.

Turning to chemical proliferation, the situation is that chemicals are even less susceptible to export controls. Chemical weapons can be made by any country that wants them. The technology is no obstacle. The technology for producing chemical agents is of World War I vintage, is described openly in literature, and is easily understood by chemists and chemical engineers knowledgeable in industrial chemical production. The equipment used is the same as that required for production of common commercial chemicals.

Any country with a standard chemical-industrial base can manufacture chemicals controlled by the Australia Goup—the Export Control Regime. Countries without such a base could do so if they were dedicated. It is a matter of will and resource allocation, not availability of technology.

Chemical export controls will not prevent proliferants from obtaining weapons-relevant compounds. The controls will only prevent those countries from acquiring these compounds from Australia Group members.

Misconceptions about the efficacy of export controls are fed by two erroneous assumptions. First, that chemical weapons programs are necessarily observable and can therefore be targeted by suppliers. The second erroneous assumption is that less developed countries will be reliant on imports.

The first point, chemical weapons facilities need not have any distinguishing features or activities. A clandestine CW facility may be completely undetectable by national technical means. Only intelligence from human sources may reveal its existence.

On the second point, the case of Iraq is instructive.

Iraq purchased its primary chemical production facility from a German firm. Some people may conclude from this that Iraq would therefore be unable to construct a chemical agent production plant by itself.

This is inaccurate.

Iraq bought the German plant because it was available, easier and better. Iraq is capable of making chemical agents entirely on its own, although the standards and quality would not be as high.

For example, Iraq may not be able to make glass-lined reactor vessels. Instead, it might use unlined vessels, replacing them every few months as they corroded. While this is neither efficient nor economical, it is workable.

Biological-weapons-related export controls are the least effective of all. The requisite equipment is widely available and fairly easy to manufacture. To place export controls on it would not only be ineffective, but considered by many to be immoral.

The equipment is the same as that used for medical research. Placing controls on exports of cultures will slow the acquisition of "common" BW viruses, bacteria and biological-origin toxins only by a matter of weeks or months, as the organisms are readily available in nature. In addition to the question of effectiveness, we should ask whether there are costs that make export controls less attractive. I would like to mention briefly four.

First, there is a cost to the effectiveness of nonproliferation policy itself. This may sound contradictory, but it isn't. Export controls divert resources of governments—particularly in countries that do not have bureaucracies and budgets the size of America's.

Additionally, there is the complacency factor. Policymakers may relax once export controls are tightened, mistakenly believing that they will take care of the problem.

The second cost is economic. U.S. businesses will be hurt as foreign suppliers rush to make sales of dual-use controlled items. Suppliers will include not only Third World nations, but also former Warsaw Pact and Soviet successor states. Even European companies ostensibly restrained by supplier

regimes are likely to compete after the formation of the European unified market in 1993.

It will be easy for companies to circumvent controls by exporting through neighboring countries, whose abilities and will to watch their borders are less.

A third cost of export controls is the loss of intelligence and influence. By not exporting widely available dual-use items, the United States loses its access to and knowledge about programs in recipient countries. When the United States is the supplier country, it can require end-use assurances and establish the right to inspect that use.

A fourth cost is perceptual, pitting the United States against developed countries, on one hand, and against its allies on the other. By emphasizing export controls, the United States sets up a haves versus have-nots situation that engenders resentment among less developed countries, particularly those who have no intent to develop weapons of mass destruction or delivery systems.

These countries are less likely to cooperate in nonproliferation efforts of any sort. Similarly, European willingness to cooperate with Washington is hurt when the United States unilaterally takes steps to make export controls more stringent. Europeans are particularly bothered by the extraterritoriality of U.S. laws.

There is a folly of which we should be wary. That is, we should avoid bringing into export control regimes the very nations that are the targets of those regimes.

Consider this example.

Country A is known to be pursuing ballistic missile development, but under the guise of a peaceful space program. It appeals to America and others to allow it to import relevant technology, promising that in return it will abide by restrictions of the MTCR. When that Country A does so, everyone relaxes, thinking the MTCR adherent itself is not a proliferation risk.

From the foregoing, several conclusions and recommendations can be drawn.

First, export controls are workable in some cases and should be maintained when the items controlled are non-dual-use.

Second, dual-use items should be controlled only if they are not widely available, not easily produced by proliferants, and there is consensus among suppliers regarding their control.

Third, more emphasis should be placed on demand-side, nonproliferation policies, as export control regimes will not prevent a determined proliferator.

I will now turn briefly to the policy alternatives, and here I will skim over my presentation and make only a few points.

First, one alternative is that defenses may be made available to countries. This may include, for example, trading missile defensive systems, such as an upgraded Patriot system or the types of missile capability that will be available under the Global Protection Against Limited Strikes program, in return for nations giving up their offensive capabilities.

A second proposal is to initiate arms control. And here, I would like to be a little more thorough in my description.

With the end of the Cold War, there is a general perception that the need for arms controls is passed. Yet, arms control has a tremendous role to play in

the proliferation arena. Applying selected arms control achievements of the United States and the former Soviet Union is a very good place to start.

For example, it would be highly constructive to internationalize the Intermediate Nuclear Forces Treaty. Iraq and other countries should not be able to fire at U.S. forces missiles of a type banned from U.S. arsenals by the INF treaty.

Internationalizing INF would be beneficial in reducing proliferants' inventories, restricting their missile testing programs, avoiding the haves versus have-nots argument, and bypassing lengthy negotiations.

I would also advocate a third proposal, and that is to engage in dialogue. It is important for elites in developing countries to confront the very issues that we have faced in the past about whether or not having such weapons of mass destruction actually makes them more vulnerable or less so.

Fourth, we need to diversify U.S. policy responsibility. The bureaucratic trend is toward the consolidation of responsibility for proliferation issues. This is certainly appropriate in the case of intelligence-gathering and analysis, as it is in the actual application of export controls and customs work.

With foreign policy implementation, however, consolidation can be harmful. It would likely lead to formation within the U.S. foreign policy community of a czardom, which can only be as good as the czar chosen to run it.

Given the complexity of technical and political information that must be mastered on each type of proliferation and the variety of countries involved, it would be likely that a consolidated policy body would give insufficient attention to small fires as it tries to address large blazes.

Rather than banking on finding the right set of people to deal with proliferation of all types in all countries, it would be useful to diversity responsibility for nonproliferation. This would mean that individuals responsible for dealing with a host of political economic issues with a given country should also include proliferation issues in their portfolio.

In summary, U.S. nonproliferation policy regimes have not been very successful because of unwarranted reliance on export controls. Due to the ease and availability of technology, making such controls more stringent or organizing them under one roof will make little difference.

It might even be harmful.

Instead, export controls should be pared down to make them easier to consistently and rationally apply and to reduce some of the associated costs. More resources should be spent on demand-side policies, such as arms control and security enhancement.

Thank you.

[The prepared statement of Ms. Bailey follows:]

PREPARED STATEMENT OF KATHLEEN C. BAILEY

The Arms Trade, Nonproliferation, And Export Controls

Some people may say that non-proliferation export controls cannot work and should be discarded; others may argue that they are workable and that they should be made more stringent. Today I will argue a middle position: that export controls should be maintained, but should not be the focus of efforts to strengthen the non-proliferation regime. My remarks will address two questions: How effective are export controls in curtailing proliferation? What are the costs associated with such controls? I will then conclude with my assessment of how U.S. nonproliferation policy could be more effective.

Effectiveness Of Export Controls

Export controls were first used as a non-proliferation tool in the nuclear arena. They were fairly successful for a number of reasons. Nuclear- related technology tends to be non-dual-use; it usually involves large equipment that can be provided by only a limited number of companies, most of which are large corporations that understand export control objectives and practices. Furthermore, nuclear power programs--the starting point of several nascent nuclear weapons programs in the past--are high-cost ventures that are fairly visible. They can easily be targeted for technology denial. Once facilities are built, they are physically identifiable not only because of their appearance, but also their emissions. Thus, generally speaking, it is difficult to have a clandestine nuclear program--although it has been done, as Iraq has taught us.

In the early 1980s other types of proliferation increasingly became problems--chemical, biological, and missile. It was natural for policy-makers to respond with a tool that had shown success in the nuclear area, export controls. The Missile Technology Control Regime (MTCR) and the Australia Group were born. The latter covers chemical exports, and is currently exploring biological controls as well. The record of both regimes is not very good, and can be expected to improve only marginally with increased efforts to enforce them. Let me explain.

Since the inception of the MTCR in 1987, the following nations have acquired missiles:

- Saudi Arabia bought CSS-2 missiles from China;
- Iraq upgraded Scud missiles to travel in excess of 500 km;
- North Korea reverse-engineered and upgraded Scuds;
- India test-fired its Agni missile to a range exceeding 600 km;
- Israel put a satellite into orbit;
- South Africa test-fired a ballistic missile, possibly with Israeli help;
- Iran test-fired a Scud C, supplied by North Korea, to a distance of 500 km; and,
- Syria has imported Scud Cs from North Korea.

Even Argentina's Condor program--which many credit the MTCR with having stopped--continues. In May, 1991, Argentine Defense Minister Antonio Erman Gonzalez announced that "all installations and equipment" for the Condor-2 missile program will be moved from the Air Force to the National Commission on Space Investigation. This will allow the Condor, which could be used for weapons purposes eventually, to proceed under the cover of peaceful space exploration.

One could argue that the above examples of proliferation represent the culmination of missile programs that were underway before the MTCR had the chance to take effect. While that is true in some of the cases, careful examination of the missile proliferation phenomenon reveals that the MTCR perhaps slows some programs, but doesn't deter or stem them. The' first reason for this is that the MTCR does not address the demand-side; it does nothing to affect the motivations of countries to proliferate. In fact, the MTCR is seen by many in the Third World as a regime of the "haves" against the "have nots." They ask: Why should only a handful of industrialized states have missiles while we cannot?

There are a number of other problems that, taken together, militate against success of missile export controls:

- Missile technology and equipment are largely dual-use (i.e., it is not just for missiles, but is applicable to other products as well);
- Equipment is often small and relatively inexpensive, making its transfer difficult to observe;
- Offensive missile programs can be hidden under the guise of civilian programs (aircraft development in the case of cruise missiles; peaceful space in the case of ballistic);
- Much of the technology can be produced indigenously by many countries (In this regard, it is important to refrain from mirror-imaging, as many countries may not require that their missiles meet the same standards and requirements as western governments would.);
- Eastern European nations and former Soviet republics may market their capabilities and components; and,
- As controls are tightened by members of supplier regimes, it becomes more profitable for new suppliers from the Third World to enter the market.

With regard to the last point, it is important to note that a number of possible new suppliers are on the horizon, including: Syria, Egypt, Brazil, Taiwan, South Korea, South Africa, Israel, and Iran. Furthermore, these countries can undertake "piecemeal proliferation"–as China may be – selling missile components or know-how for financial or political profit.

The missile proliferation problem is made even more bleak by the fact that countries are likely to focus increasingly on cruise missiles instead of ballistic. This option will be attractive, in part, because of the relative simplicity of cruise missile technology and the widespread availability of aircraft and jet engine components. Many countries are able to manufacture jet aircraft; Brazil, for example, exports them.

In summary, we cannot expect the same success with missile export controls that we have come to rely upon with nuclear export controls. The technology is easier, less observable, more dual-use, and available from a wide range of supplier countries.

Chemical proliferation is even less susceptible to export controls. Chemical weapons can be made by any country that wants them; the technology is no obstacle. The technology for producing chemical agents is WW I-vintage, is described openly in literature, and is easily understood by chemists and chemical engineers knowledgeable in industrial chemical production. The equipment used is the same as that required for production of common commercial chemicals.

Any country with a standard chemical-industrial base can manufacture chemicals controlled by the Australia Group. Countries without such a base could do so if they were dedicated; it is a matter of will and resource allocation, not availability of technology. Chemical export controls will not prevent proliferants from obtaining weapons-relevant compounds; the controls will only prevent countries from acquiring those compounds from Australia Group members.

Misconceptions about the efficacy of chemical export controls are fed by two erroneous assumptions: first, that chemical weapons programs are necessarily observable and therefore can be targeted by suppliers, and second, that less-developed countries will be reliant on imports. On the first point, chemical weapons facilities need not have any distinguishing features or activities. A clandestine CW facility may be completely undetectable by national technical means. Only intelligence from human sources may reveal its existence. On the second point, the case of Iraq is instructive.

Iraq purchased its primary chemical weapons production facility from a German firm. Some people may conclude from this that Iraq would therefore be unable to construct a chemical agent production plant by itself. This is inaccurate. Iraq bought the German plant because it was available, easier, and better. Iraq is capable of making chemical agents entirely on its own, although standards and quality would not be as high. For example, Iraq might not be able to make glass-lined reactor vessels. Instead, it might use unlined vessels, replacing them every few months as they corroded. While this is neither efficient nor economical, it is workable.

Biological-weapons-related export controls are the least effective of all. The requisite equipment is widely available and fairly easy to manufacture. To place export controls on it would not only be ineffective, but considered by many to be immoral. The equipment is the same as that used for medical research. Placing controls on export of cultures will slow the acquisition of

"common" BW viruses, bacteria, and biological-origin toxins only by a matter of weeks or a few months, as the organisms are available in nature.

In addition to the question of effectiveness, we should ask whether there are any costs that make export controls a less attractive nonproliferation tool. I would like to mention four.

First, there is a cost to the effectiveness of nonproliferation policy itself. This may sound contradictory, but it isn't. Export controls divert resources of governments--particularly in countries that do not have bureaucracies and budgets the size of Americas--that might be more profitably devoted to other nonproliferation efforts. Additionally, there is the "complacency factor." Policymakers may relax once export controls are tightened, mistakenly believing that they will take care of the problem and that other more complex policy alternatives are unnecessary.

The second cost is economic. U.S. businesses will be hurt to an incalculable extent as foreign suppliers rush to make sales of dual-use controlled items. Suppliers will include not only Third World nations, but also former Warsaw Pact and Soviet successor states. Even European companies ostensibly restrained by supplier regimes are likely to compete after the formation of a unified market in Europe in January 1993. It will be easy for companies to circumvent controls by exporting through neighboring countries whose abilities and will to watch their borders are less.

A third cost of export controls is loss of intelligence and influence. By not exporting widely available dual-use items, the United States loses its access to and knowledge about programs in recipient countries. When the United States is the supplier country, it can require end-use assurances and establish the right to inspect that use. Being a supplier also gives potential economic and political leverage over the recipient.

A fourth cost is perceptual, pitting the United States against less developed countries on one hand, and against its allies on the other. By emphasizing export controls, the United States sets up a "haves" versus "have-nots" situation that engenders resentment among less developed countries, particularly those who have no intent to develop weapons of mass destruction or delivery systems. These countries are less likely to cooperate in nonproliferation efforts of any sort. Similarly, European willingness to cooperate with Washington is hurt when the United States unilaterally takes steps to make export controls more stringent. Europeans are particularly bothered by the extraterritoriality of U.S. laws.

