

**IRANIAN WEAPONS PROGRAMS: THE RUSSIAN
CONNECTION**

**HEARING AND PUBLIC
MEETING**

BEFORE THE

SUBCOMMITTEE ON NEAR EASTERN AND
SOUTH ASIAN AFFAIRS

AND THE

SUBCOMMITTEE ON EUROPEAN AFFAIRS

OF THE

**COMMITTEE ON FOREIGN RELATIONS
UNITED STATES SENATE**

ONE HUNDRED SIXTH CONGRESS

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IRANIAN WEAPONS PROGRAMS: THE RUSSIAN CONNECTION

THURSDAY, OCTOBER 5, 2000

U.S. SENATE,
SUBCOMMITTEE ON NEAR EASTERN AND
SOUTH ASIAN AFFAIRS, AND
SUBCOMMITTEE ON EUROPEAN AFFAIRS,
COMMITTEE ON FOREIGN RELATIONS,
Washington, DC.

The subcommittees met, pursuant to notice, at 11:07 a.m. in room SD-419, Dirksen Senate Office Building, Hon. Sam Brownback (chairman of the Subcommittee on Near Eastern and South Asian Affairs) presiding and Hon. Gordon H. Smith (chairman of the Subcommittee on European Affairs) presiding.

Present: Senators Brownback and Smith.

Senator BROWNBACk. The hearing will come to order. Welcome. Assistant Secretary Einhorn, welcome. Mr. Lauder, welcome. Delighted to have you here. It is a pleasure to have both of you here to testify in front of this joint hearing of the Near Eastern and South Asian Affairs and European Affairs Subcommittees.

We are here today to discuss Iran's continuing aggressive efforts to obtain weapons of mass destruction. Although the Clinton-Gore administration is in the midst of a charm offensive toward Iran, going so far as to grant a visa for the Iranian Foreign Minister to tour American college campuses last month, it is obvious to most of us that Iran remains a danger to the world and to its own people. For those of you looking for evidence, ten Jews are languishing in Iranian prisons as I speak on false charges, probably still praying that the world's greatest democracy cares enough to do something for them.

On March 14 of this year, President Clinton signed the Iran Non-proliferation Act of 2000. Now, I assume, perhaps incorrectly, that when a President signs a bill into law he intends to carry out the terms of that bill. Accordingly, Congress was to receive a report on foreign entities or persons that provide assistance to Iran's missile and nuclear, biological, and chemical weapons programs on June 12 of this year. That report never came.

A second report was due on September 14. It too never came. One reason why: The State Department did not even bother to ask the CIA for the relevant documents for the report until the third week of May, 3 weeks before the first report was due and a full 2½ months after the President signed the bill into law.

But perhaps the administration's lack of urgency relates to improvements on the Iran proliferation front. Mr. Einhorn, has WMD

proliferation to Iran ended, will be a key point and question that I will want to hear from you. All the evidence that I see suggests to the contrary. Transfers to Iran from the very countries with whom this act is concerned, Russia in particular, continue unabated.

Just last month, Tehran again test fired its Shahab-3 missile. That missile would be sitting in a box somewhere if it was not for the assistance of Russia to Iran.

To my mind, we are facing a major crisis in the coming years and responsibility can largely be laid at the feet of this administration. In 1993 the Clinton administration turned the Nation's Russian policy over to Vice President Al Gore, who set up a commission with Victor Chernomyrdin, then the Russian Vice Premier. This so-called GCC was supposedly the place where U.S. concerns over Russian proliferation were to be resolved.

Let us take, for example, the matter of Russia's massive arming of Iran with advanced conventional weaponry, which began in earnest in 1992. In June 1995, Vice President Al Gore negotiated a deal with the Russians supposedly to bring this trade to a halt. In exchange for Russia's pledge not to conclude any new contracts, the United States let Russia into the Wassenaar Arrangement, changed U.S. regulations to allow U.S. defense contractors and satellite companies to do business with Russian firms, and pledged to avoid any sanctions that would upset this relationship. In other words, because of this deal that was struck by Vice President Gore Russia is eligible for all sorts of defense cooperation. Indeed, according to recent State Department estimates, Russia has made \$7.7 billion over the past few years just from launching U.S. satellites.

It really should not have come as any surprise to anyone that, despite the 1995 agreement, Russia continued to sell advanced conventional weapons to Iran. Indeed, the Director of the Central Intelligence Agency in their most recent proliferation report stated: "Russia, along with its sister republics in the FSU, also remains an important source of conventional weapons and spare parts for Iran."

Then of course there are the ineffectual efforts by this administration to terminate Russia's nuclear cooperation with Iran. Despite all sorts of pledges by Russia not to go beyond limited construction at the Bushehr facility, recent press accounts indicate that Russia is now engaging in the sale of sophisticated laser technology that will speed Iran's ability to enrich nuclear materials from weapons.

Russia is doing this despite its promise made under the Non-proliferation Treaty not to assist foreign nations in acquiring nuclear weapons. Russia is doing it despite all manner of pledges to Vice President Gore and despite the fact that it is receiving hundreds of millions of dollars of foreign aid from programs run by the Department of Energy and the Department of State.

We all remember the administration's efforts from 1998 to 1999 to prevent the Senate from approving the Iran Nonproliferation Act. Various officials assured Senators time and again that Russia had turned the corner or that President Yeltsin had issued a crit-

ical directive or that the Duma would soon consider changes to export laws to solve these proliferation problems.

But looking back over the past 8 years, the truth of the matter is that this administration has not solved the proliferation problem. The problem has grown decidedly worse, and the world is a far more dangerous place because of that. The next administration will inherit a diplomatic situation chockful of broken promises and a commercial situation where Russian companies are profiting not only from the multi-billion dollar trade with the United States, but are doing a healthy business with the Iranians on the side.

Mr. Einhorn, I look forward to hearing you tell me that I am wrong on these matters, that the Iranian proliferation problem has abated, and that the reason our reports are not here is that you have nothing to report. I look forward to that testimony and to hearing what is taking place with these reports and in this proliferation area.

[A news release of Senator Brownback follows:]

News Release—For Immediate Release October 5, 2000

SAM BROWNBACK U.S. SENATOR FROM KANSAS

Gore-Russia-Iran Arms Connection Troubling

WASHINGTON.—Vice President Al Gore's connection to arms from Russia to Iran was a topic of concern today at a Senate Foreign Relations joint subcommittee hearing, U.S. Senator Sam Brownback said. Brownback's statement follows.

"We are facing a major crisis in the coming years, and responsibility can largely be laid at the feet of this Administration," Brownback said. "In 1993, the Clinton Administration turned the nation's Russia policy over to Al Gore, who set up a Commission with Victor Chernomyrdin (then the Russian Vice Premier). This so-called "GCC" was supposedly the place where U.S. concerns over Russian proliferation were to be resolved.

"Let us take for example the matter of Russia's massive arming of Iran with advanced conventional weaponry, which began in earnest in 1992. In June, 1995, Al Gore negotiated a deal with the Russians supposedly to bring this trade to a halt. In exchange for Russia's pledge not to conclude any new contracts, the United States let Russia into the Waasenaar Arrangement, changed U.S. regulations to allow U.S. defense contractors and satellite companies to do business with Russian firms, and pledged to avoid any sanctions that would upset this relationship. In other words, because of this deal that was struck by Vice President Gore, Russia is eligible for all sorts of defense cooperation. Indeed, according to recent State Department estimates, Russia has made \$7.7 billion over the past few years just from launching U.S. satellites.

"Despite the 1995 agreement, Russia continued to sell advanced conventional weapons to Iran. Indeed, the Director of Central Intelligence's most recent proliferation report states: 'Russia (along with its sister republics in the FSU) also remains an important source of conventional weapons and spare parts for Iran . . .'

"Then, of course, there are the ineffectual efforts by this administration to terminate Russia's nuclear cooperation with Iran. Despite all sorts of pledges by Russia not to go beyond limited construction at the Bushehr facility, recent press accounts indicate that Russia is now engaging in the sale of sophisticated laser technology that will speed Iran's ability to enrich nuclear material for weapons. Russia is doing this despite its promises made under the Nonproliferation Treaty not to assist foreign nations in acquiring nuclear weapons.

"Russia is doing it despite all manner of pledges to Vice President Gore, and despite the fact that it is receiving hundreds of millions of dollars in foreign aid from programs run by the Department of Energy and the Department of State.

"We all remember the administration's efforts from 1998 to 1999 to prevent the Senate from approving the Iran Nonproliferation Act. Various officials assured Senators, time and again, that Russia had 'turned the corner', or that President Yeltsin had issued a critical directive, or that the Duma would soon consider changes to export laws to solve the proliferation problem.

“But—looking back over the past eight years—the truth of the matter is that this administration has not solved the proliferation problem. The problem has grown decidedly worse, and because of that the world is a far more dangerous place.

“The next administration will inherit a diplomatic situation chock-full of broken promises, and a commercial situation where Russian companies are profiting not only from multi-billion dollar trade with the U.S., but are doing a healthy business with the Iranians on the side.

“Although the Clinton-Gore Administration is in the midst of a charm offensive toward Iran—going so far as to grant a visa for the Iranian Foreign Minister to tour American college campuses last month—it is obvious to most of us that Iran remains a danger to the world, and to its own people. And for those of you looking for evidence: ten Jews are languishing in Iranian prisons on false charges, probably still praying that the world’s greatest democracy cares enough to do something for them.

“On March 14 of this year, President Clinton signed the Iran Nonproliferation Act of 2000. Now I assume, perhaps incorrectly, that when a President signs a bill into law, he intends to carry out the terms of that law. Accordingly, Congress was due to receive a report on foreign entities or persons that provide assistance to Iran’s missile and nuclear, biological, and chemical weapons programs on June 12 of this year. It never came.

“A second report was due on September 14. It too never came. One reason it didn’t—the State Department did not even bother to ask the CIA for the relevant documents for the report until the third week of May, three weeks before the first report was due, and a full two-and-a-half months after the President signed the bill into law.

“Transfers to Iran from the very countries with whom this Act is concerned, Russia in particular, continue unabated. Just last month, Tehran again test-fired its Shahab-3 missile. That missile would be sitting in a box somewhere if it weren’t for Russian aid to Iran.

“Perhaps the administration’s lack of urgency relates to improvements on the Iran proliferation front. All the evidence I see suggests the contrary,” Brownback said.

Today’s hearing was a Senate Foreign Relations Committee joint subcommittee hearing. Senator Brownback is Chairman of the Subcommittee on Near Eastern and South Asian Affairs. Senator Gordon Smith is Chairman of the Subcommittee on European Affairs.

Senator BROWNBACK. We will first hear from Mr. Lauder and his testimony and then to Mr. Einhorn. First, though, I want to turn the microphone over to the co-chair of this hearing, Mr. Smith, who heads the Subcommittee on European Affairs.

Senator SMITH. Thank you, Senator Brownback, for taking the initiative to hold this hearing on Russia’s role in Iran’s weapons program. I am grateful we are conducting this hearing as a joint session of your subcommittee and my own.

I would like to also welcome Bob Einhorn and John Lauder, to welcome you both. These gentlemen are the point men of our Government’s efforts to curb the proliferation of destructive weapons technologies. In addition to Assistant Secretary Einhorn and Mr. Lauder’s testimonies, I want to thank the American Jewish Committee for its vigilance on this issue. The AJC has provided the Foreign Relations Committee with copies of the June 2000 report “Iran and Weapons of Mass Destruction.” I would like to ask that this report in its entirety be submitted for the record and thank the American Jewish Committee for its efforts.

Senator BROWNBACK. Without objection.

[The report referred to begins on page 30:]

Senator SMITH. There are few issues of more pressing concern than the Government of Iran’s vehement anti-Western policy. Its support for international terrorist organizations and its sustained efforts to develop and deploy weapons of even greater reach and destructiveness is unbelievable. But I do not believe that this is the

wish of the Iranian people, whose rich history at one time included a close and warm relationship with America.

I am hopeful that the recent profound and far-reaching changes that we have been witnessing in Iran will open the barriers the Iranian Government imposed upon that partnership that once existed between our countries. However, despite our hope that Iran's internal dynamics will yield a change in our two countries' relationships, we cannot yet be confident that these dynamics will generate a significant change in Iran's conduct abroad in the foreseeable future.

The unfortunate reality today is that Tehran adamantly opposes the U.S.-led Middle East peace process and toward that end provides material and financial support to Hezbollah, Hamas, the Palestinian Islamic Jihad, and other violent, radical Islamic groups. For these and other activities, Iran has been identified by the Department of State as the most active state sponsor of terrorism.