There is also a folly of which we should be wary. That is, we should avoid bringing into the export control regimes the very nations that are the targets of those regimes. Consider this example. Country A is known to be pursuing ballistic missile development under the guise of a peaceful space program. It has appealed to America and others to allow it to import relevant technology, promising that it will abide by the restrictions of the MTCR. When Country A does so, everyone relaxes, thinking that an MTCR adherent is not itself a proliferation risk!

From the foregoing, several conclusions and recommendations can be drawn:

1. Export controls are workable and should be maintained when the items controlled are non-dual-use.
2. Dual-use items should be controlled only if they are not widely available, not easily produced by proliferants, and there is consensus among suppliers regarding their control.
3. More emphasis should be placed on demand-side nonproliferation policies, as export controls will not prevent a determined proliferator.

Policy Alternatives

Export controls should be part of a package of nonproliferation policy efforts, not the central focus. Other options, admittedly, are not as easy and do not lend themselves to legislation.

Make Defenses Available

Countries will pursue weapons acquisition if they perceive it in their national security interests to do so. If adequate defensive equipment and systems are not available from advanced countries, they will turn either to suppliers of less sophisticated weaponry or to indigenous production. Either is detrimental to nonproliferation in the long-run. The solution is twofold:

- Undertake diplomatic initiatives (which may be arduous, as in the case of the Middle East) to resolve conflicts which inspire proliferation; and,

- Provide a sense of security either through defense agreements or reasonable, balanced transfers of arms.

In the future, it may be possible, for example, to deter missile proliferation by providing countries with missile defenses such as those being developed under the U.S. Global Protection Against Limited Strikes (GPALS) program. It may also be feasible to provide leverage for countries to participate in arms limitations or reductions in return for defenses.

Initiate Arms Control

With the end of the Cold War, there is a general perception that the need for arms controls is passed. Yet, arms control has a tremendous role to play in the proliferation arena. Applying selected arms control achievements of the United States and former Soviet Union is a good place to start. For example, it would be highly constructive to internationalize the Intermediate Nuclear Forces Treaty. Iraq and other countries should not be able to fire at U.S. forces missiles of a type banned from U.S. arsenals by the INF Treaty. Internationalizing INF would be beneficial in reducing proliferants' inventories, restricting their missile testing programs, avoiding the "haves" versus "have nots" argument, and bypassing lengthy negotiations.

Engage in Dialog

One reason that proliferation occurs is that public opposition to it is either muted or nonexistent. To get publics and elites in the Third World thinking about the threats proliferation poses to them, they need information and perspective. Members of the U.S. Congress should get together with members of key representative bodies abroad, not to harangue, but to discuss. U.S. military leaders should communicate with foreign counterparts on the security costs of possessing weapons of mass destruction and the financial-technical difficulties associated with keeping them safe and secure. The United States should also encourage others to undertake similar public diplomacy efforts--particularly Sweden, a country which had and gave up a nuclear weapons program.

Diversify U.S. Policy Responsibility

The bureaucratic trend is toward consolidation of responsibility for proliferation issues. This is certainly appropriate in the case of intelligence-gathering and analysis, as it is in the actual application of export controls and customs work. With foreign policy implementation, however, consolidation can be harmful. It would likely lead to formation within the U.S. foreign policy community of a "czardom," which can only be as good as the czar chosen to run it. Given the complexity of technical and political information that must be mastered on each type of proliferation and the variety of countries involved, it would be likely that a consolidated policy body would give insufficient attention to small fires as it tries to address large blazes.

Rather than banking on finding the right set of people to deal with proliferation of all types in all countries, it would be useful to diversify responsibility for nonproliferation. This would mean that individuals responsible for dealing on a host of political-economic issues with a given Country also include proliferation issues in their portfolio.

Summary

In summary, U.S. nonproliferation regimes have not been very successful, in part, because of unwarranted reliance on export controls. Due to the ease and availability of technology, making such controls more stringent or organizing them under one "roof" will make little difference. It might even be harmful. Instead, export controls should be pared down to make them easier to consistently and rationally apply, and to reduce some of the associated costs. More resources should be spent on demand-side policies such as arms control and security enhancement.

SENATOR BINGAMAN. Thank you very much.

Mr. Potter, why don't you go ahead.

STATEMENT OF WILLIAM POTTER, DIRECTOR, CENTER FOR RUSSIAN AND EURASIAN STUDIES; AND PROFESSOR, MONTEREY INSTITUTE OF INTERNATIONAL STUDIES

MR. POTTER. Thank you. Thank you, Mr. Chairman.

I'm very pleased to have this opportunity to testify before the Subcommittee on the proliferation dangers in the Middle East posed by the unstable economic and political situation in the former Soviet Union.

I'll confine my remarks to the nuclear dimension of the problem and then note a number of specific steps that the United States should take to reduce the proliferation danger.

A more detailed analysis is provided in my written statement.

One of the most serious proliferation threats in the Commonwealth of Independent States involves the demise of the former State's monopoly in the nuclear export sector, and the rise of private nuclear entrepreneurs.

The International Chetek Corporation—about which I've written extensively—is only the best known of a number of private and quasi-private firms which have recently scrambled to sign up nuclear scientists and to seek overseas markets for nuclear-related goods and services with little government oversight.

The most serious proliferation problems posed by privatization in the nuclear sector include, first, the readiness of the nearly bankrupt defense industry to sell off its assets to anyone for the right price.

Here, I might note Yeltsin's decree earlier this month prohibiting privatization of Russia's two nuclear laboratories.

Another problem concerns the absence in Russia and in the other CIS states of any domestic legislation regulating nuclear exports.

Yet another problem is the incestuous relationship which exists between some private firms in the nuclear export business and state ministries which are supposed to regulate exports.

Also of concern is the fact that although Russia is soon likely to have in place a fairly comprehensive set of export controls, and is likely to endorse the dual-use list recently drafted by the nuclear suppliers group, other CIS states now appear unwilling to adopt uniform export controls or to coordinate their export control policies with Russia.

The second proliferation threat that I wish to identify pertains to the so-called brain drain or the nuclear mercenary issue. With respect to this threat, I think it's important, first of all, to distinguish between the potential threat, which I believe is very real, and the problem to date which is most likely insignificant, although I would argue greater than zero.

Because of time constraints, I'll just make several points regarding the brain-drain issue.

First of all, there is no evidence that most commonwealth scientists are anything but loyal. I think they have no desire to leave their homeland.

Second, one should not discount the influence of religious and ideological incentives, as well as economic motives, for the transfer of sensitive nuclear know-how, especially in predominantly Muslim central Asian states with historical, religious and ethnic ties to countries in the Middle East known to covet nuclear weapons.

Contrary to the conventional wisdom, I believe that not all of the sensitive nuclear facilities and not all key scientists in the nuclear sector are located in Russia proper. Heavy water production, beryllium and zirconium metallurgy—hot cells for handling plutonium—and even uranium-enrichment facilities, are located in and may still be operational in Central Asia.

This is relevant regarding U.S. efforts to stem the nuclear brain drain, which to date appear limited to Russia.

My greatest concern regarding the exodus of nuclear scientists is that would-be proliferants may follow the Iraqi tactic of setting up-front companies, or holding companies, in Western Europe in order to recruit unsuspecting Commonwealth scientists who would never consider similar offers to move to Iran, Iraq or Libya.

Although not specifically related to the proliferation threat in the Middle East, I think it's important to note that probably the greatest nuclear danger in the Commonwealth today relates to nuclear safety or, rather, the lack thereof, and the likelihood of a repeat of Chernobyl at a civilian and/or military reactor site.

In conclusion, let me note a few measures that the United States should undertake to deal with the different nuclear threats that I've identified.

The first point I'd like to make is to emphasize that proliferation problems are not—and I want to emphasize, are not—a high priority for commonwealth decisionmakers.

As a consequence, in matters relating to commonwealth nonproliferation issues, the United States must take the lead.

What specifically should we do?

First, I think it's important to persuade, in the strongest possible terms, non-Russian Commonwealth members to adopt uniform export controls on the new Russian nuclear export control model and to coordinate their export control policies.

Consistent with this objective, I believe the United States should encourage Belarus, Kazakhstan and Ukraine to send representatives as observers to the March 1992, nuclear suppliers group meeting which will be held in Warsaw.

This is critical not only for learning purposes, but also because it will prompt the governments in Belarus, Kazakhstan and Ukraine to designate people in their governments to be responsible for nuclear export controls.

At the present time, no one has that responsibility. There are no nonproliferation departments in place.

The absence of independent nonproliferation specialists in the commonwealth is perhaps the greatest obstacle to progress on the nuclear nonproliferation front. This lack of expertise is most acute outside of Russia.

It's important, therefore, for the United States Government to work closely with private organizations to train Ukrainian, Belarussian and Kazak specialists in nuclear export controls and nonproliferation. Special attention, I would

argue, needs to be given to engaging journalists in the field who can serve as knowledgeable whistle-blowers should commonwealth policy go astray.

A project to build communities of nonproliferation specialists in the former Soviet Union is now underway at my institute.

SENATOR BINGAMAN. Would you say that again? I missed that last point.

MR. POTTER. The last point pertains to the need to train whistle-blowers in the form of journalists who can, in fact, knowledgeably comment on policy, if in fact it departs from a prudent course of action.

I then mentioned that a project designed to build communities of nonproliferation specialists is now underway at my institute.

The last point I wish to make pertains less to the specific proliferation problem in the former Soviet Union and more to the general state of the nonproliferation field.

Despite the growing salience of the issue of nonproliferation for analysts as well as policymakers, very little progress has been made in forecasting proliferation developments.

Recent revelations about the Iraqi and North Korean nuclear programs are only the most glaring examples of this deficiency.

Although it's obviously easier to note the problem than to correct it, I believe the shortcoming stems in large part from the nonproliferation community's failure to treat the issue in comparative perspective; that is, to examine the similarities as well as the differences in the patterns of nuclear industry and weapons development across states and over time.

It would be very helpful, for example, to exploit existing data bases on nuclear capabilities and trade to chart systematically import, indigenous production and export activity involving dozens of specific uranium enrichment technologies and equipment for many past and potential proliferators.

A systematic comparison of Pakistan's and Iraq's efforts in the area of gas centrifuge development, for example, might suggest a pattern of activity for select nuclear-related items, which could be a telltale sign when noted elsewhere of intent to acquire other sensitive equipment and technology.

What is needed is the application of a comparative framework to a large number of past and potential proliferators in order to facilitate the task of pattern recognition and forecasting. Effort to develop at least a primitive forecasting capability is now underway at the Monterey Institute of International Studies and exploits the computer database that we have assembled, which tracks international nuclear-related commerce.

A much more substantial commitment to this activity, however, must be made by the U.S. Government if we are to avoid future unpleasant proliferation surprises and to gain sufficient early warning to implement effective preventive measures.

Thank you.

[The prepared statement of Mr. Potter follows:]

PREPARED STATEMENT OF WILLIAM POTTER

I am very pleased to have this opportunity to testify before the Subcommittee on Technology and National Security of the Joint Economic Committee. The Subcommittee has asked me to address the proliferation dangers in the Middle East posed by the unstable economic and political situation in the former Soviet Union. I also was asked to identify specific measures that might be taken to enhance the U.S. capability to monitor proliferation developments and to strengthen the international nonproliferation regime. I will limit my prepared remarks to the nuclear dimension of the problem.

The Danger Of Nuclear Efforts

Although strong political, economic, and security disincentives are likely to weigh against decisions to pursue independent nuclear forces in est of the embers of the Commonwealth of Independent States (CIS), the same cannot be said about the balance of factors affecting decisions to export nuclear technology and know-how. Indeed, nuclear goods and services, along with other defense-related product, are apt to be among the fern commodities from the former Soviet Union that are in demand abroad and are able to generate hard currency. Particularly worrisome from the standpoint of nuclear nonproliferation is the danger that private firms may be able to acquire and sell some types of sensitive nuclear material, equipment, and technology with few effective effort controls. Already, there are reports that private organizations have purchased zirconium, beryllium, and graphite at discount prices from state manufacturing firms and marketed them abroad. Although the evidence is inconclusive, there are reports of similar uncontrolled exports of low-enriched uranium and plutonium.

Until recently there was little possibility of such nuclear exports from the Soviet Union due to the absence of private trading companies and the operation of stringent national controls over the production and sale of all commodities. The export monopoly in the nuclear sector belonged to Techsnabexport, a state-controlled company associated with the Ministry of Atomic Power and Industry (and previously with the Ministry of Foreign Trade). Since all nuclear export activities were carried out by a single governmental subsidiary under contracts and conditions approved by the Ministry of Atomic Power and Industry and the Ministry of Foreign Affairs, it was relatively easy to enforce stringent export controls. These regulations were in the form of decrees issued by the USSR Council of Ministers.

Today, however, the nuclear export control machinery in Russia and the other Commonwealth members is in a state of flux, governmental oversight responsibilities and jurisdiction are diffused, and economic difficulties place great demands on exports for hard currency. The virtual bankruptcy of the entire defense sector has created an environment in which private entrepreneurs scramble to sign up weapons designers and to market nuclear goods and services abroad. Indeed, the problem of illegal sales of state assets has become so acute that a decree was issued this month by the Russian government explicitly forbidding privatization of the country's two nuclear weapons laboratories.

The risk of CIS-origin nuclear exports reaching aspiring proliferants in the Middle East and elsewhere is increased by the failure of the Soviet Union and its successor states to enact laws governing nuclear exports. The primary government document which regulated nuclear exports in the former Soviet Union was the "Enactment of the Export of Nuclear Materials, Technologies, Installations, Special Non-Nuclear Materials and Services," issued as a decree by the Soviet Council of Ministers on January 13, 1982 and subsequently amended on June 3, 1985, December 26, 1985, November 2, 1985, and July 7, 1990. Although a comprehensive national nuclear energy law to supplement the executive decree was drafted in early 1990, it stalled in the former Supreme Soviet and was never enacted.

The Russian Government in January 1992 drafted a decree on export control procedures which should go a long way toward correcting the export situation in Russia. It is currently being reviewed by the government's lawyers and should soon go into effect: Its impact, however, will be diluted if other Commonwealth states fail to adopt controls modeled after the Russian version. Russian officials fear that this in fact will be the case. They also are pessimistic about the prospects of coordinating export controls among CIS members who, for domestic political reasons, are increasingly wary of undertaking joint CIS activities. The effectiveness of future CIS-wide

export controls also are likely to be severely limited by the paucity of export control expertise outside of Russia.