The urgency of the threat posed by Iran's foreign policy has been increased exponentially by Tehran's efforts to develop and deploy missiles of increasing range and accuracy and its efforts to complement that offensive capacity with the full spectrum of chemical, biological, and nuclear weapons. Just this last summer, Iran successfully tested the 800-mile Shahab-3 missile, the same missile that paraded through Tehran not too long ago on a carrier emblazoned with the inscription "Israel should be wiped off the map"—a phrase that underscores Iran's destabilizing role in that part of the world.

But these programs could soon directly affect our own security. Iran is in the latter stages of developing a 1,200-mile range Shahab-4 missile and other ICBM's of potentially even greater range. This past March, CIA Director George Tenet testified that in the next few years Iran's ICBM's will probably be able to reach the United States.

As the title of this hearing suggests, the progress Iran has made in developing its military capabilities has not been without outside support. Far from it, the fact is that the Iranian military has benefited greatly from foreign suppliers, and among these Russia has been second to none. Russian equipment, training, technology, and know-how permeate the entire Iranian military. The Iranian army is equipped with modern Russian tanks and Russian air defense systems. The Iranian navy deploys a Russian diesel submarine. In January Iran began to mass produce the Russian-developed Konkurs anti-tank missile.

Experts predict that Russia will provide Iran some \$4 billion in military equipment in the coming years. Equally disturbing has been the assistance Russia has provided Iran's missile programs. According to the administration's latest unclassified report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions—this report is dated the 1st of July through the 31st of December 1999: "Russian entities during the 6 months of 1999 have provided substantial missile-related technology, training, and expertise to Iran that almost certainly will continue to accelerate Iranian efforts to develop new ballistic missile systems."

On top of helping Iran obtain advanced conventional weaponry, Russia has been a significant source of assistance to Russia's WMD program. The symbol of that cooperation are the power plants at Bushehr, where Russia is building two nuclear reactors, and Moscow seeks to expand that cooperation. Moscow and Tehran are considering the construction of three more facilities that are potentially capable of producing weapons-grade plutonium.

More recently, the press reported that Moscow agreed to send tritium gas to the Nuclear Research Center in Tehran. Tritium gas is primarily used to enhance the explosive power of nuclear warheads. Now there are indications that Russia is pursuing the sale of laser-enriched technology to Iran which could be used to make higher grades of nuclear material.

Let us not forget the fact that Iran will spend close to \$1 billion on the Bushehr nuclear power plant, an expenditure by a country that both faces financial difficulty, yet is awash in oil. Clearly, Russia cannot be blind to the fact that Bushehr is not tied to Iran's energy needs, but is instead a cornerstone to its efforts to develop, manufacture, and deploy nuclear weapons.

This sustained and lethal relationship between Russia and Iran has not gone unnoticed in Congress. Curbing this relationship has been a longstanding bipartisan foreign policy priority on the Hill. In the 105th Congress we passed the Iran Missile Proliferation Sanctions Act that would have denied U.S. Government assistance to those who assist Iran's ballistic missile program. Unfortunately, this bill, sponsored by Senators Lott and Lieberman, was vetoed by the Clinton-Gore administration.

Congress did pass and the President did sign the Iran Non-proliferation Act last March. It authorizes, as opposed to mandating, the President to impose such sanctions against those sharing these technologies with Iran. The point of these two bills, which passed with overwhelming margins, is clear: Curbing Russia's support of Iran's weapons programs should be a top priority of U.S. policy. The Kremlin's refusal to curb this relationship should prompt a substantive change in how the United States engages Russia.

To date the administration has treated this Iranian-Russian technology cooperation not as a policy priority, but as a nuisance to its own strategy of engaging the Government of the Russian Federation. As a result, the administration's response to Russia's cooperation with Iran has been more symbolic than substantive, a fact clearly evident to the Kremlin.

As I mentioned, the administration reported that during the first half of 1999 Russia was a major supplier of missile technology to Iran. There is ample evidence today that this cooperation continues, and Russia recently agreed to provide Iran technologies and materials that Tehran can use to further its development of nuclear weapons.

What has been the Iran response? It is true that the administration sanctioned the specific Russian institutes and companies known to have been the most immediate source of technology obtained by Iran, and it is true that this has denied these specific entities access to U.S. assistance and cooperation. However, at the same time, the administration expanded both the depth and

breadth of U.S.-Russian cooperation involving sensitive missile and space technology. Over the last year it expanded U.S.-Russia space cooperation involving technology-sharing and assistance dollars.

There is great concern about the possibility of technology sharing in this area. It is a mistake for the administration to conclude that one can draw a clear line between the Russian Government and these Russian so-called entities that have been the direct source of dangerous technologies given to Iran. Such an inference reflects a naive understanding, I believe, of the economic and political power in Russia today.

As we approach an important Presidential election, now is the appropriate time to evaluate, refine, and if necessary restructure how our Government approaches the challenges and dangers consequent to Russia's role in Iran's missile and WMD programs. The track record clearly indicates that our current strategy has not sufficiently convinced the Government of the Russian Federation to curb the flow of its dangerous weapons and technologies to Iran and, for that matter, to other states whose policies jeopardize American national security interests.

Again I thank our witnesses, Bob and John, for appearing before us today. I am interested in your evaluation of what role Russia plays in Iran's weapons program, the role that it likely is to play in the foreseeable future, and what the United States can do to more effectively curb this lethal partnership.

Thank you, Mr. Chairman.

[The prepared statement of Senator Smith follows:]

PREPARED STATEMENT OF SENATOR GORDON SMITH

Thank you, Senator Brownback, for taking the initiative to hold this hearing on Russia's role in Iran's weapons programs. I am grateful that we are conducting this hearing as a joint session of my Subcommittee on European Affairs and your Subcommittee on Near Eastern and South Asian Affairs.

Ambassador Einhorn, Mr. Lauder, I welcome you as a friend and, respectively, as our Assistant Secretary of State for Nonproliferation and our Special Assistant to the Director of Central Intelligence for Non-Proliferation. These gentlemen are the point-men of our government's effort to curb the proliferation of destructive weapons technologies.

In addition to Ambassador Einhorn's and Mr. Lauder's testimonies, I want to thank the American Jewish Committee for its vigilance on this issue. The AJC has provided the Foreign Relations Committee with copies of the June 2000 report, "Iran and Weapons of Mass Destruction."

There are few issues of greater pressing national security concern than the Government of Iran's vehemently anti-Western policy, its support for international terrorist organizations, and its sustained efforts to develop and deploy weapons of ever greater reach and destructiveness. I do not believe that this is the wish of the Iranian people, whose rich history at one time included a close and warm relationship with America. I am hopeful that the recent profound and far-reaching changes we may be witnessing in Iran today will open the barriers the Iranian Government imposed upon that partnership.

However, despite our hope that Iran's internal dynamics will yield a change in our two countries' relationship, we cannot yet be confident that these dynamics will generate a significant change in Iran's conduct abroad in the foreseeable future. The unfortunate reality today is that Tehran adamantly opposes the U.S.-led Middle East peace process and, toward that end, provides material and financial support to Hizballah, Hamas, Palestinian Islamic Jihad, and other violent, radical Islamic groups.

For these and other activities, Iran has been identified by the Department of State as "THE" most active state sponsor of terrorism. The urgency of the threat posed by Iran's foreign policy has been increased exponentially by Tehran's efforts to develop and deploy missiles of increasing range and accuracy and its efforts to complement that offensive capacity with the full spectrum of chemical, biological,

and nuclear weapons. Just this last summer, Iran successfully tested the 800 mile Shahab-3 missile—the same missile it paraded through Tehran not too long-ago on a carrier emblazoned with the inscription “Israel should be wiped off the map”—a phrase that underscores Iran’s destabilizing role in that part of the world.

But these programs could soon directly affect our own security. Iran is in the latter stages of developing a 1,200-mile range Shahab-4 missile and other ICBMs of potentially even greater ranges. This past March, CIA Director George Tenet testified that in the next few years Iran’s ICBMs will probably be able to reach the United States.

As the title of this hearing suggests, the progress Iran has made in developing its military capabilities has not been without outside support. Far from it. The fact is that the Iranian military has benefitted greatly from foreign suppliers—and, among these, Russia has been second-to-none. Russian equipment, training, technology, and know-how permeate the entire Iranian military. The Iranian army is equipped with modern Russian tanks and Russian air defense systems. The Iranian navy deploys Russian diesel submarines.

In January, Iran began to mass produce the Russian developed Konkurs anti-tank missile. Experts predict that Russia will provide Iran some \$4 billion in military equipment in the coming years. Equally disturbing has been the assistance Russia has provided Iran’s missile programs. According to the Administration’s latest *Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions. 1 July Through 31 December 1999*:

Russian entities during the second six months of 1999 have provided substantial missile related technology, training, and expertise to Iran that almost certainly will continue to accelerate Iranian efforts to develop new ballistic missile systems.

On top of helping Iran attain advanced conventional weaponry, Russia has been a significant source of assistance to Iran’s WMD programs. The symbol of that cooperation are the powerplants at Bushehr where Russia is building two nuclear reactors—and Moscow seeks to expand that cooperation. Moscow and Tehran are considering the construction of three more facilities that are potentially capable of producing weapons-grade plutonium.

More recently, the press reported that Moscow agreed to send tritium gas to a nuclear research center in Tehran. Tritium gas is primarily used to enhance the explosive power of nuclear warheads. And, now there are indications that Russia is pursuing the sale of laser enrichment technology to Iran which can be used to make grade nuclear material.

Let us not forget the fact that Iran will spend close to \$1 billion on the Bushehr nuclear power plant—an expenditure by a country that both faces financial difficulty, yet is awash in oil. Clearly, Russia cannot be blind to the fact that Bushehr is not tied to Iran’s energy needs but is instead a cornerstone to its efforts to develop, manufacture, and deploy nuclear weapons. This sustained and lethal relationship between Russia and Iran has not gone unnoticed in Congress. Curbing this relationship has been a long-standing, bi-partisan foreign policy priority here on the Hill.

The 105th Congress passed the Iran Missile Proliferation Sanctions Act that would have denied U.S. Government assistance to those who assist Iran’s ballistic missile program. Unfortunately, this bill sponsored by Senators Lott and Lieberman, was vetoed by the Administration. Congress did pass and the President did sign the Iran Nonproliferation Act last March. It authorizes, as opposed to mandates, the President to impose such sanctions against those sharing these technologies with Iran.

The point of these two bills, which passed with overwhelming margins, is clear. Curbing Russia’s support of Iran’s weapons programs should be a top priority of U.S. policy. The Kremlin’s refusal to curb this relationship should prompt a substantive change in how the United States engages Russia.

To date, the Administration has treated this Iranian-Russian technology cooperation not as a policy priority, but as a nuisance to its own strategy of engaging the Government of the Russian Federation. As a result, the Administration’s response to Russia’s cooperation with Iran has been more symbolic than substantive, a fact clearly evident to the Kremlin.

As I mentioned, the Administration reported that during the first half of 1999, Russia was a major supplier of missile technology to Iran. There is ample evidence that this cooperation continues today, and Russia recently agreed to provide Iran technologies and materials that Tehran can use to further its development of nuclear weapons. What has been the U.S. response?

It is true that the administration sanctioned the specific Russian institutes and companies known to have been the most immediate source of technology attained by Iran. And it is true that this has denied these specific entities access to U.S. assistance and cooperation. However, at the same time, the Administration expanded both the depth and breadth of U.S.-Russian cooperation involving sensitive missile and space technology. Over the last year it expanded U.S.-Russia space cooperation involving technology sharing and assistance dollars. There is great concern about the possibility of technology sharing in this area.

It is a mistake for the Administration to conclude that one can draw a clear line between the Russian Government and these Russian so-called "entities" that have been the direct source of dangerous technologies to Iran. Such an inference reflects a naive understanding of economic and political power in Russia today.

As we approach an important Presidential election, now is the appropriate time to evaluate, refine and, if necessary, restructure how our Government approaches the challenges and dangers consequent to Russia's role in Iran's missile and WMD programs. The track record clearly indicates that our current strategy has not sufficiently convinced the Government of the Russian Federation to curb the flow of its dangerous weapons technologies to Iran and, for that matter, to other states whose policies jeopardize American national security interests.

I thank our witnesses for appearing before us today. I am interested in your evaluation of what role Russia plays in Iran's weapons programs, the role it is likely to play in the foreseeable future, and what the United States can do to more effectively curb this lethal partnership.

Senator BROWNBACK. Thank you, Senator Smith.

I have been told that there is objection to hearings going forward, that the Democrats have objected after 11:30. So at 11:30 we will need to turn the transcriber off, not transcribe, and we will take—we will go from a hearing to a public meeting, and we will have a videotape and be able to take the record from that. So I want to inform all present about that.

Mr. Lauder, thank you very much for joining us and I look forward to your testimony. The floor is yours.

**STATEMENT OF JOHN LAUDER, SPECIAL ASSISTANT TO THE
DIRECTOR OF CENTRAL INTELLIGENCE FOR NON-
PROLIFERATION, CENTRAL INTELLIGENCE AGENCY**

Mr. LAUDER. Thank you, Mr. Chairman and Mr. Chairman, thank you for inviting us to testify on this important topic.

As you both noted in your opening statements, Iran has ambitious development programs for missiles and weapons of mass destruction. Iran is seeking technologies related to missiles, as well as technology related to nuclear, chemical, and biological weapons, from a number of foreign sources. The development of these weapons in Iran and the extent to which foreign assistance is advancing Iranian weapons programs are among our toughest intelligence challenges and among our highest priorities in the intelligence community.

In my testimony today I will provide a summary of Russian assistance to Iran's weapons of mass destruction programs and its ballistic missile delivery systems. The Iranians regard these programs and the assistance to them as among their highest state secrets and go to great lengths to hide them from us. As a result, our knowledge of these programs is based on extremely sensitive intelligence sources and methods, and this precludes me from providing many details in this open session. But I hope the summary itself will be of use to the committee, and we will continue to keep the committee informed of additional details in classified briefings.

I would like to begin with a few comments on Iran's nuclear power and nuclear weapons programs. The intelligence community judges that Iran is actively pursuing the acquisition of fissile material and the expertise and technology necessary to form that material into nuclear weapons. As part of this process, Iran is attempting to develop the capability to produce both plutonium and highly enriched uranium.

Iran is seeking nuclear-related equipment, material, and technical assistance from a variety of foreign sources, most notably in Russia. Tehran claims that it seeks foreign assistance to master nuclear technology for civilian research and nuclear energy programs. However, the expertise and technology gained, along with the contacts established, could be used to advance Iran's nuclear weapons effort.

Work continues on the construction of a 1,000-megawatt nuclear power reactor at Bushehr that will be subject to International Atomic Energy safeguards. This project will not directly support a weapons effort, but it affords Iran broad access to Russia's nuclear industry.

Russian entities are interacting with Iranian nuclear research centers on a wide variety of activities beyond the Bushehr project. Many of these projects, ostensibly for civilian nuclear uses, have direct application to the production of weapons-grade fissile material, and the United States has levied trade restrictions against two Russian entities for providing nuclear assistance to Iran.

I would like to touch briefly on assistance by Russian entities to Iran that could contribute to Tehran's chemical warfare program. Iran launched its offensive chemical warfare program or CW program in the early 1980's in response to Baghdad's use of CW during the Iran-Iraq War. We believe the program remains active despite Tehran's decision to ratify the Chemical Weapons Convention.

Iran has a large and growing CW production capacity and already has produced a number of CW agents, including nerve, blister, choking, and blood agents. We believe it possesses a stockpile of at least several thousand metric tons of weaponized and bulk agent. Tehran's goals for its CW program for the past decade have been to expand its production capability and stockpile, reach self-sufficiency by acquiring the means to manufacture chemical production equipment and precursors, and diversify its CW arsenal by producing more sophisticated and lethal agents and munitions.

Numerous Russian entities have been providing Iran with dual use industrial chemicals, equipment, and chemical production technology that could be diverted to Tehran's offensive CW program. In 1999, for example, Russian entities provided production technology, training, and expertise that Iran could use to create a more advanced and self-sufficient CW infrastructure.

Turning now to Iran's biotechnology programs. Iran is pursuing both civilian biotech activities and a biological warfare [BW] program. Assistance by Russian activities to the former, the biotech activities, could further Iran's pursuit of biotechnology for military applications. Iran's biological weapons program or warfare program was initiated in the 1980's during the Iran-Iraq War. The program is in the late stages of research and development, but we believe Iran already holds some stocks of biological agents and weapons.

Tehran probably has investigated both toxins and live organisms as BW agents and for BW dissemination could use many of the same delivery systems, such as artillery and aerial bombs, that it has in its CW inventory. Iran has the technical infrastructure to support a significant BW program. It conducts top-notch legitimate biomedical research at various institutes, which we suspect also provide support to the BW program.

Iran is seeking expertise and technology from Russian entities that could advance Tehran's biological warfare effort. Russia has several government to government agreements with Iran in a variety of scientific and technical fields. Because of the dual use nature of much of this technology, Tehran can exploit these agreements to procure equipment and expertise that could be diverted to its BW effort.

Turning finally to missiles, Iran's ballistic missile program is one of the largest in the Middle East. Tehran already has deployed hundreds of short-range ballistic missiles covering most of Iraq and many strategic targets in the Persian Gulf. It is developing and may soon deploy the 1,300-kilometer range Shahab-3 medium range ballistic missile, which would allow Iran to reach Israel and most of Saudi Arabia and Turkey. Tehran probably has a small number of Shahab-3's available now for use in a conflict. It has announced that production and deployment has begun and it publicly displayed three Shahab-3's along with a mobile launcher and other ground support equipment.

Iran's public statements indicate that it plans to develop longer range delivery systems. Although Tehran stated that the Shahab-3 is Iran's last military missile, we are concerned that Iran will use future systems in a military role.

Iran's defense minister announced the development of the Shahab-4, originally calling it a more capable ballistic missile than the Shahab-3, but later characterizing it as a space launch vehicle with no military applications. Tehran has also mentioned plans for a Shahab-5, strongly suggesting that it intends to develop even longer-range ballistic missiles in the near future. And Iran has displayed a mockup satellite and space launch vehicle, an SLV, suggesting it plans to develop an SLV to deliver Iranian satellites to orbit. However, Iran could convert an SLV into a ballistic missile by developing a reentry vehicle.

[Whereupon, at 11:33 a.m., the hearing was adjourned and a public meeting was conducted.]

Mr. LAUDER. In this context, cooperation between Tehran and Russian aerospace entities has been a matter of proliferation concerns since the mid-1990's. Iran is acquiring Russian technology which could significantly accelerate the pace of its ballistic missile development program. Assistance by Russian entities has helped Iran save years of development of Shahab-3, which was flight-tested in 1998 and twice again this year.

Russian assistance also is playing a crucial role in Iran's ability to develop more sophisticated and longer range missiles. Russian entities have helped the Iranian missile effort in areas such as training, testing, and components. These entities vary in size and cover a wide range of specialties. The scope of the assistance is il-

illustrated by the variety of organizations that have been the subject of U.S. trade restrictions. Such restrictions have been levied against Russia's Government-owned space technology marketing agency, Glavkosmos, the aerospace materials research institute, NIIGrafit, the guidance technology developer, Polyus, and several smaller and less prominent entities. Further trade actions have been imposed against two major entities, the Moscow Aviation Institute, and the Baltic State Technical University.

Mr. Chairman, in the interest of time I have skipped over a few points in my statement, but I have submitted it for the record. I will attempt to answer the committee's questions within the constraints imposed on us by the need to protect sensitive sources and methods, and we would be delighted to present committee members with a more detailed assessment of these issues in a closed setting, and our intelligence reporting and analysis also provides the underpinnings for the policy effort to stop the flow of weapons-related technology to Iran that Assistant Secretary Einhorn will address in his testimony.

[The prepared statement of Mr. Lauder follows:]

PREPARED STATEMENT OF JOHN A. LAUDER

Thank you Mr. Chairman for inviting me to testify on this important topic. Iran has ambitious development programs for missiles and weapons of mass destruction (WMD). It is seeking technologies related to missiles, as well as technology related to nuclear, chemical, and biological weapons, from a number of foreign sources. The development of these weapons in Iran, and the extent to which foreign assistance is advancing Iranian weapons programs, are among our toughest intelligence challenges and among our highest priorities.

Mr. Chairman, in my testimony today I will provide a summary of Russian assistance to Iran's weapons of mass destruction programs and its ballistic missile delivery systems. The Iranians regard these programs—and assistance to them—as among their highest state secrets and go to great lengths to hide them from us. As a result, our knowledge of these programs is based on extremely sensitive sources and methods. This precludes me from providing many details in open session. But I hope this summary will be of use to the Committee, and we will continue to keep the Committee informed of additional details in classified briefings.

NUCLEAR

Mr. Chairman, I would like to begin with a few comments on Russian aid to Iran's nuclear power and nuclear weapons program. The Intelligence Community judges that Iran is actively pursuing the acquisition of fissile material and the expertise and technology necessary to form the material into nuclear weapons. As part of this process, Iran is attempting to develop the capability to produce both plutonium and highly-enriched uranium.

As part of this effort, Iran is seeking nuclear-related equipment, material, and technical expertise from a variety of foreign sources, most notably in Russia. Tehran claims that it seeks foreign assistance to master nuclear technology for civilian research and nuclear energy programs. However, the expertise and technology gained—along with the contacts established—could be used to advance Iran's nuclear weapons effort.

- Work continues on the construction of a 1,000-megawatt nuclear power reactor at Bushehr that will be subject to International Atomic Energy Agency (IAEA) safeguards. This project will not directly support a weapons effort, but it affords Iran broad access to Russia's nuclear industry.
- Russian entities are interacting with Iranian nuclear research centers on a wide variety of activities beyond the Bushehr project. Many of these projects, ostensibly for civilian nuclear uses, have direct application to the production of weapons-grade fissile material.

The United States has levied trade restrictions against two Russian entities—NIKIET and Mendeleyev University—for providing nuclear assistance to Iran.

CHEMICAL

I would like to touch briefly on assistance by Russian entities to Iran that could contribute to Tehran's chemical warfare (CW) program. Iran launched its offensive CW program in the early 1980s in response to Baghdad's use of CW during the Iran-Iraq war. We believe the program remains active despite Tehran's decision to ratify the Chemical Weapons Convention (CWC). Iran has a large and growing CW production capacity and already has produced a number of CW agents, including nerve, blister, choking, and blood agents. We believe it possesses a stockpile of at least several hundred metric tons of weaponized and bulk agent.

Tehran's goals for its CW program for the past decade have been to expand its production capability and stockpile, reach self-sufficiency by acquiring the means to manufacture chemical production equipment and precursors, and diversify its CW arsenal by producing more sophisticated and lethal agents and munitions.

Numerous Russian entities have been providing Iran with dual-use industrial chemicals, equipment, and chemical production technology that could be diverted to Tehran's offensive CW program.

- In 1999, for example, Russian entities provided production technology, training, and expertise that Iran could use to create a more advanced and self-sufficient CW infrastructure.

BIOLOGICAL

I would like to now turn to assistance by Russian entities to Iran's biotechnical programs. Iran is pursuing both civilian biotech activities and a biological warfare (BW) program. Assistance by Russian entities to the former could further Iran's pursuit of biotechnology for military applications.

Iran's BW program was initiated in the 1980s during the Iran-Iraq war. The program is in the late stages of research and development, but we believe Iran already holds some stocks of BW agents and weapons. Tehran probably has investigated both toxins and live organisms as BW agents, and for BW dissemination could use many of the same delivery systems—such as artillery and aerial bombs—that it has in its CW inventory.

- Iran has the technical infrastructure to support a significant BW program. It conducts top-notch legitimate biomedical research at various institutes, which we suspect also provide support to the BW program.

Iran is seeking expertise and technology from Russia that could advance Tehran's biological warfare effort. Russia has several government-to-government agreements with Iran in a variety of scientific and technical fields.

- Because of the dual-use nature of much of this technology, Tehran can exploit these agreements to procure equipment and expertise that could be diverted to its BW effort.
- Iran's BW program could make rapid and significant advances if it has unfettered access to BW expertise resident in Russia.

MISSILE

I will now discuss Russian aid to Iran's ballistic missile program. Iran's ballistic missile program is one of the largest in the Middle East. Tehran already has deployed hundreds of short-range (150-500 km) ballistic missiles, covering most of Iraq and many strategic targets in the Persian Gulf. It is developing and may soon deploy the 1,300 km range Shahab-3 medium-range ballistic missile, which would allow Iran to reach Israel and most of Saudi Arabia and Turkey. Tehran probably has a small number of Shahab-3s available for use in a conflict; it has announced that production and deployment has begun, and it publicly displayed three Shahab-3s along with a mobile launcher and other ground support equipment.