The relaxation of state controls over private enterprise, coupled with the absence of national legislation governing nuclear exports and the readiness of defense industries to sell off their assets has lead to the emergence of private nuclear entrepreneurs in the CIS. Illustrative of the new Commonwealth phenomenon is the International CHETEK Corporation.

Founded in December 1990, CHETEK markets "peaceful nuclear explosive" (PNE) services as an ostensibly ecologically desirable means to dispose of highly toxic chemical and industrial waste, decommissioned nuclear reactors, and retired nuclear and chemical weapons. A demonstration PNE test, the corporation claims, is scheduled for June 1992 at the Arctic nuclear weapons testing ground on Novaya Zemlya. For as little as $300 a kilo, CHETEK promises to dispose of anyone's toxic waste and guarantees "total safety." CHETEK officials still hope to carry out their demonstration test despite the one-year nuclear test moratorium pledged by former Soviet President Mikhail Gorbachev, which they claim does not apply to PNEs.

In case one is not inclined to ship one's toxic waste to Russia, CHETEK is prepared to provide the PNE service overseas. According to a letter to the deputy secretary general of the United Nations from CHETEK boosters in the Ministry of Atomic Power and Industry (MAPI), the controlled application of PNE technology might fruitfully be deployed in Iraq to dispose of that country's chemical weapons. CHETEK even promoted the use of PNEs as a means to extinguish Kuwait's oil fires.

CHETEK is able to make these claims because of the unusual and disturbing relationship it has developed with MAPI and its successor ministry, the Ministry of Atomic Energy of Russia (MINATOM). In return for the infusion of cash and company stock (valued at 12,000 rubles a share), MAPI has given CHETEK exclusive rights to its thermonuclear PNEs and access to its nuclear test sites, while Arzamas-16 has provided nuclear weapon designers and technical personnel. At Least 10 nuclear weapons designers are reported to be on the CHETEK payroll. According to Viktor Mikhailov, a major promoter of CHETEK and the new head of MINATOM, the deal was the only way to preserve the nuclear weapon facilities' research programs and to avoid the layoff or large numbers of scientists.

It remains unclear whether or not CHETEK has actually sold any nuclear goods or services abroad. What is clear is the potential for export control abuse in an environment in which a cash-starved national ministry that is supposed to regulate nuclear exports is financially dependent upon an export-oriented private company with access to sensitive nuclear material.

The Danger or Nuclear Mercenaries

Companies like CHETEK may be able to absorb some of the nuclear scientists who will lose their jobs as a consequence of the end of the Cold War and the inability of the Soviet defense establishment to convert promptly to production of needed civilian goods. Other disgruntled and unemployed nuclear weapon scientists, however, may find their way into the international black market.

Government officials in Moscow with responsibility for export controls acknowledge the potential nuclear mercenary problem, as do senior U.S. intelligence analysts. Russian nuclear industry officials confirm several cases in which nuclear scientists from the former Soviet Union have received foreign offers for their services. There are also numerous media reports, difficult to substantiate, which suggest that Libya, Iraq, India, Pakistan, and Brazil are actively pursuing Russian nuclear scientists with some limited success. In addition, there is evidence that a substantial number of nuclear scientists from the former Soviet Union emigrated to Israel this past year.

One must be careful to distinguish between the potential mercenary threat, which is real, and the problem to date which is probably insignificant although greater than zero. The potential problem arises principally from the large size of the Soviet nuclear weapons program, its geographical dispersal, and the increasing level of dissatisfaction on the part of CIS nuclear scientists.

Literally tens, if not hundred of thousands, of scientists and technicians with experience in the design and manufacture of nuclear weapons and related technology have been produced by the Soviet military program. Reportedly, 100,000 scientists, engineers, and officials have nuclear security clearances equivalent to the Department of Energy Q Clearance in the United States. Three to five thousand of these individuals are directly involved in plutonium production and

uranium enrichment activities and another two thousand may have detailed knowledge of nuclear weapons design. Today they are scattered throughout the republics which formerly constituted the USSR.

There is no evidence that most of these individuals are anything but loyal citizens. Their dedication, however, will be severely tested in an environment or job insecurity, food and housing shortages, plummeting prestige, and political turmoil. There also are indications, manifest in new union activity at the nuclear weapons laboratories and in private communications with Western scientists, that a growing number or Russian nuclear scientists distrust their lab and MINAOM bosses and believe they will use Western assistance to line their own pocketbooks rather than improve the average scientist's lot.

Worker dissatisfaction in the nuclear complex is also apparent in greatly increased job turnover figures, rising at least ten-fold between 1990 and 1991 to a level of 20-30 percent. This substantial migration of the nuclear work force, much of it reportedly to the private sector, also has the effect of complicating efforts to monitor nuclear scientists and raises doubts about lab spokesmen claims that no employees have sold their Services abroad.

One should not discount the influence of religious and ideological incentives as well as economic motives for the transfer of sensitive nuclear know-how. Major facilities for heavy water production, uranium mining and milling, beryllium and zirconium metallurgy, and nuclear testing grounds are located in the predominantly Muslim Central Asian states with historical, religious, and ethnic ties to countries in the Middle East that are known to covet nuclear weapons. In addition, uranium enrichment facilities reportedly have previously functioned in the former Soviet republics of Uzbekistan and Kyrgystan and may still be operational. Large numbers of both military and civilian nuclear power advisers from the former Soviet Union already have ties with some of the Middle Eastern states (e.g., Iraq, Libya, and Syria) as well as other potential proliferators (e.g., Cuba, India, and North Korea) as a consequence of prior nuclear assistance programs.

Notwithstanding the possible operation of ethnic, religious, and/or economic incentives to sell technical know-how abroad, it is unlikely that many nuclear scientists will choose to leave their homeland for uncertain futures in the Middle East, (the notable exception being Jewish émigrés to Israel). A more worrisome proliferation scenario however, could involve efforts by would-be proliferants to recruit Russian nuclear scientists via "holding" or front companies in western Europe, along the lines used effectively by Iraq to acquire equipment and technology for its nuclear weapons program. Job offers by such "European" firms would probably be enticing for many Russian scientists and would present very difficult monitoring tasks for U.S. and Russian intelligence.

MEASURES TO REDUCE THE AFOREMENTIONED THREATS

U.S. Must Take The Lead

Serious proliferation threats are posed by the disintegration of the Soviet Union and the creation of new independent states possessing nuclear weapons and/or sensitive nuclear material, technology, equipment, and know-how. The nation-building process in the new Commonwealth states, however, also presents nonproliferation opportunities for the United States and the international community. In order for these opportunities to be realized, it is imperative to recognize that proliferation problems are not a top priority for CIS policymakers. As a consequence, in matters relating to CIS nonproliferation issues, the United States must take the lead.

Encourage Quick Accession To The Npt

The United States and other western nations must encourage the new Commonwealth states to accede quickly to the NPT and to put in place its international safeguard provisions. Regrettably, most Western nations have not been prepared to make accession to the NPT a precondition for diplomatic recognition. At a minimum, it should be a major factor on key decisions such as economic assistance.

Provide Assistance On Export Controls

It is important that the new Commonwealth states implement appropriate nuclear export control procedures quickly. Russian President Boris Yeltsin's late January announcement that Russian was preparing to require full-scope safeguards on all nuclear exports and readying domestic legislation regulating dual-use exports is welcome, but remains to be translated into enforced legal structures. Implementing export controls may require executive decrees, special parliamentary hearings, and the enactment of formal legislation. Regardless of the form, the export controls should be as uniform as possible across the states, and should be coordinated at the Commonwealth level. The United States needs to persuade the non-Russian Commonwealth members of the urgency of this action.

It is also important for the United States and other established nuclear suppliers to engage the potential nuclear suppliers in the CIS in both international and bilateral nuclear export control consultations. Meetings, such as those of the Nuclear Suppliers Group, are a source or useful technical information and also provide a means for policy coordination. The United States, therefore, should strongly encourage Belarus, Ukraine and Kazakhstan to send representatives as observers to the next meeting of the Nuclear Suppliers Group scheduled for the end of March.

Enhance Intelligence Coordination

Given the risks of proliferation posed by the chaos in the former Soviet Union and the efforts by a number of nearby states to acquire nuclear weapons, increased efforts to monitor the status in the CIS of nuclear weapons, facilities, exports, and experts are needed. CIA Director Robert Gates reportedly has ordered a series of special National Intelligence Estimates covering such subjects. These efforts should be continued and coordinated with other countries–including the states of the new Commonwealth themselves.

Train Whistle-Blowers

The absence of a community (or communities of independent nonproliferation specialists in the CIS is perhaps the greatest obstacle to progress on the nuclear nonproliferation front. This lack of expertise is most acute outside of Russia, where few individuals have any prior training or experience in international security affairs, much less export controls or nonproliferation policy.

It is important, therefore, to expose new people to nonproliferation issues and to train cadres of specialists in Ukraine, Kazakhstan, and Belarus in the area of nuclear export controls and nonproliferation. Special attention should be given to engaging journalists in the field, in order to have in place knowledgeable nuclear nonproliferation "whistle blowers" who are familiar with sensitive nuclear technology and material, and the international security risks posed by their export. Efforts to link new nonproliferation recruits to the international network of nonproliferation specialists and to facilitate their participation in international research and training activities must also be intensified. A project designed to build communities of nonproliferation specialists in the former Soviet Union is now underway at the Monterey Institute of International Studies.

Improve Monitoring and Forecasting Capabilities

Despite the growing salience of the issue of nonproliferation for analysts and policymakers, little progress has been made in forecasting proliferation developments. Recent revelations about the Iraqi and North Korean nuclear programs are only the most glaring examples of this deficiency.

Although it is easier to note the problem than to correct it, I believe the shortcoming stems in large measure from the nonproliferation community's failure to treat the issue in comparative perspective, i. e., to examine the similarities as well as differences in the patterns of nuclear industry and weapons development across states and over time. It would be very helpful, for example, to exploit existing databases on nuclear capabilities and trade to chart systematically import, indigenous production, and export activity involving dozens of specific uranium enrichment technologies and equipment for many past and potential proliferators. A systematic comparison of Pakistan's and Iraq's efforts in the area of gas centrifuge development, for example might suggest a pattern of activity for select nuclear-related items which could be a tell-tale sign when noted elsewhere of intent to acquire other sensitive equipment and technology. What is needed is the application of a comparative to a large framework to a large number of past and potential proliferators in order to facilitate the task of pattern recognition and forecasting.

An effort to develop a primitive forecasting capability is underway at the Monterey Institute of International Studies and exploits the computer database we have assembled which tracks international nuclear-related commerce. A much more substantial commitment to this kind of activity, however, must be made by the U.S. government if we are to avoid future unpleasant proliferation surprises and to gain sufficient early warning to implement effective preventive measures.

SENATOR BINGAMAN. Thank you very much.

Ms. Nolan, why don't you go right ahead. Thank you for being here.

STATEMENT OF JANNE E. NOLAN, SENIOR FELLOW, BROOKINGS INSTITUTION

Ms. NOLAN. Thank you, Mr. Chairman. It's a pleasure to be here.

I will start with commending you for the years that I've watched your leadership on these issues, issues that are often very complex, arcane and usually not the highest priority of the Executive Branch or of other parts of the Congress.

As always, your attention to these challenges has helped tremendously- .

I will try to summarize my statement in five points.

The major focus of the statement looking at the case of Iraq as a prism through which to examine ways in which the proliferation challenge has changed and what we really will have to contend with in coming up with more comprehensive and more effective policies for the future.

One of the problems with proliferation overall is that it has tended to be seen as a regulatory function or driven by what is often seen as messianic ventures to save the Third World from itself. It has not been seen as an integral element to our force planning, our defense planning, our foreign policy, our intelligence priorities, and so forth.

Obviously, the world has changed. But the world was changing for several decades while we were preoccupied with what was deemed more important—the potential for U.S.-Soviet conflict.

Many of the Third World weapon development programs that we are looking at today are the fruits of decades of investment. It was not impossible to get information about these programs in prior years. What's proven difficult is to get attention to what this means, how significant it is, and what to do about it.

I think the Iraqi case and the implementation of Resolution 687, which has still proven to be difficult despite the severe compromise of Iraq's sovereignty officially. Iraq highlights several operational lessons that may pertain to the future.

The first is the very changed character of the international technology market. Iraq's arsenal is really a tribute to the capabilities which a country with wealth and determination can achieve through a system of international technology suppliers who often owe no allegiance to governments and are not subject to international law.

This system of industrial mercenaries, if you will, are now emerging from additional numbers of states. These suppliers operate through front companies—usually in Western Europe—and have come to compete with, if not almost replace, government-sponsored technical assistance for the production of weapons.

These suppliers, in turn, typically are linked together, so that if you open a channel for one proscribed technology—let's say missiles—it's probably likely that you will also gain access to chemical, nuclear and other proscribed technologies.

Renegade suppliers operate much like drug traffickers and gun-runners, where the in business is money, not the product. They're not very discriminating about either the technologies or the clients.

Second is the ascendance of commercial and dual-use technologies, useful for weapon development, which is far more available in this international system.

The bottom line here is that Iraq demonstrates very clearly that the real indicator of a state's military potential is its access to international commerce. And that poses a number of problems, which I'll come back to.

Third, again, focusing on Iraq, was this a failure of intelligence or was it more a failure of political will?

I think intelligence was inadequate not just about Iraqi capabilities, but about Iraqi intent, which was based on an understanding about the domestic conditions in that country. This highlights that you can't just track capabilities, even if you're doing so adequately. You have to understand domestic conditions and imperatives even in countries that you may have a profound adversarial relationship, such as North Korea.

Iraq is a demonstration of the tremendous cost of a laissez-faire policy towards arms and technology transfers, where even with better intelligence, I find it uncertain that the Administration would have acted with greater resolve. It was repeatedly urged to do so by the Congress in the face of Iraqi use of chemical weapons, in the face of its obvious acquisition of chemical technologies, and even nuclear components, and major investments in its ballistic missile development infrastructure.

Efforts by the Congress to impose sanctions on Iraq for acquiring these technologies were repeatedly rebuffed. Unfortunately, the underlying attitude that nonproliferation is a very distant problem persists even after the lessons of Iraq.

Right now, the Administration has exhibited a less-than-adequate response in the face of incontrovertible evidence of violations going on in Pakistan and in China. These are two very key proliferators, whose continued activities continue in the face of no penalties, or minimal penalties. The Administration has reversed the congressional mandate not to provide weapons or weapons technology to Pakistan, which severely undercuts the entire credibility of this arrangement.

It's not a surprise that North Korea would persist in its export programs of missiles and perhaps nuclear technology, that it might look at the cases of Pakistan and China and conclude that the penalties for violations are little to nothing.