Iran's public statements indicate that it plans to develop longer range delivery systems. Although Tehran stated that the Shahab-3 is Iran's last military missile, we are concerned that Iran will use future systems in a military role.

- Iran's Defense Minister announced the development of the Shahab-4, originally calling it a more capable ballistic missile than the Shahab-3, but later categorizing it as a space launch vehicle with no military applications.
- Tehran has also mentioned plans for a Shahab-5, strongly suggesting that it intends to develop even longer range ballistic missiles in the near future.
- Iran has displayed a mock-up satellite and space launch vehicle (SLV), suggesting it plans to develop an SLV to deliver Iranian satellites to orbit. How-

ever, Iran could convert an SLV into a ballistic missile by developing a reentry vehicle.

In this context, cooperation between Tehran and Russian aerospace entities has been a matter of proliferation concern since the mid-1990s. Iran is acquiring Russian technology which could significantly accelerate the pace of its ballistic missile development program.

- Assistance by Russian entities has helped Iran save years in its development of the Shahab-3, which was flight-tested in 1998 and twice again this year.
- Russian assistance also is playing a crucial role in Iran's ability to develop more sophisticated and longer-range missiles.

Russian entities have helped the Iranian missile effort in areas such as training, testing, and components. These entities vary in size and cover a wide range of specialties. The scope of assistance is illustrated by the variety of organizations that have been subjects of U.S. trade restrictions.

- Such restrictions have been levied against Russia's government-owned space-technology marketing agency Glavkosmos, the aerospace materials research institute NIIGrafit, the guidance technology developer Polyus, and several smaller and less prominent entities.
- Further, trade actions have been imposed against two major educational entities, the Moscow Aviation Institute and the Baltic State Technical University.

RUSSIAN OVERSIGHT

Finally, I would like to turn to the issue of Russian efforts to curb the transfers of WMD and missile technology to Iran. Beginning in January 1998, the Russian Government took a number of steps to increase its oversight of entities involved in dealings with Iran and other states of proliferation concern. In 1999, it passed a new export control law intended to strengthen restrictions on the export of weapons of mass destruction, missile systems, and related technologies.

- However, the government's weak enforcement of export control legislation has facilitated some Russian companies' efforts to circumvent export controls in the interest of financial gains.

Mr. Chairman, that concludes my prepared statement. I will attempt to answer the Committee's questions within the constraints imposed on us by the need to protect sensitive sources and methods. We would be delighted to present Committee Members with a more detailed assessment of Russian assistance to Iran's WMD and ballistic missile programs in a closed setting.

Our intelligence reporting and analysis also provides the underpinnings for policy efforts to stop the flow of weapons-related technology to Iran. Assistant Secretary Einhorn will address these efforts in his testimony.

Senator BROWNBACK. Thank you, Mr. Lauter. I appreciate that. Mr. Einhorn, we look forward to your testimony. What Mr. Lauter put forward is a very troubling set of expansion of proliferation of weapons of mass destruction that has been in that relationship between Russia and Iran. I hope you will enlighten us to how that is not occurring or is not going to occur in the future.

STATEMENT OF HON. ROBERT J. EINHORN, ASSISTANT SECRETARY OF STATE FOR NONPROLIFERATION, DEPARTMENT OF STATE, WASHINGTON, DC

Ambassador EINHORN. Thank you, Mr. Chairman and Senator Smith for giving me the opportunity to appear before the subcommittees this morning. I have a prepared statement that overlaps substantially with Mr. Lauter's statement in describing Iran's weapons of mass destruction and ballistic missile programs. With your permission, I would like to submit that prepared statement for the record.

Senator BROWNBACK. Absolutely.

Ambassador EINHORN. I will proceed to summarize the administration's policy response to this problem, but if you compare the

two statements you will see that we really do agree on all fundamentals as far as what Iran is up to in this field.

In view of the serious risks to U.S. interests posed by Iran's WMD and—

Senator BROWNBACK. Mr. Einhorn, if I could ask you to pull that microphone up a bit closer to you.

Mr. EINHORN. Sure.

Senator BROWNBACK. It is pretty directional and a lot of people cannot hear you very well.

Mr. EINHORN. Sure.

Senator BROWNBACK. Thank you.

Mr. EINHORN. In view of the serious risks to U.S. interests posed by Iran's WMD and missile programs, the administration has given a very high priority to impeding these programs, and we have sought to do so through a variety of means. We have strengthened the multilateral export control regimes, thereby denying Iran and other proliferators access to the world's best sources of sensitive technology and forcing them to resort to elaborate and uncertain procurement methods that can result in slowing the pace, driving up the costs, and reducing the quality of their acquisitions. With Iran actively looking for weak links in the chain of control, we have provided substantial assistance to countries that are potential targets of Iranian procurement efforts in order to help them bolster their national export control systems and their border security.

When we have received information about troublesome transactions involving Iran's weapons programs, we have been able on a number of occasions to intervene diplomatically and persuade the governments of supplying countries to take steps to halt a pending transfer.

To help secure sensitive materials and know-how at their source, we have provided large-scale support for Russia's efforts to protect, store, and account for its nuclear materials, and have funded civilian scientific work by over 20,000 former Soviet weapons specialists to reduce their incentives for assisting countries like Iran.

Impeding Iran's nonconventional procurement efforts has figured prominently in recent years in our bilateral relations with China, North Korea, and Russia. In 1997, China agreed to phaseout all of its nuclear cooperation with Iran, even cooperation carried out under International Atomic Energy Agency safeguards. We believe the Chinese have made good on this pledge.

In 1997, we imposed sanctions on seven Chinese entities for providing dual-use chemicals and chemical production equipment and production technology to Iran's chemical weapons program. Subsequently, Chinese authorities took steps to tighten their system of chemical controls, although enforcement remains uneven.

Our current efforts with China focus primarily on missile exports. We have held several rounds of talks this year aimed at encouraging Beijing to augment its missile-related export control system and prevent Chinese entities from transferring equipment and technology that contribute to Iranian missiles capable of delivering nuclear weapons. We have made progress, but more work remains.

Halting missile-related exports to Iran and other countries is a high priority of our engagement with North Korea. In our several rounds of missile talks with the North Koreans we have repeatedly

sought to gain their agreement to ban all missile exports, and we will continue to do so. We have made clear that continued missile exports would subject them to additional economic sanctions, and that such sanctions would place a major obstacle in the way of economic normalization between the United States and the DPRK. We have imposed missile sanctions on North Korea six times.

Assistance by Russian entities to Iran's missile and nuclear programs has been a persistent problem in U.S.-Russian relations for over half a decade. Both the President and the Vice President, as well as other senior administration officials, have engaged on this issue on an almost continuous basis. Every Presidential summit meeting and every meeting of the U.S.-Russian Binational Commission has placed these nonproliferation concerns at the top of the agenda.

In our bilateral engagement we have made clear that stopping highly sensitive cooperation with Iran would expand opportunities for mutually beneficial and potentially lucrative cooperation between the two countries, including in the areas of commercial space and nuclear energy, but we have also stressed that failure to solve the problem would inevitably create obstacles to such cooperation.

So far, we have used the administration's Executive order authorities to impose penalties on 10 Russian entities for assisting Iran's missile and nuclear programs. Our intensive efforts with the Russians over the last few years have produced some significant positive steps.

Russia passed a new export control law in 1999 providing for the first time legal authority to control the export of any item that could contribute to a program of proliferation concern. It has reorganized export control responsibilities within the Government to make the bureaucracy more effective in implementing Russia's laws and policies.

At U.S. urging, it has instituted internal compliance programs in key Russian entities and so far over 500 firms manufacturing items of proliferation concern have received training in their export control obligations.

It has established seven export control working groups with the United States in such areas as law enforcement, and dual use licensing, to help strengthen the Russian export control system. It has carried out investigations of problem cases we have brought to Russia's attention, and in a number of those cases it has halted Russia's cooperation with Iran, enabling us last April to announce our intention to lift U.S. penalties against two of those entities.

While we have imposed penalties on organizations engaged in sensitive cooperation with Iran, we have also made important headway by holding out benefits for responsible behavior. In this connection, our Russian partners in the international space station and in the major U.S.-Russian commercial space launch joint venture understand the value of their cooperation with us, and are on guard to avoid the kinds of interactions with countries of concern that could put that cooperation in jeopardy.

It is clear that key players in the Russian Government such as the Russian Aviation and Space Agency and the new Department of Export Controls of the Ministry of Economic Development and Trade see an important stake in stopping assistance to Iran's non-

conventional programs, and are working hard to get their arms around a very difficult problem.

However, enforcement of its export control laws and policies has been very uneven. While some Russian aerospace entities have severed their cooperation with Iran, other individuals and entities have been far too willing to take their place.

The situation is even worse in the nuclear area. Unlike in the aerospace field, where many of the entities assisting Iran have little relationship to the Russian Government, almost all nuclear cooperation with Iran is carried out by MINATOM, the Ministry of Atomic Energy, or one of its many subsidiaries and affiliates. We have made clear to the Russians that we will not go forward with collaboration on advanced nuclear power reactors or other new cooperation in the nuclear field until our concerns are resolved.

Clearly, many of the remaining problems involve shortcomings of the relatively new Russian system of export control. Even with greater resources and the best of intention, it would be hard for Moscow authorities to detect and stop all attempts to circumvent Russian controls, but equally clearly, part of the problem is a lack of determination.

We are convinced that if Russian leaders gave the matter sufficient priority, Iran's nuclear and missile procurement efforts in Russia could be stopped. We do not doubt that Russians, when they say their interests would be harmed at least as much as ours by Iran's acquisition of nuclear weapons deliverable by long-range nuclear—let me say that again.

We do not doubt the Russians when they say their interests would be harmed at least as much as ours by Iran's acquisition of these capabilities, but if the Russians believe that the nuclear and missile cooperation now underway will not actually contribute materially to and accelerate Iran's acquisition of such a capability, they are engaging in wishful or short-sighted thinking.

Recently, we have seen some encouraging signs. At their July meeting at the Okinawa G-8 summit President Putin assured President Clinton that he would take personal responsibility for ensuring that Russia's laws and commitments with respect to these nonproliferation issues are carried out faithfully. Subsequently, when provided with information that Russia's Yefremov Institute was providing Iran with laser isotope separation technology for enriching uranium, Russian authorities suspended the transaction pending a thorough investigation of its implications. We hope that this action will be a forerunner of concrete and decisive steps to halt assistance by Russian entities to missile and nuclear programs in Iran.

In conclusion, Mr. Chairman, impeding Iran's WMD and missile delivery systems will remain at the top of the U.S. national security agenda for sometime to come. We cannot predict the direction of political events in Tehran, but should Iranian authorities accept the U.S. offer of an official bilateral dialog, nonproliferation will be a key focus of the dialog.

We would seek in those discussions to persuade the Iranians that their legitimate security and other broad national interests would best be served by verifiably and reliably renouncing WMD and the long-range ballistic missiles that can carry them. In the meantime,

we have no alternative but to continue an active strategy of seeking to thwart Iranian efforts to procure the materials and technologies they need for their nonconventional programs.

We will use a variety of means to pursue that strategy, including strengthening multilateral regimes, carrying out energetic diplomatic efforts with key supplier governments and, when warranted, utilizing our legal and other authorities to penalize those responsible for assisting nonconventional programs of states of proliferation concern.

By the standards one must judge nonproliferation efforts, our policies with respect to Iran have been effective. They have succeeded in slowing and complicating Iran's programs and driving up their costs. They have closed off many of the world's best sources of advanced technology to Iranian procurement efforts and have forced Iran to rely on technologies less sophisticated and reliable than would otherwise be the case and, critically, we have bought additional time.

Despite the gains Iran has made, we do not consider it inevitable that Iran will acquire nuclear weapons deliverable by long-range missiles, but avoiding that highly destabilizing outcome will require the continued leadership of the United States and the concerted efforts of the international community, including the cooperation of Russia, China, and North Korea. We will consult closely with the committee as our efforts proceed.

Thank you, Mr. Chairman.

[The prepared statement of Assistant Secretary Einhorn follows:]

PREPARED STATEMENT OF HON. ROBERT J. EINHORN

Mr. Chairman, thank you for giving me this opportunity to discuss Iran's continuing efforts to acquire weapons of mass destruction and missile delivery systems, foreign assistance to those programs, and the status of U.S. efforts to halt them.

Today Iran is undergoing important political developments. The United States welcomed the Iranian public's clear call for greater freedom and democracy in recent parliamentary elections. We hope that such encouraging developments are a sign of a transition to a more open and democratic society.

However, as in any diverse society, there are many currents swirling about in Iran. Some are driving the country forward; others are holding it back. Despite the momentum toward democracy, freedom, and openness, most of the elements of Tehran's foreign policy about which we are most concerned—including the acquisition of destabilizing weapons systems—have not improved.

Indeed, Iran's pursuit of weapons of mass destruction and ballistic missile delivery systems continues unabated, and has even accelerated in the last few years. Despite its formal adherence to international arms control and nonproliferation treaties, Iran maintains active programs to acquire nuclear, chemical and biological weapons as well as the long-range missiles to deliver them. Iran is seeking aggressively to acquire equipment, material, and technology from abroad in an effort to establish the capability to produce non-conventional weapons indigenously and thereby to insulate those weapons programs from outside pressures.

Even if democracy succeeds in Iran, there is little to suggest that its quest for weapons of mass destruction and missile delivery systems will end. As long as Iran believes that its arch-rival Iraq is pursuing WMD, that U.S. forces in the region constitute a major threat, and that its own non-conventional programs bolster its aspirations for influence in the Gulf region and leadership in the Islamic world, there will be pressures in Tehran, whoever is in power, to persist on the dangerous course on which it is now headed. We will watch closely for any changes in Iranian proliferation policies as Iran's domestic evolution continues. But so far we have seen none.

Iran's WMD and missile programs constitute a serious threat to the region and to U.S. interests more broadly. Impeding those programs has therefore been a top priority of U.S. policy. It is a subject we would like to take up with Iranian officials directly. But in the absence so far of a willingness in Tehran to establish an authori-

tative U.S.-Iran dialogue, we have had to rely almost exclusively on a strategy of seeking to deny Iran the material and technological wherewithal to acquire WMD and missiles. We have had a few public—and a number of private—successes in that effort. But as with any nonproliferation effort focused primarily on denial of technology, we have managed to slow Iran's programs, but we have not stopped them.

IRAN'S BALLISTIC MISSILE PROGRAM

Iran has one of the developing world's most active and ambitious ballistic missile programs. It is important to recall, in this regard, that Iran was the first victim of Iraq's development of missiles and chemical weapons. But Iran's ballistic missile programs have long since gone beyond responding to Iraq, and now threaten much of the Middle East and soon could threaten locations more distant.

Iran already has deployed hundreds of SCUD missiles and can now produce SCUDs indigenously. Not stopping at short-range missiles, however, Iran has conducted three tests of the 1,300 kilometer-range Shahab-3 missile, once in 1998 and twice this year, including just last month. As National Intelligence Officer for Strategic and Nuclear Programs Robert Walpole testified just two weeks ago, "Tehran probably has a small number of Shahab-3s available for use in a conflict; it has announced that production and deployment have begun." In addition to the medium-range Shahab-3, Iran is working on longer-range missiles. Its defense minister has spoken of Shahab-4 and -5, claiming those rocket systems would be used solely as peaceful, space-launch vehicles (SLVs). But given that any SLV has inherent military missile capability and can relatively easily be adapted to that role, few knowledgeable observers take those claims at face value.

Iran's acquisition of long-range ballistic missile delivery capability, coupled with its continued pursuit of nuclear weapons and other weapons of mass destruction, poses a significant threat to U.S. forces and friends in the region, and to regional stability generally.

Iran's ballistic missile program is heavily dependent on assistance from other countries. North Korea has been a major supplier to Iran, transferring SCUDs, SCUD production technology, and No Dongs. While we do not believe Russia has transferred long-range missiles to Iran, we judge that wide-ranging assistance from Russian aerospace organizations and individuals has enabled Iran to make the Shahab-3 an improved version of the No Dong as well as to make substantial headway on longer-range missile systems. Chinese transfers to Iran's missile programs have largely been intended for tactical systems below the Missile Technology Control Regime control level or have been dual-use items not specifically covered on international control lists. But as we have told the Chinese many times, such transfers can make—and indeed have made—significant contributions to Iran's long-range missile programs.

IRAN'S NUCLEAR PROGRAM

We remain convinced that Iran maintains an active nuclear weapons development program, despite its status as an NPT party. Among the persistent indicators that Iran is pursuing a nuclear weapons development program is the fact that Iran is attempting to obtain capabilities to produce both highly enriched uranium and plutonium—the critical materials for a nuclear weapon. Neither of these capabilities is necessary to meet Iran's declared desire to have a civil nuclear power program to generate electricity, which is itself suspicious in light of Iran's abundant oil resources.

For the time being, Iran's nuclear program remains heavily dependent on external sources of supply. Because of this, the United States has played the leading role in developing and maintaining a broad international consensus against assisting Iran's foreign procurement efforts. We deny Iran access to U.S. nuclear technology and material, and all major Western suppliers have agreed not to provide nuclear technology to Iran.

A number of supplier states have abandoned potentially lucrative sales to Iran's nuclear program. In 1997 China terminated work on a uranium conversion facility in Iran and agreed not to engage in any new nuclear cooperation with Iran after completing two small projects that posed no direct proliferation concern. As a result of efforts by Vice President Gore and Secretary Albright, Ukraine likewise took a major step when it determined that it would not supply electricity-generating turbines originally contracted for by a Russian firm and destined for the new Bushehr nuclear power plant in Iran. The Czech Government also recently made a decision not to supply components for the turbine hall of this plant.

Russia remains the one significant exception to this virtual embargo on nuclear cooperation with Iran. The most visible nuclear cooperation between the two coun-

tries is Russia's construction of a 1000-megawatt nuclear power reactor at Bushehr, Iran. We have opposed this project, not because we believe such a light-water reactor under International Atomic Energy Agency safeguards itself poses a serious proliferation threat, but because of our concern that the Bushehr project would be used by Iran as a cover for maintaining wide-ranging contacts with Russia nuclear entities and for engaging in more sensitive forms of cooperation with more direct applicability to a nuclear weapons program.

While refusing to halt the power reactor sale, the Russians have argued that they are just as opposed as we are to an Iranian nuclear weapons capability. At the highest levels, they committed to limiting their nuclear cooperation with Iran to the Bushehr reactor project during the period of its construction.

Despite these repeated assurances, we are aware that Russian entities—most of them subordinate to MINATOM, the Russian Ministry of Atomic Energy—have engaged in extensive cooperation with Iranian nuclear research centers that is outside the bounds of the Bushehr project. Much of this assistance involves technologies with direct application to the production of weapons-grade fissile materials, including research reactors, heavy-water production technology, and laser isotope separation technology for enriching uranium. Russian assistance to Iran's nuclear program has accelerated in the last few years and could significantly shorten the time Iran would need to acquire weapons-usable fissile material.

CHEMICAL AND BIOLOGICAL WEAPONS

Iran's chemical weapons (CW) program is one of the largest in the developing world. Iran began its offensive program during the Iran-Iraq war in response to Iraq's use of CW. By 1987 Iran was able to deliver limited quantities of blister (mustard) and blood (cyanide) agents against Iraqi troops using artillery shells. Since then Iran's CW production capability has grown and become more sophisticated. It has already produced a number of CW agents, including nerve, blister, choking and blood agents. Despite its 1997 ratification of the CWC, we believe Iran's CW program continues and that it possesses a substantial stockpile of weaponized and bulk agent.

Throughout the life of its CW program, Iran has sought the ability to produce indigenously more sophisticated and lethal agents. This trend toward self-sufficiency is worrisome, since it means that Iran could eventually become a supplier of CW-related materials to other nations.

Over the past several years, Iran's procurement efforts have dwindled in countries of the Australia Group, the multilateral export control regime responsible for chemical and biological exports, as that Group's controls have become more effective. Instead, Iran has concentrated on suppliers in countries outside of the Australia Group. As Iran moves to suppliers outside the major industrialized countries and seeks less specialized (and hence less strictly controlled) items, our ability to stop Iran's CW-related procurement efforts has also decreased.

Iran has been in the vanguard of efforts by some countries to weaken multilateral export controls, especially on dual-use commodities. It has instigated attempts to delegitimize and even to abolish the nonproliferation export control regimes. The United States has worked closely with our partners in those regimes to rebut the Iranian arguments and to strengthen those regimes in the face of these efforts to weaken them.

We believe that Iran also has an offensive biological weapons program at least since the Iran-Iraq War, notwithstanding the fact that it has been a party to the Biological Weapons Convention since August 1973. The pace of Iran's biological weapons program probably has increased since the 1995 revelations about the extent of Iraq's biological weapons program.

While we assess that the Iranian BW program is largely still in the research and development stage, we believe Iran already holds some stocks of biological agents and toxins. It has considerable expertise in the infrastructure needed to produce basic BW agents, and can make some of the hardware needed to manufacture those agents. Iran conducts top-notch legitimate biomedical research at various institutes, which we suspect also provide support to the BW program. It appears that Iran is actively seeking to acquire materials, equipment and expertise from foreign suppliers—primarily from entities in Russia and Western Europe.

U.S. POLICY RESPONSES

In view of the serious risks to U.S. interests posed by Iran's WMD and missile programs, we have given high priority to impeding those programs and have sought to do so through a wide variety of means. We have worked to strengthen and tighten the multilateral export control regimes, thereby denying Iran and other

proliferators access to most of the world's best sources of sensitive technology and forcing them to resort to elaborate and uncertain covert procurement methods that can result in slowing the pace, driving up the costs, and reducing the quality of their acquisitions. With Iran actively looking for weak links in the chain of control, we have provided substantial assistance to countries that are potential targets of Iranian procurement efforts in order to help them bolster their national export control systems and their border security. When we have received information about troublesome transactions involving Iran's weapons programs, we have been able on a number of occasions to intervene diplomatically and persuade the governments of supplying countries to step in and halt a pending transfer.

To help secure sensitive materials and know-how at their source, we have provided large-scale support for Russia's efforts to protect, store, and account for its nuclear materials and have funded civilian scientific work by over 20,000 former Soviet weapons specialists to reduce their incentives for assisting countries like Iran. We have also sought to strengthen international arms control arrangements to promote our nonproliferation goals—by supporting the International Atomic Energy Agency's strengthened safeguards system, promoting an effective Chemical Weapons Convention inspection system, and pressing for a protocol to enhance confidence in compliance with the Biological Weapons Convention.

Impeding Iranian non-conventional procurement efforts has figured prominently in recent years in our bilateral relations with China, North Korea, and Russia. As noted earlier, China agreed to phase out all of its nuclear cooperation with Iran, even cooperation carried out under IAEA safeguards. We believe the Chinese have made good on this pledge. In 1997 we imposed sanctions on seven Chinese entities for providing dual-use chemicals and chemical production equipment and technology to Iran's chemical weapons program. Subsequently, Chinese authorities took steps to tighten their system of chemical controls, although enforcement remains uneven. Our current efforts with China focus primarily on missile exports. We have held several rounds of talks this year aimed at encouraging Beijing to augment its missile-related export control system and prevent Chinese entities from transferring equipment and technology that contribute to Iranian missiles capable of delivering nuclear weapons. We have made progress, but more work remains.

Halting missile-related exports, to Iran and other countries, is a high priority of our engagement with North Korea. In our several rounds of missile talks with the North Koreans, we have repeatedly sought to gain its agreement to ban all missile exports and we will continue to do so. We have also made clear that continued missile exports would subject them to additional economic sanctions (which we have imposed six times on the DPRK, three for transfers to Iran), and that such sanctions would place a major obstacle in the way of economic normalization between the U.S. and DPRK.

Assistance by Russian entities to Iran's missile and nuclear programs has been a persistent problem in U.S.-Russian relations for over half a decade. Both the President and the Vice President, as well as the Secretaries of State, Defense, and Energy, and numerous other senior Administration officials, have engaged on this issue on an almost continuous basis. Every Presidential Summit meeting, and every meeting of the U.S.-Russian Bi-national Commission, as well as numerous letters, telephone calls, and meetings in between, has placed these nonproliferation concerns at the top of the agenda. The Vice President, in particular, using the institutional machinery afforded by the Bi-national Commission, has played a central role in pursuing such nonproliferation goals as fissile material security, the purchase of high enriched uranium, disposition of plutonium, and the destruction of chemical weapons—all of which are crucial to denying Iran and other states of concern access to these WMD-related materials. These efforts began in the very first year of the Administration, when the Commercial Space Launch Agreement was signed by the Vice President and the Russian Prime Minister as an incentive to Russian aerospace entities to forgo dangerous missile proliferation.