Fourth, there's been a lot of discussion about looking to military solutions to combating nonproliferation. I think it's important to understand that while one would reserve military options as one of several instruments which could be used to punish violators, it is fundamentally naive to believe that this is likely to be an applicable solution to the long-term challenges of global proliferation. The notion that the United States and other large powers can manage the threat of proliferation by periodically taking out installations in countries that they don't like at that moment is simply not politically or militarily practical.

One reason, as we saw in Iraq, is that the core of its a state's potential is embedded in its defense industrial capability, its overall industrial capability, its human capital, and its ability to participate in international commerce.

As Kathleen Bailey pointed out, the Condor Missile Program in Argentina may well have gone back into the civilian sector, to be held in abeyance until such a time as the next government, or the current government, deems it appropriate to go back into the business of missile proliferation.

The point is that programs like these are not targets that are very readily manageable by military means. You have a hard time targeting supplier networks or scientists.

I think another cost of thinking too much about military options is that it is one reason that nonproliferation objectives have rarely elicited the support or attention that they deserved, propelled in part by the belief that the United States could always maintain a technological superiority of a kind that no Third World country, even those that we and the Soviets were helping to arm, would ever pose a serious military threat to us.

As such, it was always seen as better to invest attention in military options or technological solutions, rather than the grubby, difficult, intractable, and often really boring efforts to control this challenge through diplomatic means, through export controls, and so forth.

I think the notion that there's a technological fix or a military fix to nonproliferation can fuel this kind of attitude that can lead to great passivity. This attitude also can lead to the subsuming of nonproliferation objectives to what are deemed "overriding" foreign policy objectives, as we're seeing in China and Pakistan. And it can fuel proliferation, perhaps inadvertently, by linking the need for continuous U.S. innovations to sustain its own military superiority to laxity about proliferation. The cost of this kind of innovation has to be defrayed partly by exports, which can help fuel undesirable forms of technology exports.

This linkage has become far clearer in the current recessionary time when it is argued that in order to have the next generation of Stealth, we need to export our surplus; our surplus is now top of the line F-15s or F-16s fighter aircraft.

The perceived weakness of current nonproliferation regimes is getting a lot of discussion and attention. The only point I'd like to make about this is that no one quarrels with the notion that the IAEA, the MTCR, and other such regimes for chemical and biological weapons have not been proven sufficient to control the demand for these weapons.

The record of these regimes is mixed, and there are some successes and some notable failures. But I think they all have one thing in common—they lack clout, money, authority and international support. And in our case, even national support.

We are in arrears in our payments to the IAEA and to other parts of the United Nations, including the special commission. The stories are legion about what has happened to the special commission, including having its vice chairman having to rent his own car with his own credit card in Baghdad in order to conduct an inspection because of lack of commission resources.

The point is that you can't blame the IAEA for its inability to control the demand for weapons, especially when it has inadequate resources and authority.

Ultimately, this goes back to the fact that police actions of this kind will not be sufficient to stop proliferation. Even if we were to get this together, the demand side really does have to be addressed, as Kathleen Bailey pointed out.

Any regime is only as good as its members and their willingness to comply. We have before us now a series of examples of noncompliance, and again, a continued indifference, almost resistance, to some of the more stringent nonproliferation measures that the Congress has put forward. I now understand that the export administration reauthorization, for example, is once more facing controversy about its provisions, with no alternatives being proposed by the Administration.

A point on conventional technologies.

I think that it's laudable that the Administration has focused on weapons of mass destruction. I don't think, however, that this is a long-term solution to regional and international security problems if the policy of controlling weapons of mass destruction is accompanied by a permissive approach to conventional arms and dual-use technology sales.

These technologies are linked, as was pointed out earlier, and it's simply indefensible to think that you can control missiles, payload and production capabilities for nuclear and chemical weapons, but not be concerned with potentially far more effective weapon systems like advanced aircraft.

The reason that we are reluctant, and the Perm Five has proven their desperate reluctance to take on comprehensive technology transfer controls, is because of the centrality of this instrument to their foreign policies and, even more importantly, to commercial viability of their own defense industrial bases.

We are, in fact, codependents in the proliferation game, where it has been deemed vital to continue to promote exports of very important technologies in order to defray the cost of our own defense and to maintain what Defense Secretary Cheney even says is a contribution to the overall health of our economy.

This is not a new problem. Obviously, it goes back decades. But in the current international environment, this policy is not a long-term strategy. There is a point at which advanced conventional munitions can approximate the capabilities of weapons of mass destruction, superseding these in some cases.

A point on defensive technologies. Again, this is a quest for a technological fix to nonproliferation. However much we need one or would like to have one, I think a note of caution is important about promoting exports as defensive technologies. The technologies for defensive missiles are essentially the same as for ballistic missiles. Anti-tactical ballistic missiles have many of the same operational characteristics as ballistic missiles, as well.

We have several examples of countries' reverse engineering the so-called defensive technologies into their offensive programs.

It's common sense that an ATBM has rocket components, guidance, and provides expertise for the operation and production of missile forces, and that

you need very strong end-use controls and great selectivity about to whom one sells this capability.

In terms of a technology-control regime, which could have some teeth and could actually address some of the issues that Kathleen Bailey raised, one key element will be the support of industry.

Typically, we've undertaken ventures to control technologies in ways that are antagonistic to industry. This has been especially the case with conventional arms sales.

In the future, the support from industry will be vital not only to the design of credible export control measures, but in monitoring the disposition of technology once it is sold.

There is a very active industry involvement in the chemical weapons negotiations, for example. I think this is an interesting example that might pertain to the aerospace sector in the future. That is, those who are the most highly motivated to export legitimately may be the very constituency that you need to tap into to help design control measures that they in turn would want to enforce. They stand to lose the most if Draconian measures, which are unrealistic, interfere with their legitimate business. They also may be the only source of sufficient technological support and data support to track technologies as supplier sources become more complicated.

Finally, three recommendations.

I think the most important thing in any export policy is the political leadership that is given to it. It is still the case that despite the rhetoric, nonproliferation is largely the preoccupation of mid- to low-level bureaucrats who have their influence diluted by more senior officials who tend to be more concerned with so-called overriding foreign policy objectives.

No amount of dedication from civil servants can combat the inattention or even opposition of cabinet secretaries or the President. Without presidential support made clear on a routine basis, these people cannot do their jobs, whatever the policy is in principle.

At the international level, I think a multinational secretariat that looks at nonproliferation problems in an integrated way is absolutely vital. And I disagree on this point with Kathleen Bailey that you can do this in a disaggregated manner or that you necessarily overwhelm the system with integration.

As we saw in Iraq, chemical weapons are important if they have associated delivery capabilities that can get them to important targets. You can't look at weapon production programs as discrete without being so fragmented that you have insufficient knowledge of the overall activities or incentives of a country.

In turn, moving away from relying only on export controls is a very important idea, looking at devising credible, creative and effective dual-use controls on the uses of technology—shifting the emphasis from controls on supply to controls on application.

Let me conclude there. Thank you.

[The prepared statement of Ms. Nolan follows:]

PREPARED STATEMENT OF JANNE E. NOLAN

It is a pleasure to appear before this Subcommittee to discuss ways to improve international weapons nonproliferation policies for the Middle East. I commend the Chairman for his many years of consistent and effective leadership on these issues, which until recently were not given much priority in other parts of the Congress or the Executive Branch.

My prepared statement presents several observations about the current proliferation challenge, and a few recommendations about how the international community might reorganize to enhance the effectiveness of current non-proliferation regimes. I will briefly summarize these points, but ask that the full text be included in the record.

We are currently witnessing a non-proliferation initiative of unprecedented scope and ambition: the effort by the United Nations to demilitarize a major military power in the Persian Gulf. The perceived success or failure of UN Security Council Resolution 687, which mandates the dismantlement and destruction of the Iraq's nuclear, chemical, biological, and ballistic missile arsenals and production facilities, will affect the credibility of non-proliferation efforts for years to come.

Despite its status as a dispossessed power whose sovereignty is now officially subject to international authority, the Iraqi government continues to thwart UN inspections, camouflage sensitive installations, and refuse to comply with UN disclosure requirements. In terms of sheer chutzpah, Iraqi intransigence may be unprecedented. A number of operational lessons being learned from 687, however, may prove instructive for other countries, especially the difficulties of locating, identifying, and destroying weapon installations and weapons-production capabilities either by military means or with intrusive on-side inspections.

The Iraqi case highlights several key challenges confronting the non-proliferation regime:

- The changed character of the international technology market: Iraq's arsenal is a tribute to the capabilities which a determined state with sufficient wealth can acquire in today's international arms market. In just eight years, Iraq developed an ambitious infrastructure of development and production facilities for all categories of weapons of mass destruction – with little to no interference from outside powers or international law.

  Iraq demonstrates that the most vital indicator of a state's military potential is its access to international commerce. Supply networks for many military and dual-use technologies have increasingly become multinational commercial enterprises, sometimes operating out of several different countries under the guise of front companies. Industrial mercenaries – cadres of engineers, technicians, and arms brokers who owe allegiance to no government or international law – are beginning to replace government-sponsored technical assistance as a source of technology and expertise.

  The pattern of supply to Iraq also suggests that a country which acquires access to one kind of proscribed technology – missiles, for example – will find supply lines opening for nuclear, chemical, or biological weapon technologies. Just as drug trafficking, gun running and other forms of illicit trade networks tend to operate in tandem, illegal arms suppliers are likely to traffic any kind of weapon technologies they can acquire, and are not discriminating about what they sell to whom as long as the contracts yield high returns for minimal risk.

- A massive failure of intelligence or of political will? As UN officials continue to reveal previously unknown facts about Iraq's military industrial base, it is logical to conclude that the US and other Western governments were not adequately informed about Iraq's military capabilities before hand. Even if the US and its allies had had better intelligence, however, it is not apparent that they were interested in or capable of taking effective action to stop the flow of technology into Iraq prior to its invasion of Kuwait.

  Iraq cold not provide a more vivid demonstration of the costs of a laissez-faire policy towards arms and technology transfers. Concerns about proliferation traditionally have been subordinate to other foreign policy priorities. Members of Congress and private analysts tried for several years to warn the Bush Administration about Iraq's military production programs, from the Sa-ad 16 missile complex to its massive investment in chemical weapons. They also urged the administration to impose penalties against

suppliers to Iraq, including West Germany, France, and Britain. But these initiatives were routinely rebuffed.

Its rhetoric notwithstanding, the administration continues to look the other way in cases of obvious proliferation when other diplomatic objectives are deemed more pressing. Despite the experience of Iraq, this attitude apparently still prevails with respect to Pakistan and China. Absent a more serious commitment to non-proliferation objectives by senior officials, no regime can success or endure.

- Limits of military solutions: With few exceptions, the international community privately applauded Israel for its successful destruction of the Iraqi Osirak nuclear installation in 1982. But one unintended consequence of the Israeli air strike was to drive Iraqi military programs into clandestine, underground installations which could resist destruction. As was discovered in Desert Storm, it is not easy to destroy a military infrastructure of this kind, however superior one's forces.

  Military options will remain one of several instruments which could be used to punish those who violate treaties, but they are not likely to be a long-term or widely applicable solution. It is naive to think that the US and other large powers can manage the long-term threat of proliferation by periodically destroying facilities they deem illegitimate. The core of Iraq's and other Third World countries' military power is entrenched in their growing industrial capability, human capital, and ability to attract suppliers. These are not targets which are readily susceptible to destruction by military means.

  Non-proliferation has never elicited the support or priority it deserves in part because of mistaken belief that the Third World would never pose a military threat which the US could not readily counter with superior forces and technology. The notion of a permanent international hierarchy based on continuous technological innovation by the Est, however, may not prove sufficient to keep pace with the rapid diffusion of military capabilities globally. This quest for technological panaceas may actually contribute to political passivity in other areas of non-proliferation, reinforcing the notion that diplomacy is less urgent than development of new technologies to counter emerging threats. This pertains to the current debate about strategic defenses, for example.

  As a political message, the notion of coercive arms control is obviously not consonant with a policy seeking to promote global military restraint. The idea that a few states have the right to eliminate military capabilities in states of which they disapprove will not help Western credibility in its quest for international acceptance of non-proliferation objectives.

- Weaknesses of current regimes: One reason that there is far more discussion today about military options for non-proliferation is the perceived failure of the various arms control regimes. The Nuclear Non-Proliferation Treaty, the Chemical and Biological Conventions, and the Missile Technology Regime are all accurately depicted as agreement which lack early warning and enforcement authority and cannot stop determined proliferators.

  The record of these regimes is mixed, with some successes and some notable failures. It is obvious, however, that these regimes have one thing in common: they all lack clout, money, authority, and international support. Given the circumscribed powers and limited resources granted the IAEA by the international community, for example, blaming this institution for failing to stop proliferation is patently absurd. Even if it had adequate resources and the authority to conduct challenge inspections in suspect countries, the IAEA still cannot not be held accountable for the high demand for weapons which is threatening to undercut the non-proliferation regime.

  Currently, China's continued sales of its M-series ballistic missiles to the Middle East and its nuclear exports to Algeria and elsewhere threaten to undercut the entire credibility of the proliferation regime. Despite repeated assurances to the contrary, China continues to engage in flagrant violations of international norms, openly scoffing at US and international concerns. China's behavior suggests it knows that the penalties for its actions will be minor or non-existent, a point reinforced last week when the Bush administration lifted trade sanctions before China had demonstrated any good faith effort to abide by the pledges it has made.

Non-proliferation regimes will be effective only when they have the benefit of strong political leadership, a coherent institutional structure, and when they become part of a broader regime which includes incentives for consumer states to cooperate.

- Legitimizing control regimes: In 1946, David Lillienthal anticipated some of the problems which would arise from the effort to control nuclear weapons through a policing effort which lacked universal support:

  "...there is no prospect of security against atomic warfare in a system of international agreements to outlaw such weapons controlled only by a system which relies on inspection and similar police-like methods. The reasons are...not merely technical but primarily the inseparable political, social, and organizational problems involved in enforcing agreements between nations, each free to develop atomic energy but only pledged not to use bombs."

  To be credible, the nonproliferation regime must be adhered to by a larger group of nations, eliciting the support of developing as well as developed states. The preoccupation with supplier controls has tended to infuse all of the nonproliferation arrangements with the perception of political discrimination against the Third World, leading to chronic international controversies about the basic legitimacy of these agreements. It should be anticipated that any new arrangements among suppliers would be vociferously opposed by Third World countries, who would perceive it as a onerous form of supplier cartel. No restraint regime can be envisioned which is not sensitive to recipient countries' political and security concerns.