In our bilateral engagement, we have stressed the high stakes involved in resolving the Russia-Iran proliferation issue, both for the stability of the Middle East and the world at large and for the bilateral relationship. We have made clear that stopping highly sensitive cooperation with Iran would expand opportunities for mutually beneficial and potentially lucrative cooperation between the two countries, including in the areas of commercial space and nuclear energy. But we have also stressed that failure to solve the problem would inevitably create obstacles to such cooperation. So far we have used the Administration's executive authority to impose penalties on 10 Russian entities for assisting Iran's nuclear or missile programs.

Our intensive efforts with the Russians over the last few years have produced some significant positive steps. We are beginning to see the emergence of a more effective Russian effort at export control. Russia passed a new export control law

in 1999 providing legal authority to control the export of any item that could contribute to a program of proliferation concern. It has reorganized export control responsibilities within the government to make the bureaucracy more effective in implementing Russia's laws and policies. At U.S. urging, it has instituted internal compliance programs in key Russian entities, and so far over 500 firms manufacturing items of proliferation concern have received training in their export control obligations. It has established seven export control working groups with the U.S. in such areas as law enforcement and dual-use licensing to help strengthen the Russian system. It has carried out investigations of problem cases we have brought to its attention and, in a number of those cases, halted Russian entities' cooperation with Iran, enabling us last April to announce our intention to lift U.S. penalties against two of them.

While we have imposed penalties on organizations engaged in sensitive cooperation with Iran, we have also made important headway by holding out benefits for responsible behavior. In this connection, we have used the commercial space launch quota as an incentive to encourage important changes in Russia's legal and regulatory environment, and to make improvements in its export control system and practices. Moreover, our Russian partners in the International Space Station and in the major U.S.-Russian commercial space launch joint venture well understand the value of their profitable cooperation with us, and they are on guard to avoid the kind of interactions with countries of concern that could put that cooperation in jeopardy. It is clear that key players in the Russian government, such as the Russian Aviation and Space Agency and the new Department of Export Controls of the Ministry of Economic Development and Trade, see an important stake in stopping assistance to Iran's non-conventional programs and are working hard to get their arms around a very difficult challenge.

However, Russian enforcement of its export control laws and policies has been very uneven. While some Russian aerospace entities have severed their cooperation with Iran, other individuals and entities have been far too willing to take their place. The situation is even worse in the nuclear area. Unlike in the aerospace field, where many of the entities assisting Iran have little relationship to the Russian government, almost all nuclear cooperation with Iran is carried out by MINATOM or one of its many subsidiaries and affiliates. We have made clear to the Russians that we will not go forward with collaboration on advanced power reactors or other new cooperation in the nuclear area until our concerns are resolved.

Clearly, many of the remaining problems involve shortcomings of the relatively new Russian system of export control. Even with greater resources and the best of intentions, it would be hard for Moscow authorities to detect and stop all attempts to circumvent Russian controls. But equally clearly, part of the problem is a lack of determination in Moscow. We are convinced that, if Russia's leaders gave the matter sufficient priority, Iran's nuclear and missile procurement efforts in Russia could be stopped.

Why does Moscow not seem to give the matter the priority we do? The answer is complicated. Part of the explanation seems to be that Russian entities that no longer receive adequate budgetary support from the central government have strong incentives to export. The number of Russian entities with technical experts out of work is overwhelming, and they will do virtually anything to stay afloat. Russia also believes it has strategic reasons for not wanting to jeopardize bilateral relations with Iran. Moreover, the Russians tend to take a more narrow view of their non-proliferation responsibilities than we do and are more inclined to support transactions we would regard as too risky, especially if they do not violate any Russian international treaty obligations.

Whatever the mix of motives for a less-than-fully-resolute approach to the challenge of stopping dangerous Russian interactions with Iran, we do not doubt the Russians when they say their interests would be harmed at least as much as ours by Iran's acquisition of nuclear weapons deliverable by long-range missiles. But if the Russians believe that the nuclear and missile cooperation now underway will not actually contribute materially to, and accelerate, Iran's acquiring such a capability, they are engaging in wishful or shortsighted thinking.

Recently we have seen some encouraging signs. At their July meeting at the Okinawa G8 summit, President Putin assured President Clinton that he would take personal responsibility for ensuring that Russia's laws and commitments with respect to these nonproliferation matters are faithfully carried out. Subsequently, when provided with information that Russia's Yefremov Institute was providing Iran with laser isotope separation technology for enriching uranium, Russian authorities suspended the transaction pending a thorough investigation of its implications. We hope that this action will be a forerunner of concrete and decisive steps to halt assistance by Russian entities to missile and nuclear programs in Iran.

IRAN NONPROLIFERATION ACT

Recently Congress gave us new legislation intended to impede Iran's WMD and missile programs—the Iran Nonproliferation Act of 2000. The Act establishes new criteria—legal standards and procedures—for evaluating activities of proliferation concern and imposing nonproliferation sanctions. The Administration has made significant progress toward completing the review of the intelligence material necessary to make the report to Congress required by the Act. However, we have found that the information that must be reviewed in order to make the required report is considerably more detailed and voluminous than was contemplated when the bill was passed, and it has therefore been impossible for us to submit our initial report by the dates specified in the Act. A more detailed explanation of where we stand on this matter has already been conveyed to the Committee.

CONCLUSION

In conclusion, impeding Iran's WMD and missile delivery systems will remain at the top of the U.S. national security agenda for some time to come. We cannot predict the direction political events in Tehran will take, but should Iranian authorities accept the U.S. offer of an official bilateral dialogue, nonproliferation will be a key focus. We would seek in those discussions to persuade the Iranians that their legitimate security and other broad national interests would best be served by verifiably and reliably renouncing WMD and the long-range ballistic missiles that can deliver them.

In the meantime, we have no alternative but to continue an active strategy of seeking to thwart Iranian efforts to procure the material and technologies they need for their nonconventional programs. We will use a variety of means to pursue that strategy, including strengthening multilateral regimes, carrying out energetic diplomatic efforts with key supplier governments, and, when warranted, utilizing our legal and other authorities to penalize those responsible for assisting the non-conventional programs of states of proliferation concern.

By the standards one must judge nonproliferation efforts, our policies with respect to Iran have been effective. They have succeeded in slowing and complicating Iran's programs and driving up their costs. They have closed off many of the world's best sources of advanced technology to Iranian procurement efforts, and forced Iran to rely on technologies less sophisticated and reliable than would otherwise be the case. And critically, we have bought additional time. Despite the gains Iran has made, we do not consider it inevitable that Iran will acquire nuclear weapons deliverable by long-range missiles. But avoiding that highly destabilizing outcome will require the continued leadership of the United States and the concerted efforts of the international community, including the cooperation of Russia, China, and North Korea. We will consult closely with this Committee as our efforts proceed.

Senator BROWNBACK. Thank you, Mr. Einhorn, although I come to the exact opposite conclusion that you do, that our efforts have not been very successful at all in impeding their development of weapons of mass destruction and proliferation that have taken place in Iran, and particularly in regards to Russia and the Russian assistance that has been provided that we heard from Mr. Lauter's testimony what has occurred with Iran, so I think our standards of success and measurements of success are substantially different here.

Mr. Einhorn, the so-called Gore-McCain act calls for sanctions on anyone who assists Iran in acquiring destabilizing numbers and types of advanced conventional weapons. The Foreign Assistance Act of 1961 also calls for sanctions on countries that transfer weaponry to terrorist nations.

Now, since 1992, Russia has supplied a large number of conventional armaments to Iran. Why have neither of these sanction laws been applied to any aspect of this enormous volume of trade?

Mr. EINHORN. Mr. Chairman, we have, in fact, been very active in implementing both of the laws you mentioned, including the law

that deals with provision of lethal military equipment to state sponsors of terrorism.

As the committee is aware, we have pursued these questions actively with the governments concerned, the supplier governments concerned, and in a number of cases imposed penalties on the entities responsible for these transactions, and in the process have been able to persuade supplier governments to adopt new controls that have limited further future shipments of this lethal military equipment, so we have taken advantage of the law and used it as a tool to try to reduce lethal military equipment sales to these state sponsors of terrorism.

Senator BROWNBACk. Have you implemented that law on Russia?

Mr. EINHORN. We have, in fact, done so. As the committee is aware, I believe, we have invoked that law with respect to Russian transfers of conventional equipment to Syria and a number of the—

Senator BROWNBACk. Have you done it toward Iran?

Mr. EINHORN. I will have to check the record on Iran, but there have been a number of cases, not necessarily involving Russia, in addition to the Syria case I mentioned before, where we have utilized the law to extract new commitments in the area of non-proliferation.

Senator BROWNBACk. I believe the record will show that you have used it on Syria, but you have not used it on Iran.

Mr. EINHORN. If domestic United States law requires the imposition of sanctions, do you think that the executive branch can nevertheless avoid imposing sanctions if it has concluded an agreement with a foreign nation to do so?

Mr. EINHORN. Well, it depends on the particulars of the sanctions laws. The purpose of the sanction laws is a good purpose. It is to change behavior. It is to encourage governments such as Russia, such as North Korea, such as China, to practice responsible export behavior. We have utilized the law for that purpose.

Sometimes it has involved actually imposing the sanctions, but often the threat of the imposition of sanctions has been as effective or more effective than the actual imposition. We have used the leverage that the law has provided to encourage more responsible behavior, certainly in the case of China and in the case of Russia.

Senator BROWNBACk. If domestic law required imposition of sanctions for an action, would it be appropriate for the executive branch to commit to a foreign nation to avoid such penalties even if the foreign nation made commitments of its own?

Mr. EINHORN. Well, let us take the Iran Nonproliferation Act, for example. Here, there are cases where, if an entity has provided reportable items to Iran, there is an obligation by the administration to report that fact to the Congress, but if it is determined that that transfer was made under the guidelines of multilateral export control regimes, duly authorized by a government that is a participant in those regimes, then that transfer is exempt from any penalties. That is an element of the Iran Nonproliferation Act. So there is a case where the administration is not compelled to impose sanctions under the law.

Senator BROWNBACk. Well, I am not sure I have understood your answer completely, and I think it can come with a yes or no. Let

me try this again. If domestic law required impositions of sanctions for an action, would it be appropriate—appropriate—for the executive branch to commit to a foreign nation to avoid such penalties, even if the foreign nation made commitments of its own?

So in other words, we have a domestic law that requires the imposition of a sanction, and then the administration negotiates a separate agreement that they think, well, OK, maybe this is the way we want to go, regardless of what the law says. Would that be appropriate?

Mr. EINHORN. If the law requires the imposition of sanctions, then sanctions must be imposed, but if the law provides, for example, a waiver authority that suggests that the penalties may be waived if in the administration's judgment it can extract new commitments from a foreign government, then that is entirely permissible, and that in fact has been done on a number of occasions, but it would depend upon the law.

Senator BROWNBAC. All right, but if it does not have the waiver authority, it would not be appropriate.

Mr. EINHORN. No, clearly, you know, one has to implement the law, whatever it says.

Senator BROWNBAC. Is Russia abiding by its 1995 commitment not to transfer conventional arms to Iran?

Mr. EINHORN. The commitment that Russia made at the time was not to engage in new conventional arms contracts with Iran. It agreed that it would complete shipments under existing contracts in a limited period of time.

We are having discussions with the Russian Government now about the length of time it would need to fulfill its existing contracts, but in terms of the specifics of current transactions, it would be very difficult to comment in detail in an open session like this.

Senator BROWNBAC. So if I am understanding you, you are saying that it agreed to make shipments of weapons, and it is needing more than 5 years to get this done, and you are letting them go with that, saying OK, you can go ahead and keep shipping these because you are deeming these part of some agreement prior to 1995?

Mr. EINHORN. Mr. Chairman, I am not saying we are letting these go. What I am saying is that we have sought from the Russian Government information about the shipments they would like to continue to make under existing contracts, that they have not been able to make by the time specified in our understanding.

Senator BROWNBAC. And you will not comment in open session as to whether there are additional sales that are taking place that were not committed to prior to 1995?

Mr. EINHORN. I think it is best to deal with that issue in closed session, and I would be happy to do that.

Senator BROWNBAC. I hope you are pushing the Russians quite hard on the issue. Five years would seem to be a sufficient period of time for them to complete transactions. Now, I do not know the nature of which these you are commenting about.

And Mr. Einhorn, my whole problem here is, it seems as if from what Mr. Lauder described there is an aggressive development program continuing to take place in Iran with Russian-supplied technology, information, and then we also have conventional areas, and

the administration is seemingly looking the other way in spite of a very clear desire by the Congress, laws that have been signed, reports that are required, for you to keep the Congress informed, that the Congress has stated this is not the will of the people, and that you have seemed to conclude your own sidebar agreements and the development continues to take place, with alarming speed and progress, alarming.

That is not a satisfactory situation, certainly from Congress' perspective and, more importantly, from the United States' overall security perspective, and in dealing with a country such as Iran. There are an alarming set of factors that are lining up here that lead to quite a troubling conclusion.

Mr. EINHORN. Mr. Chairman, I would agree with you that the situation with respect to Iranian procurement efforts in Russia is not satisfactory. The Russians know our frustration and disappointment about their response, but I would take issue with your characterization of the administration looking the other way. We have faced this issue quite squarely, and this has been a subject of continuing engagement between us and the Russians, and we have made some progress.

I have mentioned some of the elements of progress in my statement earlier. The Russians have come quite a distance in setting up an export control system. We have concrete evidence that entities that had been engaged in missile cooperation with Iran have stopped their cooperation. We see signs of improvement, but the record of enforcement is spotty, and it is uneven. It is not satisfactory as far as we are concerned, and we will continue to pursue it.

On the nuclear side, the situation is even worse, and we have to work at that in a very persistent way to make sure that Russian assistance to Iran's nuclear program is stopped, but in terms of the bottom line, I think it is important to step back and take a look at some of these Iranian programs.

Iran has been seeking nuclear weapons for quite a long time. They have worked at it very, very aggressively. We have succeeded, the United States has succeeded in dissuading all nuclear suppliers other than Russia from continuing to provide nuclear assistance to Iran, every one, and we have had important successes, whether it is with China, or Ukraine, or I can go on and on and on, but it is only Russia that is continuing to do that, and we have to work with Russia until they are prepared to stop all nuclear cooperation with Iran.

In the missile area also, we have been very aggressive in trying to clamp down. Using the missile technology control regime, it has forced Iran to turn to Korea, with less sophisticated technology than it could otherwise get.

What the Shahab-3 is, it is a No Dong, which has been improved with the addition of Russian technology, but this is not the missile that Iran would have today if it were not for U.S. efforts. Without U.S. efforts, Iran would be much further along in its nuclear weapons program. It might even have nuclear weapons today, and it would be much further along in its missile program. We would not be talking about basically an improved No Dong that could go medium ranges. We would be talking much more reliable and sophisti-

cated missiles. U.S. efforts really have prevented those developments from occurring.

Senator BROWNBAC. And without Russian assistance the Iranians would not be nearly as far along as where they are today, and those were things that are specifically the concern of laws that have been passed by the Congress and signed by the administration, and then the negotiations between Vice President Gore and Chernomyrdin.

I think this is not satisfactory, particularly as regards the topic of this hearing, Russian assistance to the Ukrainians, which is where we are having the most problem, and I think some of the least progress taking place.

Mr. LAUTER, one final question and then I am going to turn the podium over to Mr. Smith. Some of the DCI's most recent section 721 report states that Russia, "remains an important source of conventional weapons and spare parts for Iran." That report covered activities through December 31, 1999. During this year, has Russia engaged in any conventional arms-related transfers to Iran?

Mr. LAUTER. Russian officials stated publicly earlier this year that Russia continues to transfer conventional arms to Iran under previously signed contracts, and that statement is consistent with our information.

Senator BROWNBAC. Can you be any more specific of what transfers have taken place this year?

Mr. LAUTER. I do not think I have any detailed unclassified figures that I can give you right now on that. I would be happy to provide that later, certainly in a classified forum for the committee. I do not think I have any figures I can pass over today.

Senator BROWNBAC. Senator Smith.

Senator SMITH. John, I know that you have done some work on the Yugoslavian situation. I have just been handed a note that says the Serbian opposition has stormed the parliament building and reportedly has taken control of the state media. Fires are raging. Milosevic is nowhere to be seen, and general chaos is underway—unrelated subject.

Bob, you mention the sanctions that the U.S. Government has imposed on specific Russian companies and firms for sharing technology with Iran. Do you believe that these companies or entities acted independently, or without the knowledge or consent of the Russian Government in the first place?

Mr. EINHORN. Senator Smith, I think it varies from case to case. As I pointed out earlier, most of the nuclear assistance being provided by Russia to Iran is coming from subsidiaries, affiliates of the Ministry of Atomic Energy in Russia, so I think it would be hard to imagine that Russian Government officials, and officials in the nuclear establishment, were not at least knowledgeable of some of these interactions.

Senator SMITH. If this is contrary to Russia's own national security interests, what was the motive? Was it hard currency?

Mr. EINHORN. That is an important component of it. What has happened, Senator, is that Russian entities are no longer receiving the kind of budgetary support from the central government that they used to, and as a result they are pretty hard up, and they are looking for ways of staying in business, and so some of them have

very strong incentives to export equipment, know-how, and so forth, so I think economic explanations are a very important part of the problem.

Another explanation is that the Russian export control system is still in its early stage. It is not fully effective, especially at the enforcement end. It needs a lot more work before it can effectively police Russian nuclear and missile-related exports.

Senator SMITH. You mentioned Mr. Putin's promises to President Clinton. Have you seen any results from those promises? Is, in fact, his administration doing a better job? Are they getting—do they have control of their government? Do they now have the cash? With higher oil prices he's consolidating his power and the ability to actually protect their own national interest.

Mr. EINHORN. Senator, I think it is probably too early to judge whether the Putin regime will be more effective in this area than its predecessors. There are some encouraging signs, his statement to President Clinton in Okinawa that he is going to take personal responsibility for these matters, also the decision by the Russian Government to suspend this contract Yefremov Institute and Iran on providing laser isotope separation technology to Iran. They say they will suspend that while they conduct a thorough investigation of the implications of that transfer.

Senator SMITH. And the whole point of that is to enhance the yield of a nuclear bomb.

Mr. EINHORN. The laser isotope separation technology is a technique for enriching uranium to weapons grade. That is what we believe the equipment and technology was intended for.

Senator SMITH. Is the administration going to certify to Congress that no entities subordinate to the Russian Space Agency are providing missile systems to Iran?

Mr. EINHORN. Under the Iran Nonproliferation Act, as you know, Senator, we will be providing a report to the Congress that provides information on entities that provide certain transfers to Iran. We regret that we are not in a position to provide the report at this stage. We have promised to work toward December 1 in order to get you that information.

But on the specific question you asked me, whether we feel we can certify that all of the subsidiaries of the Russian Space Agency have not engaged in missile-related cooperation with Iran, I doubt very much we are going to be able to make that assertion. In fact, I feel confident that we will have to report to you that a number of the entities subordinate to the Russian Aviation Space Agency have in fact provided support for Iran's missile program, and we will have to act, then, under the law.

Senator SMITH. And the law requires that you then begin withholding funds for the purpose of constructing the international space station, does it not?

Mr. EINHORN. The law has provisions regarding extraordinary payments to the international space station project, that is true. There are certain special provisions affecting items such as support for crew safety, for example, which have to be dealt with, and we will meet the requirements of the law in dealing with that question.

Senator SMITH. Clearly, the State of Israel has reason to be alarmed at missiles being paraded in the streets of Iran that say, "Israel should be wiped off the map." What other states in the Middle East are likely to bear the brunt of an Iranian missile?

Mr. EINHORN. Well, I think one has to look back at the Iran-Iraq war of the 1980's to recognize that the critical rivalry in that part of the world is between Iraq and Iran. I believe that is the main reason, I mean, the concern about a potential future threat from Iraq that motivates Iran to want to have missiles capable of delivering these WMD capabilities, but there are other countries in the region that are concerned about Iranian intentions.

There are countries on the southern shore of the Persian Gulf who are concerned about Iran's intentions and about Iran's acquisition of WMD and missiles, and we consult with them quite frequently, and there is concern in the gulf and, as you mentioned, you know, Israel is concerned as well about these developments.

Senator SMITH. When you think back to the bloody and duration of the Iran-Iraq war, had these been available then they would likely have been used, would they not have? I mean, they used chemical weapons on each other.

Mr. EINHORN. Yes. I mean, missiles were used. Iraq had missiles at the time, and used them. Iraq used chemical weapons. There was some small response by Iran at the time, but Iran was not heavily into the chemical weapons business then, but I think that is right, if these capabilities had been further advanced at that time, there would have been a real threat that they would have been employed on a much larger scale.

Senator BROWNBACK. Mr. Lauter, some have suggested that Iran is changing because of so-called moderates who are being elected to office. How are decisions made in Tehran regarding Iran's WMD program? Are they made by hardline clerics, or by elected government officials?

Mr. LAUTER. I think, Senator, when we look at the institutions in Iran that are most involved in the process of weapons of mass destruction and missiles, those are probably institutions that are more dominated by the conservatives. That said, we assess that Iranian political factions across the board are united largely in their support for Iran's weapons of mass destruction and ballistic missile programs. These programs seem to be viewed across the political spectrum as an integral part of Iranian national security, and part of Iran's right of self-defense.

Senator BROWNBACK. So in your view has President Khatemi moderated his country's interests in obtaining these ballistic missiles, or is it really just generally felt by the Iranian people that they need these for their own defense?

Mr. LAUTER. I think in our sense, in looking at what has occurred and at President Khatemi's statements that he has not appeared to slow down the pace of the ballistic missile program. Since he has taken office we have actually witnessed those three tests of the Shahab-3 that we mentioned earlier, and he himself has been public in his praise of the accomplishment of the 1998 test.

Senator BROWNBACK. Gentlemen, I believe that concludes the questions, and we thank you very much for your participation.

Should other colleagues have questions, we will leave the record open for a period of time, and we would appreciate response should questions be put to you. Again, we thank you, and all who have attended here today, and this public meeting is adjourned.

[Whereupon, the public meeting was adjourned.]

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

THE AMERICAN JEWISH COMMITTEE,
OFFICE OF GOVERNMENT AND INTERNATIONAL AFFAIRS,
1156 FIFTEENTH STREET, NW,
Washington, DC, October 3, 2000.

The Honorable GORDON SMITH
*Chairman, Subcommittee on European Affairs,
Committee on Foreign Relations,
U.S. Senate, Washington, DC.*

DEAR CHAIRMAN SMITH:

On behalf of the American Jewish Committee, I am writing to applaud you and Chairman Brownback of the Subcommittee on Near Eastern and South Asian Affairs for convening a joint subcommittee hearing this Thursday, October 5, 2000, on the transfer of dangerous Russian technologies and strategic weapons capabilities to Iran.

The American Jewish Committee, which has provided U.S. policy-makers with independent research on Iran's weapons programs since 1995, urges a strong U.S. response to stem the flow of foreign technology and supplies to Iran. Such transfers are used by Iran to enhance its nuclear, biological, chemical, and conventional weapons programs, a clear threat to the security of the United States and its allies. The United States must remain vigilant in its efforts to restrict the proliferation of the sophisticated technology necessary for Iran to advance its strategic weapons programs and to discourage those who trade with Iran from easing restrictions on dual use technology that could be employed to enhance Iran's weapons capabilities.

Despite the appearance of political change in Iran, the Islamic Republic continues to sponsor international terrorism, remains strongly opposed to Arab-Israel peace efforts, and engages in efforts to smuggle and develop weapons of mass destruction and delivery systems that could reach Israel and Europe. Of particular concern is Russia's cooperation with Iran in recent years in the development and acquisition of nuclear and other nonconventional weapons technologies, and Iran's ballistic missile program.

In furtherance of the subcommittees' efforts, I am enclosing copies of AJC's June 2000 report entitled "Iran and Weapons of Mass Destruction." I respectfully request that this report be distributed to the members of both the Subcommittee on Near Eastern and South Asian Affairs and the Subcommittee on European Affairs, and that the report, with this letter, be made a part of the record of the October 5 joint subcommittee hearing.

Thank you for your consideration of our request and our views on this important matter.

Sincerely,

JASON F. ISAACSON, *Director.*

IRAN AND WEAPONS OF MASS DESTRUCTION

(By W. Seth Carus)

IN BRIEF

In August 1998—as much as ten years ahead of U.S. intelligence predictions—Iran tested the Shahab-3, a medium-range ballistic missile capable of hitting targets in Israel, Saudi Arabia, and Turkey. Iran may now possess an arsenal of more than 400 ballistic missiles of various ranges.

Iran is also pushing the development of nuclear, biological, and chemical weapons of mass destruction deliverable by missile. Although lacking the infrastructure for an indigenous nuclear weapons program, Iran could acquire nuclear weapons in a

relatively short time by purchasing fissile materials or even by stealing one or more finished weapons from the former Soviet Union. Little is known about Iran's biological weapons program except that Iran has sought to hire scientists formerly associated with the Soviet program. Experts believe that Iran now has the most active chemical warfare program in the developing world.