  Any control regime is only as good as the number and degree of compliance of its adherents. Recent Israeli and Chinese pledges to abide by the MTCR and perhaps the NPT aside, these are still supplier-centric regimes which have been rejected as illegitimate by key proliferating states in the Third World, including India, Pakistan, and North Korea. Developing states may be more likely to cooperate with a regime which is under the auspices of an international body in which they can participate as equals. Regional sub-groupings which could meet regularly with the UN Security Council to discuss security and proliferation concerns, for example, could be a first step towards designing a more equitable and thus enduring arrangements.

- Integrating the control regimes: Resolution 687 found that Iraq's arsenal inevitably required an integrated approach to inspections and dismantlement of nuclear, chemical, biological, and missile programs. The experience of Iraq highlights the need for and enhanced effectiveness of combined verification and inspection efforts for all suspect activities. In the future, integrating the various control regimes under one umbrella organization, explicitly acknowledging the interrelationships among various weapons of mass destruction programs, is the only way to redress the problems which the currently fragmented approaches have posed in the past.

  The need for a more integrated approach to weapon capabilities is already being recognized within existing supplier groups. At their most recent meeting in November 1991, MTCR members agreed to consider extending the scope of the regime to missiles capable of delivering the scope of the regime to missiles capable of delivering chemical and certain conventional weapons, for example. Similarly, the Australia Group is considering tightening its export controls to cover biological as well chemical weapons materials.

  Whether such an integrated regime should begin as a comprehensive multinational effort, engaging both suppliers and recipients at the outset, or more properly would start with the major advanced countries will depend on prevailing political conditions and the scope of restraint proposals envisioned. A multinational regime could be pursued on several tracks, however, consisting of supplier negotiations and separate recipient negotiations, with regional restraint regimes being considered over time.

- Need for controls on conventional technologies: Enforcing controls on weapons of mass destruction is in of itself a significant objective. But controlling these systems alone will not significantly reduce the overall risk to international security if other advanced weapons are allowed to proliferate freely. Exemplified by the Bush administration's $19 billion arms

package for countries in the Middle East and Persian Gulf since Iraq invaded Kuwait, the view that conventional arms sales are somehow not problematic for security seems to prevail in all of the industrial countries.

Part of the enduring challenge of controlling the spread of advanced weapons stems from the absence of any agreed, workable definitions of the security threats posed by conventional military technology. While it is largely undisputed that the development of nuclear capabilities around the world should be controlled, and that the use of chemical and biological weapons even on the battlefield is despicable, the relative legitimacy of conventional arms sales remains a matter of great controversy.

Conventional weapons have always been seen as the benign alternative to nuclear proliferation and remain the most common instrument of dissuasion in efforts to stop new states from going the nuclear or chemical route. Other than the Missile Technology Control Regime, there is no formal international apparatus to guide transfers of conventional technologies to the Third World. Despite their pertinence for the delivery of nuclear and chemical weapons, governments have resisted placing controls on transfers of combat aircraft and non-ballistic missiles, and on most dual-use technologies going to the Third World.

The reluctance of the permanent five members of the Security Council to seek serious controls on the arms trade reflects the centrality of this instrument to these nations. It is not intellectually defensible to argue that missiles should be controlled while advanced aircraft and associated subsystems are actively promoted, but this is current policy.

The spread of weapons production technology continues without benefit of formal international views, let alone coordination. Most troubling are leading edge technologies, from fiber optics to microcircuitry to advanced software, which increasingly are produced by commercial enterprises not directly accountable to government control.

- Monitoring defensive technology: In 1989, Saddam Hussein claimed that Iraq had developed an anti-tactical ballistic missile, a claim which was dismissed as hyperbole. Given the scope of Iraq's missile programs, however, it is not out of the question that a missile interception capability was in the research or development phase.

  The sale of ostensibly defensive systems and technology to states which have or are trying to develop missile production capabilities could indirectly contribute to proliferation by granting these countries access to technologies and expertise useful for developing offensive systems. These range from guidance and rocket components to testing equipment and expertise about the phenomenology of missiles. Knowledge gained about the operation of anti-missile systems is inherently applicable to other kinds of missile activities.

  South Korea, for example, succeeded in modifying the U.S. Nike-Hercules air defense system into a ballistic missile, a program which it pursued despite strenuous US objections. As has been recognized in the US-Israeli Arrow ATBM program, the risk of misapplication of defensive technology is sufficiently high to warrant careful controls of such programs. End-use controls will have to be stringently applied in future decisions allowing the transfer of advanced defenses.

  Other defensive equipment which could be diverted to offensive uses include man-portable air defense systems. The Stinger air defense system, for example, is credited with helping the Afghani resistance to defeat Soviet occupation forces, but its diffusion throughout the Third World raises concerns that such systems could be misused by terrorists or subnational groups. The difficulties of controlling the destination of such systems are a compelling reason to be more selective about their transfer in the future.

- The support of industry: No export control regime can survive if it is perceived as excessively penalizing to private enterprise. However lofty the goals, any policy which appears unduly injurious to economic competitiveness cannot endure. Devising criteria for dual-use exports to the Third world, in particular, will require difficult choices about

desirable and undesirable types of proliferation, disaggregating technologies which are useful for development activities from their military applications.

Eliciting the support of industry will be a vital element of the success of a military technology export regime. This, in turn, will require that controls be multinationally supported and highly selective. Industry can play a key role in helping to develop the lists of items and technologies that are to be controlled, to compile information about sources of technology, and to design and implement workable security safeguards which do not interfere with desirable private enterprise.

The role of the American Chemical Manufacturers Association in the chemical weapon convention negotiations in Geneva may be an apt model for other areas of technology transfers. The chemical industry has been serving as a vital source of expertise for negotiators, identifying technologies and inputs to include in the treaty, and helping to devise practical verification schemes. It is obviously in their self-interest to influence the scope of agreed controls, and to be perceived as supportive of a CW ban.

Similarly, computer and civilian space companies could stand to lose the most from any draconian measures imposed as a result of heightened international concerns about the diversion of these kinds of technologies for missile development or other offensive military uses. It would be in the immediate self-interest of such companies to assist governments to retrain missile programs in problematic states by helping to identify relevant technological inputs needed for missile development and in devising safeguards which can discourage the adaptation of civilian equipment for military programs. As the main source of expertise about technology and usually the party most involved in actual transactions, industry may be the only means by which governments can identify and track potentially problematic technologies and enforce restrictions. By the same token, the perception that industry is not cooperating in non-proliferation efforts could impose penalties on private enterprise which exceeds the revenues foregone by declining certain foreign contracts.

CONCLUSIONS AND RECOMMENDATIONS

– If nonproliferation is designated a serious priority, its management will require far more political leadership, accompanied by increases in funding commensurate with any new requirements imposed on existing regimes. At the national level, nonproliferation is still the preoccupation of a relatively limited number of mid- to low-level bureaucrats whose influence is diluted by more senior officials who often are more concerned about "overriding" foreign or defense policy objectives. Unless nonproliferation objectives receive the sustained support of the President and his relevant cabinet secretaries, no amount of dedication by civil servants will prove equal to the forces which are indifferent or even opposed to military restraint initiatives.

– At the international level, a multinational secretariat with the mandate to monitor all forms of proliferation in an integrated manner would help redress the problems posed by the fragmentation of existing regimes and bolster their effectiveness. Such a mechanism could help formalize and streamline control guidelines, establish procedures for routine consultations among participants, and anticipate new technological and political challenges. While it could build on the operational experiences of such institutions as COCOM and the UN Special Commission, this new organization has to avoid being seen as a supplier cartel. A supplier arrangement which attempts to minimize or avoid consultation with Third World countries would likely prove not only to be antagonistic, but self-defeating.

– Supplier restrictions still have a critical role to play in identifying and targeting the technologies whose proliferation would be seen as inimical to global security. Some vital inputs for ballistic missile development, for example, especially advanced guidance needed for high accuracy – the Achilles heel of most Third World missiles – remain in the hands of just a few suppliers. Future proliferation of such advanced components therefore depends in large measure on policies devised by industrial countries guiding technological cooperation with new missile producers. Given current trends, however, the pace of international technical diffusion may eventually render controls on supply ineffectual for all but the most advanced products.

– Monitoring dual-use and commercial technologies will be particularly challenging, requiring complicated judgments about what technologies should be controlled which also ensure that the regime is selective enough that it can be enforced. For technologies that are commercial in

origin but have dual or multiple uses – from biotechnologies to advanced communications to space systems – nonproliferation efforts increasingly will have to shift away from an exclusive focus on supply controls and towards monitoring the application of technologies. A system of credible end-use assurances, backed up by agreements to permit intrusive verification such as challenge inspections and strict disclosure requirements and accompanied by strict penalties for violations may already be necessary just to sustain existing agreements.

– The effectiveness of such a regime will require a higher level and better coordination of international intelligence resources. Improved intelligence capabilities could help a restraint regime by shifting the emphasis of policies towards prevention of proliferation, rather than the more demanding process of inflicting punishment after the fact. Multinational cooperation even in prosaic areas as customs enforcement, automated data collection, and other mechanisms to monitor exports can improve the prospects for an effective weapons restraint regime.

–As commercial technologies become more and more important in the production of advanced weapons, government will need to elicit the support of industry to help in the conception of realistic restraint policies, similar to the assistance provided by U.S. chemical industries to the negotiations for a ban on chemical weapons. Without cooperation from industry, technology controls could prove impossible to implement and enforce. The international trading systems should formalize common norms and be self-policing where possible. One model may be the international banking system, which relies so heavily on common codes of conduct to operate effectively that it is usually quick to identify and isolate renegades.

– Agencies with responsibilities for international debt management and other concessionary transactions should be brought into the policy process to identify ways to link financial incentives to desirable military restraints. At a minimum, the policies of the international lending agencies, such as the World Bank and the International Monetary Fund should take into account the effect of military investment in their assessments of countries' eligibility for credits and loans, including the nature and relative burden of weapon development and production programs.

– Even if a more robust arrangement to control weapons of mass destruction could be achieved, an exclusive focus on nuclear, chemical, biological and missile technologies may not be sufficient to significantly redress regional security problems. An effort to control some conventional weapon technologies could begin now the discussions among the major suppliers about the types of military capabilities which a global regime would want to discourage – a subject which to date has eluded consensus. The initial focus of such discussions could be on weapon systems which are not central to any major power's foreign policy and which are widely considered as destabilizing – for example, weapons easily diverted to terrorists, such as man-portable air defense systems; anti-satellite technologies which have been the subject of international attention for their indiscriminate effects and which have marginal military utility, such as incendiary and fragmentation weapons.

– This could begin a list of types of weapons whose transfer would be banned globally or which would require prior consultation before a transfer took place. Restraints could range from outright prohibitions on particular classes of items, to the elicitation of strict assurances for end-use, to mechanisms for prior consultation among suppliers prior to transfer of particular systems or inputs. Outright prohibitions would only apply to equipment which is uniquely suited for proscribed military operations and has not already disseminated widely.

– Advanced conventional weapons may have already proliferated fairly widely, but it is not too create a new organization which could devise ways to contain the spread of new, potentially even more dangerous technologies, including anti-satellite systems, advanced biological weapons, and precision strike munitions with deadly accuracies.

SENATOR BINGAMAN. Thank you very much.

We have a lot of different issues weaving through this set of testimony. Let me just pose a general question to anybody who wants to respond to it.

I strikes me that our mindset has historically been that to control the proliferation of technology in any of these areas, you are controlling some physical entity much more than you're controlling the movement or activities of trained scientists and engineers.

And accordingly, we've organized ourselves to try and control export licenses, while the real transfer of technology, which is most significant here, is the transfer of the know-how, which is needed to develop these weapons of mass destruction, or whatever types of weapons we're talking about.

If there's some truth to that general notion, then I guess my other concern is that this so-called brain drain that is occurring from the Soviet Union—I'm not aware that we have a policy as to what to do about that—whether there are actions our government should take to restrict or to assist each of the former Soviet republics to keep their scientists gainfully employed there.

Following the Second World War, I read a long time ago about some of the very aggressive efforts that we made to bring German scientists to this country. Werner von Braun and some of these folks came here because of conscious decisions that our government made to bring them here.

I don't know of any similar policy, or any decision not to have a similar policy, that's in place at the present time, and I'm concerned that unless we have some policy with regard to the individuals who are capable of developing this technology, all of the rest of this is beside the point.

That's my thought. Mr. Potter, do you have any thoughts on any of this?

MR. POTTER. Yes. Thank you for the opportunity to respond.

It's a complex problem, and I'm not sure there are any quick fixes to the threats that are posed.

I think there are, however, a number of steps that could usefully be taken. I think the first point, which really has to be the basis for all of our subsequent action, is the recognition that the problem stems more than anything, in the case of the former Soviet Union, from the tremendous economic difficulties that the commonwealth members face. Their scientists are no less loyal than Western scientists. They're not looking to leave their homeland, but will be sorely tested unless the economic situation improves.

I think there are some steps that can be of assistance prior to the final resolution of the economic problem, however.

First of all, I think it would be useful if the Commonwealth members, as well as other states internationally, were to put in place so-called citizen participation laws which provide penalties if citizens participate in the nuclear weapons programs of other countries.

The United States is one of the few states to have that kind of legislation in place. I think that's one thing that has to be done.

Second, I think there's the opportunity to cooperate now much more closely, intensively, with the intelligence agencies in the different commonwealth states so that one can better monitor the movements of these individuals, these scientists. I don't think you're going to be able to necessarily stem

the flow of scientists to other communities, to other states, but I think we can do a better job in monitoring.

In terms of an initial step, making use of monies which have already been provided by the U.S. Government, it seems to me that we have done some things. We're moving in the correct direction of providing some assistance to their scientists, but I think there's much more that can be done.

One area that I think is sorely in need of action is the correction of the environmental damage caused by nuclear weapons production.

I would like to see us devote some of the funds—the $400 million that has been authorized—to retrain scientists in Russia to clean up the damage caused by nuclear weapons production.

The reason why I think this is important, as well as the dismantling of nuclear weapons, is that there's a symmetry to the problem. It's a problem which confronts both the United States and the former Soviet Union.

I think, not only would work in this area be of tremendous help to the general living situation for people in the former Soviet Union, but any investment that we make would pay direct dividends to the United States as well. We'd be able to refine and develop new techniques which would then be applicable in our own situation.

So I would see this as a useful step that might be taken.

SENATOR BINGAMAN. Okay. Ms. Bailey?

Ms. BAILEY. Senator Bingaman, the problem is not just the Soviet scientists, it's scientists worldwide.

As all countries draw down their defense expenditures, there will be hordes of individuals who have capabilities to design missiles, helicopters, bombs of all types available. There may even be scientists from Los Alamos National Laboratory in New Mexico who will eventually be put out of business as the defense budgets decline.

Let me give you one example.

We know for a fact that a Brazilian scientist who used to be head of a missile program went to Iraq with a set of individuals from his country to assist Iraq before Desert Storm started in upgrading Scuds.

So we have the problem worldwide. It's not just Soviet, it's former Soviet.

The second point is that——

SENATOR BINGAMAN. I agree with you. The only point I'd make is that much of the problem with regard to nuclear capability is focused on the Soviet Union. There are a lot of scientists worldwide who have the ability to develop nuclear weapons, perhaps. But I would say that there's a substantial concentration of it in the Soviet Union, which might now be released on the world market in a way that was never a possibility before.

Ms. BAILEY. That's true. And that's why I brought up the issue of Los Alamos. I think there are other countries where relevant activities to nuclear weapons design and production of special nuclear materials is also a problem.

So we need to be attentive across-the-board. And it's also important to make sure that any monies that we do spend on assuring that Soviet scientists remain gainfully employed in their nuclear weapons industry are not being used simply to enable the former Soviet scientists to continue to make more

and better nuclear capability to threaten the West, a very important point to remember.

SENATOR BINGAMAN. Janne, or do either of you have a point to make on that? Otherwise, I'll ask another question.

I know we have at least a professed policy with regard to sales by our own country, sales of conventional weapons. We say we want to restrict it. It doesn't seem that there are any actions in place to do that, or any program in place to do that.

But with regard to sales by others of conventional weaponry, is there any kind of an explicit policy other than a vague wish that this kind of thing wouldn't go on?

When we met with folks in the Soviet Union this last week, it was made very clear to us that much of the loss of market that they were experiencing within their own economy for military weaponry would be made up by sales internationally.

We're not in a very good position, I guess, to object to that, since we seem to be the biggest arms merchant in the Middle East at the present time. Maybe, elsewhere.

Mr. Klare, your figure—was it $35 billion?—is it scheduled to be sold into the Middle East this year?

MR. KLARE. No. About two thirds of that.

SENATOR BINGAMAN. Okay.

MR. KLARE. That's the total for all countries. I haven't seen the classified list, but the published reports say that about two thirds of the expected sales would be to the Middle East.

SENATOR BINGAMAN. Is there any kind of policy that has any chance of being implemented, or that we are taking steps to try to implement, with regard to sales of conventional weapons, by either this country or other countries?

MR. KLARE. There are several approaches that have been talked about, but nothing is really in place.

There is the decision by the Permanent Five representatives in London on October 17 and 18 to adopt some guidelines. But they're not binding. They're not an agreement. They're just a draft statement of guidelines.

SENATOR BINGAMAN. But the ones that you just read to us seem so general. It's like grabbing a pillow. There's nothing there.

MR. KLARE. At this point, there really is nothing there. There was a follow-up meeting of the Perm Five this past month in Washington by some experts, and there's to be a plenary session that Undersecretary Reginald Bartholemnew will attend at the end of this month, where they're hopefully going to move a little bit further along these lines.

But it's very tentative and hasn't, as we've seen, had any impact on the behavior of either the United States or the other suppliers.

SENATOR BINGAMAN. Ms. Nolan, let me ask you about your suggestion for a multinational secretariat to be established to integrate the efforts of these various regimes. That's what I understood you to be recommending.

Could you elaborate on how that would work and what authority such a multi-national secretariat would have, and how this kind of a thing would get done?

Ms. NOLAN. At a minimum, taking the existing regimes and consolidating them to the extent that they are already overlapping is the first step. It's clear, for example, that nuclear supplier controls are increasingly moving into questions about what's controlled by the State Department's lists for munitions control. The missile technology regime right now is looking at lowering its payload and range criteria to more specifically include chemical and conventional missiles, as well as nuclear.

I think Iraq demonstrated that looking at these various activities as separate doesn't give you a clear idea of what kinds of net military capabilities it is that you would want to control.

On the conventional and dual-use technology side, I think that what such a secretariat could do could be as modest as to begin a multinational discussion about what it is we want to control. Clearly, we are not going to control everything, or even probably a fraction of the weapons trade. There simply isn't the consensus or political support, however, to have very ambitious controls on these technologies.

Nor would a huge regime be enforceable. What you need, as we found in COCOM, is higher fences around fewer goods in order to both maintain international support and to be able to track, police and enforce controls on those selective technologies.

A secretariat could operate under the auspices of the United Nations. It could build on existing institutions like COCOM, but would need the international legitimacy that would come from the United Nations, since COCOM was designed as a biopolar, Cold War mechanism.

In principle, what you would be looking at is a secretariat which meets on a routine basis to discuss proscribed technologies and their component parts and to anticipate technological change. It would also serve to provide a channel of communication between the major suppliers and recipients to involve them in some consultations about capabilities that are deemed to be fundamentally not in the international interest to see proliferate.

We grappled with this a little bit in the Carter Administration, as you know. The trouble then was that U.S.-Soviet relations were very strained. And there was no support, even domestically, for this initiative. But one of the things to come out of that experience was that it is very important to start with modest steps, to build a diplomatic infrastructure, perhaps just discussing weapons that are not central to any country's military doctrine.

You could start with what we used to call weapons of ill-repute. Aside from chemicals and biological weapons on the conventional side, you could start with controls on fragmentation weapons, cluster bombs, or anti-satellite capabilities that are not central elements of the weapons and could, perhaps, be banned on a global basis.

You could also start with very advanced technologies that are still in the hands of a few suppliers, which clearly would not be in the interest of anyone to see proliferate, including, especially anti-satellite technologies, biotechnologies that will make it much easier to develop biological weapons or

weapons that have been seen already to be subject to international opprobrium, like incendiary weapons and so forth.

The point of this is that we are currently lacking the mechanisms by which to put such lists together, to discuss them in a multinational context, to even think about them very clearly. We don't know what capabilities we really would want to control if we were to go into the dual-use and conventional weapons.

It's not a subject of great discussion, and it eludes consensus constantly. And the costs are less apparent for various reasons.

I think a secretariat could help a great deal in clarifying some of these issues, and, in turn, devising credible guidelines that could be credibly enforced.

SENATOR BINGAMAN. Mr. Potter, did you have a thought, or Mr. Klare, did you have a thought about this idea of an international secretariat, or whether such a thing is useful?

MR. KLARE. I wanted to mention two other initiatives that relate to your question.

One is that the United States, along with over 100 other countries, agreed in December to the formation of a U.N. arms trade register that's scheduled to begin this year. It's a voluntary, nondiscriminatory agreement that will give us some experience in international transparency in the arms trade.

It's not an arms control measure, but it could be the basis for a secretariat, because we'll have for the first time a U.N.-mandated registry of what's being traded internationally. It could give us a basis for that kind of secretariat.

So I certainly think the United States should support the U.N. effort.

One other thought is that the international lending agencies are paying much more attention to this question. I think they are a source of information about military spending in the Third World. And increasingly, there is the thought that development assistance and loans should not go to countries which divert a great deal of their national income to military production and arms imports. And that countries that agree to reduce their military spending should be favored when it comes to the distribution of development assistance.

I think that's another handle to this problem.

SENATOR BINGAMAN. Okay. Yes, Mr. Potter.

MR. POTTER. If I could add a point.

I concur with Janne and Michael that the idea of a secretariat is a good one. I guess my concern is that we not shift attention in the short-term from what I regard to be really the two most important issues. One is really making the Iraq test case come out right. I think that it's absolutely imperative that Iraq not be successful in evading the U.N. mandate.

I think there are other North Koreans who are watching what happens there, and I think that this has to be our first priority.

Of course, that is an issue involving both dollars and also the political commitment. I would hate to see an idea, which is a good one, somehow sidetrack us from this first immediate step.

The other, I would argue, immediate concern has to do with an agency that is already in place, which I think has greater potential than has been utilized to date, but also faces severe problems of a financial nature and also one involving political support, and that's the International Atomic Energy Agency.

So I would like to see us first solve those two immediate problems before we move on to set up another secretariat, although I would agree that the idea, in principle, is a good one.

SENATOR BINGAMAN. Okay. Let me ask one other question.

On May 29 of 1991, President Bush gave a speech at the Air Force Academy and he said:

> I am today proposing a Middle East arms control initiative. It features supplier guidelines on conventional arms exports, barriers to exports that contribute to weapons of mass destruction, a freeze now and later a ban on surface-to-surface missiles in the region, and a ban on production of nuclear weapons material.

Are we doing what we need to—is that being implemented adequately, in the opinion of any of you? It's only been about eight months, I guess, eight or nine months since this was announced.

But are the actions that need to be taken to see that this is carried through being taken?

Mr. Klare?

MR. KLARE. Let me start on that. I'm sure that our government witnesses will say that they're proceeding and making progress in those areas. But I'm dubious. The plan also called for restraints on conventional weapons, and we've seen the opposite of that from the Administration.

Since that speech last May, the United States has sold another $6 billion worth of conventional weapons to the Middle East, and, as we've indicated, another $20 billion or so are scheduled for this year. So that's kind of reverse progress.

The chemical weapons ban was to hinge on speedy adoption of the Chemical Weapons Convention in Geneva. We still haven't seen that come forward. I hope we'll hear good news about that from our government witnesses later. But I'm aware of no rapid progress in that area.

Some progress has perhaps been made in the missile area, but we have a long way to go, particularly with respect to China. And in the nuclear area, I don't see very much pressure being applied on Israel, which is the main nuclear power in the Middle East. If we're going to implement the nuclear part of that policy, it would call for efforts on Israel to cease its nuclear weapons production. And I'm not aware of any initiatives, at least publicly, to move in that direction.

SENATOR BINGAMAN. Do any of you wish to make a comment on that?

Ms. Nolan?

Ms. NOLAN. Thank you. I think I'd agree with Michael Klare in most of what he said.

I think there is a legitimate counter-argument that a freeze on missiles in the Middle East and some other components of that proposal require negotiations among the regional participants, and that the peace talks have taken precedence. Until you have a modicum of political accommodation in the

region, it's very hard to talk about technical measures like freezing missiles. I think there's a lot of interest in the region, surprisingly. Israel, in particular, has taken on the task of learning about these proposals.

Obviously, I think the United States could be doing a lot more. One of our best skills is bringing our technical and operational knowledge about these kinds of mechanisms to the regions for their consideration. Ultimately, however, it is up to them as to how to proceed.

Still, we could help them with such things as force balance measures that would be the basis of regional talks about controls on conventional as well as weapons of mass destruction.

If I could just take one more minute. It occurs to me that as far as the Congress is concerned, the underfunding of all of the existing nonproliferation mechanisms, and what is likely to be a very difficult battle for further funding of any more robust nonproliferation regimes, is perhaps the number one issue.

SENATOR BINGAMAN. You indicated before that we're behind in our payments to the IAEA. What is the amount that we're talking about here?

Ms. NOLAN. I'm going to have to ask Bill Potter that question.

MR. POTTER. I think the safeguards budget, I believe, is something around $60 million. I'm not positive precisely about how much we still owe.

SENATOR BINGAMAN. Ms. Bailey, do you have that?

Ms. BAILEY. It's my understanding that we are making our payments. It's just that we're on a different budget cycle, and so we do not pay at the same time as other nations pay. Therefore, it affects the exchange rate and therefore the amount of money they get, but the United States is not technically behind; whereas, Russia, for example, is.

SENATOR BINGAMAN. Okay.

Ms. NOLAN. I think the point is that $60 million is not even a blip on the screen of our defense budget, and it certainly will not be adequate for the IAEA to take on what it needs to take on, including the ability to conduct challenge inspections of suspect sites, much greater intelligence access, and basic equipment to conduct its work.

And as we have see in the Iraqi special commission, they've had to borrow airplanes and helicopters. The United Nations simply isn't up to this task financially.

I understand that domestic politics surrounding foreign aid are very difficult right now. But if we see nonproliferation as a military challenge, we should see it as a defense priority. Funding these restraint regimes would cost a tiny fraction of many of the related functions that are currently being conducting under the defense budget.

If the budget agreement does get changed, a nonproliferation fund that encourages other countries to join in such a fund, with the United States taking the lead, would be a very positive contribution.

SENATOR BINGAMAN. Thank you very much. I think it has been good testimony. We appreciate it. We will try and follow up on some of these suggestions.

Why don't we take about a four- or five-minute break and we will start with the second panel at that time.

[Recess.]

SENATOR BINGAMAN. Before I introduce this panel, let me just allude to two things.

We have a paper that we've released today on the issue of arms trade in the Middle East, put out by the Stockholm International Peace Research Institute, looking at 1991. The main points of that are covered in a release, which we also prepared, related to that.

We also want to put into the record a new study prepared by analysts at the Congressional Research Service. This study is entitled, "Current Issues in Nonproliferation Regimes Policy." It was written by Zachary Davis, Stephen Bowman and Robert Shewey.

We're very grateful for their efforts. In this study, the authors review recent experiences and practices with each of the nonproliferation regimes, and point to certain shortcomings and issues that are still unresolved.

For example, they show how exports from the United States of a wide range of dual-use items to Iraq that were not controlled for nuclear uses, and the reported intervention of the Reagan and Bush administrations with U.S. agencies to expedite loans and credits to Iraq worked at cross-purposes with the nuclear nonproliferation regime.

These incidents illustrate the tension that exists between nonproliferation policy, on the one hand, and other foreign policy objectives.

At least that's the points made by the authors.

The report also suggests that the Missile Technology Control Regime may need means of enforcement, organization, a staff, and standard practices for reviewing proposed exports.

[A study entitled "The Export of Major Conventional Weapons to the Middle East," and a report entitled "Current Issues in Non-Proliferation Regimes Policy" follow:]

The export of major conventional weapons to the Middle East

Prepared by HERBERT WULF,
GERD HAGMEYER-GAVERUS and PAOLO MIGGIANO
Stockholm International Peace Research Institute (SIPRI)[1]

I. The major exporters and importers

The global value of foreign deliveries of major conventional weapons in 1991 is estimated by SIPRI to have been $22 billion in 1990 US dollars. This figure—roughly 25 per cent less than the value recorded for 1990—continues the downward trend in the aggregate value of the arms trade after 1987. These statistics are trend indicators of the deliveries of major conventional weapons and not figures which measure what was actually paid for the arms supplied.[2]

Of this total of $22 billion of arms transferred in 1991 one-fifth was exported to countries in the Middle East. The declining global trend also applies to the Middle Eastern region. Weapon transfers to the region fell from $16 billion in 1987 to below $5 billion in 1991. (For details see the tables in the appendix.)

In 1991 the USA was the largest single exporter of major conventional weapons to the Middle East—almost two-thirds of all deliveries of major conventional weapons to the region originated in the USA. This dominance might be temporary; in the past Soviet weapon deliveries often exceeded those of the United States. The decline in Soviet arms exports and the continuation of US weapon deliveries at a high level account for US preeminence.

Sales of major conventional weapons to the region from the EC accounted for 15 per cent of the total in 1991. France and the UK were the two largest suppliers from the EC. Other major suppliers in 1991 were Yugoslavia, North Korea and China.

Three-quarters of all arms imports by the 15 Middle Eastern countries went to six countries during the period 1987–91: Saudi Arabia, Iraq, Egypt, Israel, Syria and Iran. This established pattern changed in 1990 as a result of the arms embargo against Iraq. In 1991 Israel was the largest importer in the region, followed by Saudi Arabia, Egypt and Kuwait. Most countries in the region have reduced their imports of major conventional weapons during the past five years. Exceptions to this pattern are Israel and Kuwait which increased their imports as a consequence of the Gulf War. The United Arab Emirates increased until 1989–90 and reduced in 1991 its arms imports.

[1] This study is based on Anthony, I., Courades-Allebeck, A., Miggiano, P., Sköns, E. and Wulf, H., 'The trade in major conventional weapons', SIPRI, *SIPRI Yearbook 1992: World Armaments and Disarmament* (Oxford University Press: Oxford, 1992), chapter 8, forthcoming.

[2] SIPRI arms trade data cover 5 categories of major conventional weapons: aircraft, armour and artillery, guidance and radar systems, missiles, and warships. (See below for the methodology used).

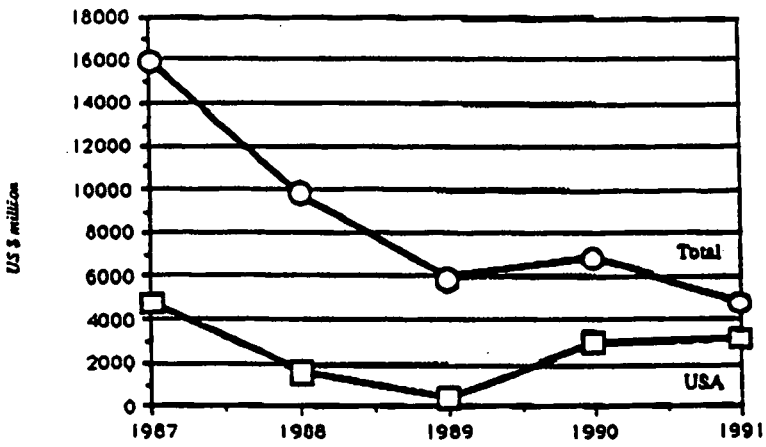

Figure 1. Exports of major conventional weapons to the Middle East, total and US, 1987–91

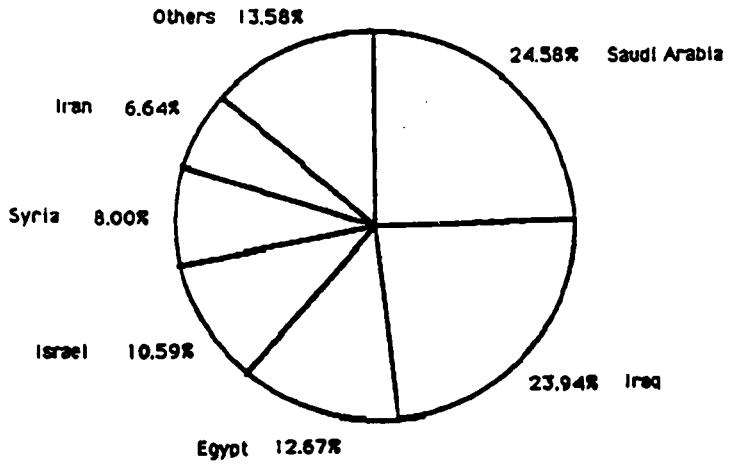

Figure 2. Shares of imports of major conventional weapons by Middle Eastern importers, 1987–91

II. The impact of the 1991 Gulf War

While it is too soon to predict the long-term impact of the Persian Gulf War, it had not led to a massive increase in the delivery of arms to the region by the end of 1991. In fact, the value of major weapons delivered to the Middle East declined by more than 30 per cent in 1991.

Iraq's use of its imported arsenal of major conventional weapons to invade Kuwait brought the question of arms export regulation and initiatives to restrict the flow of arms to the centre of the conventional arms control debate. While there is political momentum behind arms export control, economic pressures are working in the opposite direction. Arms are not only exported to the Middle East to serve foreign policy interests and to assist allies. After the defeat of the Iraqi military machinery and the initiation of a peace dialogue arms sales are no longer a top foreign policy priority. Economic interests are the primary motive now. Reduced military expenditure and the prospect of even greater reductions in government spending threaten many arms-producing companies with a severe crisis. Companies whose products are no longer in demand for domestic armed forces have pushed to increase export sales.

Some arms transfers took place in the period between 2 August 1990 and the start of the allied air offensive against Iraq on 17 January 1991. Most widely publicized was the upgrading of air defences in Israel and Saudi Arabia through the rapid deployment of Patriot surface-to-air missile batteries. Deliveries of major conventional weapons to Middle Eastern countries in 1991 are noted in the registers in the appendix, while table 1 summarizes new agreements identified with Middle Eastern countries in 1991.

In addition to these deals, in which major items of equipment are relatively easily identifiable, there have also been significant agreements to provide military construction and services. For example, US companies will reconstruct air bases in Kuwait in a deal valued at $350 million, and develop the air defences of Egypt and Saudi Arabia. However, the massive US–Saudi arms package anticipated before the defeat of Iraq has not yet come about.

Whether there is a major increase in arms flow into the Middle East in the near term depends on four factors: (*a*) the development of the regional security system; (*b*) the nature of commitments to regional countries from extra-regional powers, in particular the United States; (*c*) the outcome of the regional peace process initiated in 1991 in Madrid; and (*d*) the outcome of discussions about arms transfer control among major arms suppliers.

Table 1. Conventional weapons ordered by Middle Eastern countries in 1991

Buyer	Seller	Designation	Number ordered	Description	Number delivered
Bahrain	USA	AH-64 Apache	8	Helicopter	–
Egypt	Czechoslovakia	L-59	48	Jet trainer	–
	USA	F-16C	46	Fighter	–
		AGM-65D	40	Air-to-surface missile	–
		AGM-65G	40	Air-to-surface missile	–
Iran	Czechoslovakia	T-55	300	Main battle tank	–
Israel	FR Germany	BRDM-2	50	Scout car	50
		Tpz-1	8	APC	8
		Dolphin	2	Submarine	–
	Netherlands	Patriot battery	1	SAM system	1
		MIM-104 Patriot	32	Surface-to-air missile	32
	USA	F-15A Eagle	10	Fighter	–
		AIM-9M	300	Air-to-air missile	–
		Patriot battery	1	SAM system	–
		MIM-104 Patriot	64	Surface-to-air missile	–
Oman	USA	M-60-A3	–	Main battle tank	27
		V-300 Commando	119	APC	–
Qatar	South Africa	G-5 155 mm	12	Towed howitzer	12
Saudi Arabia	USA	AIM-7M Sparrow	770	Air-to-air missile	–
		M-113-A2	207	APC	–
		M-548	50	APC	–
		M-578	43	Recovery vehicle	–
		Patriot Battery	14	SAM system	–
		MIM-104 PAC-2	758	Surface-to-air missile	–
		HMMWV	2 300	Light vehicle	–
Syria	Czechoslovakia	T-72	300	Main battle tank	–
	North Korea	Scud-C launcher	–	SSM launcher	20
		Scud-C	–	SSM	100
United Arab Emirates	USA	AH-64 Apache	20	Helicopter	–
		AGM-114A	620	Air-to-surface missile	–

Note: New agreements in 1991 with Turkey are excluded from the SIPRI definition of the Middle East. For arms transfer contracts initiated before 1991, see register appended.
Source: SIPRI arms trade data base; *Arms Sales Monitor* (various issues) prepared by Lora Lumpe for the Federation of American Sciences.

III. Appendix

1. Tables

Table A.1. Exports of major conventional weapons to the Middle East 1987–91

The countries are ranked according to 1987–91 aggregate exports. Figures are in US $m., at constant (1990) prices.

		1987	1988	1989	1990	1991	1987–91
1.	USA	4 721	1 602	347	2 861	3 033	12 563
2.	USSR	5 348	3 259	1 602	1 213	107	11 529
3.	France	1 539	1 069	1 422	1 097	426	5 554
4.	UK	695	763	1 587	907	174	4 126
5.	China	2 023	1 521	102	127	77	3 850
6.	Brazil	419	367	264	163	0	1 213
7.	Italy	324	261	9	42	0	636
8.	Egypt	228	264	68	27	0	587
9.	Yugoslavia	0	0	0	60	512	572
10.	Germany, FR	108	109	67	199	23	506
11.	Korea, North	99	114	0	0	267	480
12.	Czechoslovakia	107	107	125	21	0	359
13.	Spain	113	103	3	0	0	219
14.	Iraq	0	153	26	0	0	179
15.	Romania	0	0	106	61	0	167
16.	South Africa	48	48	0	0	35	130
17.	Netherlands	0	42	0	8	63	114
18.	German DR	0	0	94	0	0	94
19.	Switzerland	59	21	2	0	0	82
20.	Singapore	42	0	5	0	0	47
21.	Libya	27	0	0	18	0	45
22.	Syria	0	10	9	0	0	19
23.	Canada	0	11	0	0	0	11
24.	Israel	11	0	0	0	0	11
25.	Belgium	0	7	0	0	0	7
26.	Pakistan	0	0	1	2	3	6
27.	Iran	0	1	0	0	0	1
28.	Afghanistan	1	0	0	0	0	1
Total		**15 910**	**9 833**	**5 838**	**6 807**	**4721**	**43 108**

Source: SIPRI data base

Table A.2. Imports of major conventional weapons by the Middle East 1987-91

The countries are ranked according to 1987–91 aggregate imports. Figures are in US $m., at constant (1990) prices.

		1987	1988	1989	1990	1991	1987–91
1.	Saudi Arabia	2 617	2 441	1 914	2 487	1 138	10 597
2.	Iraq	5 438	2 759	1 526	596	0	10 319
3.	Egypt	2 850	493	248	1 203	667	5 461
4.	Israel	1 940	604	120	228	1 676	4 567
5.	Syria	1 392	1 393	395	0	267	3 447
6.	Iran	823	648	371	832	187	2 862
7.	UAE	69	68	772	740	141	1 790
8.	Kuwait	48	183	61	253	569	1 115
9.	Bahrain	233	177	82	394	26	912
10.	Jordan	252	270	90	5	0	616
11.	Oman	143	270	126	36	27	601
12.	Qatar	87	163	65	34	23	372
13.	Yemen, South	0	292	0	0	0	292
14.	Lebanon	18	39	26	0	0	83
15.	Yemen, North	0	33	42	0	0	75
Total		15 910	9 833	5 838	6 807	4 720	43 108

Source: SIPRI data base

Table A.3. Exports of major conventional weapon systems to the Middle East, 1987–91

Figures are values of major conventional weapon systems transferred, in US $m., at constant (1990) prices

Recipient	Seller USA	USSR	France	UK	China	Brazil	Italy	Egypt	Yugoslavia	FRG	Others	Total
Saudi Arabia	2 855	–	1 995	3 474	1 715	148	295	16	–	4	95	10 597
Iraq	283	7 049	719	–	703	815	43	402	–	41	264	10 319
Egypt	4 121	–	803	3	–	149	253	–	–	14	118	5 461
Israel	4 475	–	–	–	–	–	–	–	–	19	73	4 567
Syria	–	3 180	–	–	–	–	–	–	–	–	267	3 447
Iran	–	715	–	–	1 390	25	–	–	–	–	732	2 862
UAE	78	–	1 388	4	–	–	45	–	–	188	87	1 790
Kuwait	80	211	17	28	–	–	–	164	572	–	43	1 115
Bahrain	570	–	90	11	–	–	–	–	–	241	–	912
Oman	27	–	59	510	–	–	–	5	–	–	15	616
Jordan	75	55	115	95	–	77	–	–	–	–	184	601
Qatar	–	–	359	–	–	–	–	–	–	–	13	372
Yemen, South	–	292	–	–	–	–	–	–	–	–	–	292
Yemen, North	–	27	–	–	42	–	–	–	–	–	14	83
Lebanon	–	–	8	–	–	–	–	–	–	–	67	75
Total	12 564	11 529	5 553	4 125	3 850	1 214	636	587	572	507	1 972	43 108

Notes: Export totals differ from those in table A.1 and A.2 because of rounding.
Source: SIPRI data base

2. SIPRI methodology and coverage

SIPRI statistics are trend indicators of deliveries of major conventional weapons and not figures which measure what was actually paid. The SIPRI arms trade data cover five categories of major conventional weapons: aircraft, armour and artillery, guidance and radar systems, missiles, and warships. The registers and statistics do not include the trade in small arms, artillery under 100-mm calibre, ammunition, support items, services and components or component technology, except for specific items.

There are two criteria for the selection of major weapon transfers for the registers. The first is that of military application. The aircraft category excludes aerobatic aeroplanes and gliders. Transport aircraft and VIP transports are included only if they bear military insignia or are otherwise confirmed as military registered. Micro-light aircraft, remotely piloted vehicles and drones are not included although these systems are increasingly finding military applications.

The armour and artillery category includes all types of tanks, tank destroyers, armoured cars, armoured personnel carriers, armoured support vehicles, infantry combat vehicles as well as multiple rocket launchers, self-propelled and towed guns and howitzers with a calibre equal to or above 100 mm. Military lorries, jeeps and other unarmoured support vehicles are not included.

The category of guidance and radar systems is a residual category for electronic-tracking, target-acquisition, fire-control, launch and guidance systems that are either (*a*) deployed independently of a weapon system listed under another weapon category (e.g., certain ground-based SAM launch systems) or (*b*) shipborne missile-launch or point-defence (CIWS) systems. The values of acquisition, fire-control, launch and guidance systems on aircraft and armoured vehicles are included in the value of the respective aircraft or armoured vehicle. The reason for treating shipborne systems separately is that a given type of ship is often equipped with numerous combinations of different surveillance, acquisition, launch and guidance systems.

The missile category includes only guided missiles. Unguided artillery rockets and man-portable anti-armour rockets are excluded. Free-fall aerial munitions (such as 'iron bombs') are also excluded. In the naval sphere, anti-submarine rockets and torpedoes are excluded.

The ship category excludes small patrol craft (with a displacement of less than 100 t unless they carry cannon with a calibre equal to or above 100 mm, missiles or torpedoes), research vessels, tugs and ice-breakers. Combat support vessels such as fleet replenishment ships are included.

The second criterion for selection of items is the identity of the buyer. Items must be destined for the armed forces, paramilitary forces, intelligence agencies or police of another country. (See SIPRI, *SIPRI Yearbook 1991: World Armaments and Disarmament*. Oxford University Press 1991, chapter 7, appendix 7 D, pp. 309–10)

SIPRI register of the trade in and licensed production of major conventional weapons in the Middle East, 1991

This register lists major weapons on order or under delivery, or for which the licence was bought and production was under way or completed during 1991. 'Year(s) of deliveries' includes aggregates of all deliveries and licensed production since the beginning of the contract. The conventions, abbreviations and acronyms used, are explained below. Entries are alphabetical, by recipient, supplier and licenser.

Recipient/ supplier (S) or licenser (L)	No. ordered	Weapon designation	Weapon description	Year of order/ licence	Year(s) of deliveries	No. delivered/ produced	Comments
Bahrain							
S: USA	8	AH-64 Apache	Helicopter	1991			
	43	M-60-A3	Main battle tank	1990	1991	16	
	9	MLRS 227mm	MRL	1990			Deal worth $50 m
	450	AGM-114A	ASM	1990			Arming AH-64 Apache helicopters
Egypt							
S: Czechoslovakia	48	L-59	Jet trainer	1991			Deal worth $204 m
USA	24	AH-64 Apache	Helicopter	1990			Deal worth $488 m incl Hellfire missiles
	2	E-2C Hawkeye	AEW	1989	1990	1	Deal worth $84 m
	42	F-16C	Fighter	1987	1991	(10)	Third order
	46	F-16C	Fighter	1991			From Turkish assembly line; deal worth $1.3 b
	4	F-16D	Fighter/trainer	1987	1991	4	
	15	M-1 Abrams	Main battle tank	1988	1990–91	15	Part of $2 b deal incl 540 to be co-produced
	4	RGM-84A Launch	ShShM launcher	(1990)			Part of Romeo Class submarine modernization programme worth $113.6 m
	(10)	Tracksta r	Surveillance radar	(1989)	1990–91	(10)	Deal worth $38 m
	492	AGM-114A	ASM	1990			Arming AH-64 Apache helicopters
	144	AGM-65D	ASM	1988	1991	80	Arming F-16 fighters; deal worth $27 m incl training missiles, parts and electronic counter measure pods

Recipient/ supplier (S) or licenser (L)	No. ordered	Weapon designation	Weapon description	Year of order/ licence	Year(s) of deliveries	No. delivered/ produced	Comments
	40	AGM-65D	ASM	1991			Arming F-16 fighters
	40	AGM-65G	ASM	1991			Arming F-16 fighters
	20	AGM-84A Harpoon	Anti-ship missile	1990			
	282	AIM-7M Sparrow	Air-to-air missile	(1987)			Arming F-16 fighters; deal worth $42 m
	7 511	BGM-71D TOW-2	Anti-tank missile	1988	1989–91	(600)	Includes 180 launchers, 504 night-vision sights and spares
	100	FIM-92A Stinger	Portable SAM	1990	1991	100	Supplied to Egyptian forces in Desert Storm
L: UK	..	Swingfire	Anti-tank missile	1977	1979–91	7 412	
USA	540	M-1 Abrams	Main battle tank	1988			Following direct delivery of 15; deal worth $2 b
	34	AN/TPS-63	Surveillance radar	1986	1988–91	25	Deal worth $190 m
	..	AIM-9P	Air-to-air missile	(1988)	1990–91	996	In addition to 37 assembled from kits
Iran							
S: China	(8)	HQ-2B	SAM system	(1989)	1990–91	(4)	Coastal air defence batteries
	(96)	HQ-2B	SAM	1989	1990–91	(48)	For coastal air defence batteries
Czechoslovakia	(300)	T-55	Main battle tank	1991			Order number may be higher
Iraq	47	MiG-21 Bis	Fighter	1991			Flown to Iran and not returned; incl unspecified number of Su-25 fighters
	4	MiG-29	Fighter	1991			Flown to Iran and not returned
	40	Su-20 Fitter-C	Fighter/grd attack	1991			Flown to Iran and not returned
	24	Su-24 Fencer	Fighter/bomber	1991			Flown to Iran and not returned
Pakistan	25	Supporter	Trainer	1989	1989–91	(25)	
USSR	..	T-72	Main battle tank	1989	1990–91	(100)	Order may be up to 500
L: China	..	Oghab	SSM	1985	1986-91	(1 000)	Chinese Type-83 rocket; local production continues
Israel							
S: Germany, FR	50	BRDM-2	Scout car	1991	1991	50	Reconnaissance vehicle with NBC protection

	12	T-72	Main battle tank	1991	1991	12	Former GDR equipment
	8	Tpz-1	APC	1991	1991	8	
	1	SA-6 SAMS	SAM system	1991			Former GDR equipment
	(1)	AA-10 Alamo	Air-to-air missile	(1990)	1991	(1)	For technical evaluation
	(1)	AA-8 Aphid	Air-to-air missile	(1990)	1991	(1)	For technical evaluation
	(1)	AT-3 Sagger	Anti-tank missile	(1990)	1991	(1)	For technical evaluation
	(1)	AT-4 Spigot	Anti-tank missile	(1990)	1991	(1)	For technical evaluation
	(1)	AT-5 Spandrel	Anti-tank missile	(1990)	1991	(1)	For technical evaluation
	2	Dolphin	Submarine	1991			Deal worth $570 m; financed by US FMS funding
Netherlands	1	Patriot battery	SAM system	1991	1991	1	
	(32)	MIM-104 Patriot	SAM	1991	1991	(32)	
USA	18	AH-64 Apache	Helicopter	1989	1990–91	18	Deal worth $285 m incl support equipment
	..	Bonanza A-36	Lightplane	1990			
	10	CH-53E	Helicopter	1990	1990–91	10	
	15	F-15A Eagle	Fighter	1990	1991	9	Ex-USAF
	10	F-15A Eagle	Fighter	1991			In addition to 15 leased in 1990
	30	F-16C	Fighter	1988	1991	(15)	Follow-on order for 60 more under negotiation
	30	F-16D	Fighter/trainer	1988	1991	(15)	
	4	Patriot battery	SAM system	1990	1990–91	3	
	1	Patriot battery	SAM system	(1991)			In addition to previous deliveries
	3	RGM-84A Launch	ShShM launcher	(1988)			Arming Saar-5 Class corvettes
	539	AGM-114A	ASM	1990	1990–91	(200)	Arming 18 AH-64 Apache helicopters
	300	AIM-9M	Air-to-air missile	(1991)			Deal worth $32 m incl support
	..	FIM-92A Stinger	Portable SAM	1990			
	128	MIM-104 PAC-2	ATBM	1990	1991	128	
	(64)	MIM-104 Patriot	SAM	1991			
	(48)	RGM-84A Harpoon	ShShM	(1988)			Arming Saar-5 Class corvettes
	3	Saar-5 Class	Corvette	1988			Built in USA to Israeli design; fully financed with FMS credits worth $300 m; some sub-systems to be fitted in Israel
Jordan							
L: USA	100	Model 300C	Helicopter	1989			Production for civilian and military customers

Recipient/ supplier (S) or licenser (L)	No. ordered	Weapon designation	Weapon description	Year of order/ licence	Year(s) of deliveries	No. delivered/ produced	Comments
Kuwait							
S: UK	16	EMB-312 Tucano	Trainer	1989	1991	16	
USA	40	F/A-18 Hornet	Fighter	1988	1991	1	Deal worth $1.9 b incl 32 C and 8 D versions, Sidewinder, Harpoon, Sparrow and Maverick missiles
	300	AGM-65G	ASM	1988			Anti-ship version; arming F/A-18 Hornet fighters
	40	AGM-84A Harpoon	Anti-ship missile	1988			Arming F/A-18 Hornet fighters
	200	AIM-7F Sparrow	Air-to-air missile	1988			Arming F/A-18 Hornet fighters
	120	AIM-9L	Air-to-air missile	1988			Arming F/A-18 Hornet fighters
Yugoslavia	200	T-72	Main battle tank	(1989)	1990-91	200	
Oman							
S: UK	4	Hawk-100	Jet trainer	1989			Deal worth $225 m incl 12 Hawk-200 versions
	12	Hawk-200	Fighter	1990			
USA	..	M-60-A3	Main battle tank	1991	1991	27	May be up to 43
	119	V-300 Commando	APC	1991			Deal worth $150 m
	(96)	AIM-9L	Air-to-air missile	1990			Arming 16 Hawk-100/200 aircraft; could be from European production
Qatar							
S: France	6	TRS-2201	Air defence radar	(1986)	1986-91	(6)	
	500	Mistral	Portable SAM	1990			
South Africa	12	G-5 155mm	Towed howitzer	1991	1991	(12)	
Saudi Arabia							
S: Canada	1 117	LAV-25	APC	1990			Deal worth $700 m
France	12	AS-332	Helicopter	1988	1990-91	12	6 armed with Exocet missiles; deal worth $430 m incl 20 armed speed boats

	6	Crotale SAMS	SAM system	1990	1991	6	
	3	Crotale Naval L	ShAM launcher	1990			Arming La Fayette Class frigates; part of deal worth $1.2 b
	3	MM-40 Launcher	ShShM launcher	1990			Arming La Fayette Class frigates
	(180)	AS-15TT	Anti-ship missile	1990			Second order
	250	Crotale Naval	ShAM	1990			Arming La Fayette Class frigates
	(1 000)	HOT-2	Anti-tank missile	1990	1991	(350)	
	1 200	Mistral	Portable SAM	1989	1991	(400)	
	(24)	MM-40 Exocet	ShShM	1990			Arming La Fayette Class frigates
	..	R-440 Crotale	Landmobile SAM	1990	1991	(72)	Deal worth $670 m incl logistic support
	4 000	Shahine-2	Landmobile SAM	1984	1986–91	(3800)	Part of 'Al Thakeb' deal worth $4.1 b
	3	La Fayette Cl	Frigate	1989			Deal worth $3.5 b; offsets worth 30%
Germany, FR	10	Tpz-1	APC	(1981)	1991	10	
Switzerland	300	Piranha	APC	1990			Deal worth $400 m
UK	12	BAe-125-800	Utility aircraft	1988	1988–90	6	Part of 1988 Tornado deal; for VIP use
	40	Hawk-100	Jet trainer	1988			Part of 1988 Tornado deal
	20	Hawk-200	Fighter	1988			Part of 1988 Tornado deal
	48	Tornado IDS	MRCA	1988			
	(40)	WS-70	Helicopter	1988			
	480	ALARM	ARM	1986	1991	(60)	Arming Tornado IDS fighters
	(480)	Sea Eagle	Anti-ship missile	1985			Arming Tornado IDS fighters
	(560)	Sky Flash	Air-to-air missile	(1986)	1989–91	(560)	Arming Tornado ADV fighters
	6	Sandown Class	Minehunter	1988	1991	1	
USA	12	AH-64 Apache	Helicopter	1990			Deal worth $300 m including 155 Hellfire missiles; follow-on order for 36 probable
	24	F-15C Eagle	Fighter	1990	1991	10	Mix of C and D versions
	7	KC-130H	Tanker/transport	1990			
	8	UH-60 Blackhawk	Helicopter	1990	1991	4	Medivac version, deal worth $121 m
	150	M-1 Abrams	Main battle tank	1990			Second 1990 order
	315	M-1-A2 Abrams	Main battle tank	1990			Deal worth $1.5 b
	207	M-113-A2	APC	(1991)			Part of $3.1 b deal
	27	M-198 155mm	Towed howitzer	1990			
	220	M-2 Bradley	AIFV	1989	1989–91	(200)	Deal worth $550 m incl anti-tank missiles and training

Recipient/ supplier (S) or licensor (L)	No. ordered	Weapon designation	Weapon description	Year of order/ licence	Year(s) of deliveries	No. delivered/ produced	Comments
	200	M-2 Bradley	AIFV	1990			In addition to 220 ordered previously
	50	M-548	APC	(1991)			Part of $3.1 b deal
	43	M-578	ARV	(1991)			Part of $3.1 b deal
	12	M-88-A1	ARV	1990			Deal worth $26 m
	9	MLRS 227mm	MRL	1990			
	(6)	AN/TPS-43	3-D radar	1985	1987–91	(5)	
	(6)	AN/TPS-70	Air defence radar	1989	1990–91	(6)	Deal worth $23.5m
	8	Patriot Battery	SAM system	1990			Deal worth $984 m incl 384 missiles, 6 radars and support
	14	Patriot Battery	SAM system	1991			Deal worth $3.1 b incl 758 missiles
	155	AGM-114A	ASM	1990			Arming 12 Apache helicopters
	770	AIM-7M Sparrow	Air-to-air missile	1991			Part of deal worth $365 m incl laser-guided bombs
	671	AIM-9P	Air-to-air missile	1986	1989–91	(671)	
	4 460	BGM-71D TOW-2	Anti-tank missile	1988	1989–91	(1 500)	
	1 750	BGM-71D TOW-2	Anti-tank missile	1990			Deal worth $55 m including 150 launchers
	384	MIM-104 PAC-2	ATBM	1990			
	758	MIM-104 PAC-2	ATBM	1991			
Syria							
S: Czechoslovakia	(300)	T-72	Main battle tank	1991			Order may include 90 T-55s
Korea, North	..	Scud-C launcher	Mobile SSM system	1991	1991	(20)	May be up to 20
	..	Scud-C	SSM	(1991)	1991	(100)	
USSR	3	Kilo Class	Submarine	(1987)			
United Arab Emirates							
S: France	18	Mirage-2000	Fighter	1985	1989–91	18	For Abu Dhabi; modified for US AIM-9 Sidewinder missiles
	1	Mirage-2000	Fighter	1990	1991	1	Attrition replacement
	500	Mistral	SAM	1988	1991	120	Arming 2 Type 62-001 corvettes

	(30)	R-440 Crotale	Landmobile SAM	1988			
South Africa	78	G-6 155mm	SPH	1990	1991	(25)	
UK	12	Hawk-100	Jet trainer	1989			For Abu Dhabi; part of deal worth $340 m
USA	20	AH-64 Apache	Helicopter	1991			Deal worth $680 m incl Hellfire missiles
	620	AGM-114A	ASM	1991			Arming AH-64 Apache helicopter

Conventions

The following conventions are used in the register

..	Data not available or not applicable
—	Negligable figure (<0.5) or none
()	Uncertain data or SIPRI estimate

Abbreviations and acronyms

AEW	Airborne early-warning (system)
AIFV	Armoured infantry fighting vehicles
APC	Armoured personnel carrier
ARM	Anti-radar missile
ARV	Armoured recovery vehicle
ASM	Air-to-surface missile
ATBM	Anti-tactical ballistic missile
MRCA	Multi-role combat aircraft
MRL	Multiple rocket launcher
MSC	Minesweeper, coastal
SAM	Surface-to-air missile
ShAM	Ship-to-air missile
ShShM	Ship-to-ship missile
SPH	Self-propelled howitzer
SSM	Surface-to-surface missile
3-D	Three-dimensional