In the past, the United States has had considerable success in delaying Iran's arms buildup. Its current policy options include those designed to further delay Iran's progress by denying it the foreign technology and technical expertise it requires through various arms control and export control programs. Another class of options are those designed to deter Iran's ultimate use of weapons of mass destruction, including theater missile defenses and consequence management.

IRAN AND WEAPONS OF MASS DESTRUCTION

On August 4, 1998, Iran launched the Shahab-3, a seventeen-ton medium-range ballistic missile (MRBM) capable of carrying a 1.2-ton payload an estimated 1,300 kilometers.¹ Only eighteen months before, a senior U.S. intelligence official had told Congress that Iran might take as long as ten years to acquire a missile with such a long range.² After the test launch, the U.S. government recognized that "the Shahab-3 significantly alters the military equation in the Middle East by giving Tehran the capability to strike targets in Israel, Saudi Arabia, and most of Turkey."³ The Shahab-3 became operational in early 2000.⁴

Iran's development of the Shahab-3 is significant for two reasons. First, it gives Iran a delivery system capable of striking every important U.S. ally in the region, including Egypt, Israel, and Turkey. Second, the system was clearly designed to deliver weapons of mass destruction. Iran currently has active programs to develop nuclear, biological, and chemical (NBC) weapons. Although many of these programs began in the early 1980s, during Iran's long war with Iraq, the pace of development significantly accelerated in the early 1990s.

Iran's efforts to develop these weapons are having a significant impact on the strategic environment in the entire Middle East. In addition to undermining international nonproliferation norms, these programs pose a direct military threat to U.S. friends and allies in the region and to U.S. military forces deployed there. Significantly, the Iranians appear to have accelerated their work on NBC weapons and associated delivery systems in recent years. Some analysts appear to believe that Iran would use its NBC weapons and missiles only if the survival of the regime were in question. Unfortunately, the limited available evidence calls into question that thesis. Iran's storage of chemical weapons on Abu Musa, an island in the Persian Gulf off the coast of Dubai, suggests that Tehran would use such weapons long before the regime's security was in doubt.⁵

... weapons of mass destruction are a necessary component of defense and a high priority."

The development of NBC weapons and associated delivery systems has significant support in Iran. George Tenet, Director of Central Intelligence, noted this in testimony to Congress earlier this year: "[Iran's] reformists and conservatives agree on at least one thing: weapons of mass destruction are a necessary component of defense and a high priority."⁶

NBC WEAPONS PROGRAMS

Iran's progress in developing NBC capabilities varies considerably from program to program. Lack of money, difficulties in integrating complex programs, and constraints imposed by Western technology-transfer controls have slowed the programs. The chemical weapons program appears considerably more advanced than the nuclear and biological programs. Although Iran has made considerable progress in developing ballistic missiles, it is less clear that it has developed missile delivery systems for its existing chemical or biological agents. Nevertheless, unless significant changes occur in Iran, it is only a matter of time before Iran has an effective arsenal with deliverable nuclear, biological, and chemical weapons capable of reaching Israel and other U.S. allies in the region.

NUCLEAR WEAPONS

Since the early 1980s, U.S. government officials have worried that the clerical regime in Tehran was bent on acquiring the infrastructure needed to build a nuclear weapon. These concerns became more acute in the early 1990s. A 1997 Arms Control and Disarmament Agency report gave the following assessment of Iran's nuclear

activities: "Although Iran's rudimentary program has apparently met with limited success so far, the U.S. believes Iran has not abandoned its efforts to expand its nuclear infrastructure to support nuclear weapon development."⁷ In early 1999, Director of Central Intelligence Tenet testified that Iran "seems to be pushing its [nuclear] program forward."⁸

Numerous estimates, many unduly pessimistic, have been made regarding the time required for Iran to acquire nuclear weapons. In 1992, one U.S. government agency reportedly calculated that Iran was eight to ten years from acquiring a nuclear weapon. Press reports in 1995 suggested that some Israeli experts thought that Iran would cross the nuclear threshold within five years. The most credible estimate was provided in January 1995 by U.S. Secretary of Defense William Perry and Israeli Prime Minister Yitzhak Rabin, who estimated that Iran would need seven to fifteen years to acquire a nuclear weapons capability.⁹ That implied acquisition between 2002 and 2010. In contrast, Gen. Anthony C. Zinni, commander, Central Command—and thus responsible for U.S. military forces in the Middle East—believes that Iran will acquire a nuclear weapon in the next few years.¹⁰

The Iranian effort to acquire nuclear weapons has been hampered by an inadequate technical base. According to the Defense Department:

*At this stage, Iran's scientific and technical base remains insufficient to support major nuclear programs. The Iranians recognize their dependence on foreign assistance and are encouraging younger Iranians to study abroad to gain needed technical assistance.*¹¹

Although the Iranians have made considerable efforts to enhance their nuclear infrastructure during the past four years, there is little public evidence to suggest that they have made more than limited progress. This implies that they still might require seven to fifteen years to produce a weapon.

"[Iran] might steal a weapon from the arsenal of the former Soviet Union."

Because Iran's program is in its early stages, it is difficult to predict how Iran will cross the nuclear threshold. Iran could acquire nuclear weapons in one of several ways. First, it might steal a weapon from the arsenal of the former Soviet Union. Second, the Iranians could acquire fissile material, highly enriched uranium or plutonium suitable for use in making atomic bombs. Finally, Iran could create the infrastructure needed to produce fissile material on its own.

There have been persistent rumors that Iran has already stolen weapons, but to date U.S. government officials have denied the claims.¹² Iran could steal a weapon clandestinely and provide no visible indicators to alert the outside world. Accordingly, there is serious concern that, should Iran steal a weapon, the outside world would have no knowledge of it until the Iranians decided to make their possession public.

The acquisition of fissile material from the former Soviet Union would allow the Iranians to significantly shorten their time-lines to fielding a crude nuclear weapon quite soon. There is some evidence that the Iranians were interested in acquiring fissile material from Kazakhstan in the early 1990s.¹³ One source estimates that it would take Iran only nine to thirty-six months to produce a fission bomb once it obtains the necessary fissile material.¹⁴ This concern is probably reflected in General Zinni's pessimistic view.

Should Iran have to produce its own fissile material, it will take considerably longer for Iran to develop a weapon. This process also will provide early warning, because of the size and complexity of the associated facilities and the unique signatures of the chemicals used. There is evidence that Iran has explored the development of capabilities to produce both highly enriched uranium and plutonium. Production of these two materials requires considerably different infrastructures.

Iran's current efforts appear focused on completing the VVER-1000 reactor that the Russians are building at Bushehr. This type of reactor is considered poorly suited to plutonium production, and Russia has promised that the reactor will be subject to inspection by the International Atomic Energy Agency (IAEA) and that spent fuel will be returned to Russia.¹⁵ Should Iran decide to break these agreements, it could extract plutonium from the spent fuel, but only if it also builds reprocessing facilities. Although the Iranians tried to obtain such a facility from Russia, there are no reports that it has one at present. U.S. government officials are concerned that acquisition of the Russian reactor will provide Iranian scientists with skills needed for reactor operation and materials handling. The greater concern remains that Iran will obtain a new reactor better suited to production of plutonium.

Efforts by Iran to enhance its nuclear infrastructure have been stymied by effective U.S. government efforts to curtail Iranian technology acquisitions. In response to U.S. pressure, Iran has taken the unusual step of allowing the IAEA to conduct

relatively intrusive inspections of its nuclear infrastructure. The IAEA has detected no violations of Iran's Nuclear Nonproliferation Treaty (NPT) commitments. Although some experts discount the IAEA conclusions, most believe that Iran is so early in the process of developing nuclear weapons that it has little need to hide its activities.¹⁶

Numerous Iranian efforts to obtain nuclear technology have fallen apart due to strong U.S. pressure. As Iran broadened its search for countries willing to supply sensitive nuclear technology, it found door after door slammed shut. As a result, by the early 1990s Iran was largely limited to two principal suppliers of nuclear technology: China and Russia. Some U.S. government experts believe that Iran requires Chinese or Russian assistance to develop nuclear weapons capabilities. As a Department of Defense report noted, "Chinese and Russian supply policies are key to Iran's success."¹⁷

BIOLOGICAL WEAPONS

Iran has an offensive biological weapons program that may have produced small quantities of biological agents. The U.S. Defense Department believes that the pace of Iranian development efforts probably accelerated after the 1995 disclosures regarding Iraq's biological weapons program.¹⁸ It is unclear from the available information when U.S. government experts believe that Iran will have a fully mature biological agent dissemination capability.

There is relatively little public information about Iran's biological weapons program. During the 1980s, an Iranian scientist made repeated efforts to acquire different strains of a fungus that produces mycotoxins from facilities in Canada. Subsequently, it developed that the same Iranian had attempted to acquire the organisms from the Central Bureau for Fungus Cultures in the Netherlands.¹⁹ Mycotoxins are the poison associated with the allegations that the Soviet Union used biological agents in Southeast Asia.

*... Iran is attempting to hire scientists who worked in the former Soviet biological weapons program.*²⁰

According to a December 1998 New York Times report, Iran is attempting to hire scientists who worked in the former Soviet biological weapons program. The Soviet Union had the world's largest and most sophisticated effort to develop biological weapons. At least some of these scientists have accepted the Iranian offers, although it remains unclear how many have done so or what expertise they bring to bear.²⁰

In January 1999, the National Council of Resistance of Iran, which is associated with the Mujahadeen (an Iraqi-supported group), made a series of allegations about the Iranian biological weapons program, charging that Iran has four research centers involved in the production of biological weapons. The council also alleged that four groups were involved in Iran's biological weapons program, and that these organizations were supported by an additional six research centers. However, the reliability of this information is cast into doubt by obvious inaccuracies, such as calling the chemical agent VX a biological agent.²¹

Most experts believe that Iran is developing standard biological weapons agents, such as anthrax and botulinum toxin, although the National Council of Resistance of Iran also mentions aflatoxin, an agent of uncertain utility adopted by the Iraqis.²² The basis for these claims is unknown, and given Iranian ties to Russian expertise, the possibility that Iran might adopt agents weaponized by the former Soviet program, such as Marburg, smallpox, plague, and tularemia, cannot be discounted.²³

The Iranians are trying to reduce the dependence of their biological weapons program on foreign technology and assistance:

*Tehran—driven in part by stringent international export controls—has set about acquiring the ability to produce domestically the raw materials and equipment needed to support indigenous biological agent production.*²⁴

CHEMICAL WEAPONS

Iran started its chemical weapons program in 1983 to respond to Iraqi use of chemical agents and produced its first agent the next year. In 1996, the Defense Department estimated that cumulative production had reached "a minimum several hundred tons of blister, blood, and choking agents."²⁵ One source claims that the Iranians might have as much as 2,000 tons of chemical agents, possibly including nerve agents.²⁶ More authoritatively, General Zinni has reported that Iran "may have produced several thousands tons of chemical agents to date."²⁷ According to Middle East defense analyst Michael Eisenstadt, "Iran has the most active chemical warfare program in the developing world."²⁸

Iran is also working to enhance the sophistication of its chemical program. It is trying to develop nerve agents, including VX, the most advanced agent to enter the inventories of the United States and the Soviet Union.²⁹ The U.S. government has suggested that Iran possesses stockpiles of chemical-filled artillery shells and bombs.³⁰ Persistent reports that Iran may possess chemical warheads for its SCUD missiles have never been confirmed.³¹

The effectiveness of Iran's existing chemical weapons arsenal is uncertain. Iran apparently relies heavily on hydrogen cyanide as a chemical weapon.³² While highly toxic, this chemical does not make an effective chemical agent. Although the Germans claim that they suffered deaths due to French hydrogen cyanide, the U.S. Army failed in its efforts during the Second World War to turn it into an effective weapon.³³ Even if the Iranians succeeded where others have failed, and successfully built reliable weapons using hydrogen cyanide, the chemical is significantly less effective than other chemical agents. One estimate suggests that twenty tons of hydrogen cyanide are needed to equal the military effectiveness of one ton of sarin nerve agent.³⁴

Considerable uncertainty surrounds the Iranian chemical weapons program. The Iranians have signed onto the Chemical Weapons Convention (CWC). Under the terms of this treaty, the Iranians will be forced to eliminate existing stocks of chemical weapons and will be required to dismantle chemical production facilities. The U.S. Defense Department has cast doubt on the sincerity of the Iranians in this regard:

Although Iran has signed the CWC, its efforts to establish an independent chemical production capability and a wide program to put chemicals into battlefield weapons cast doubt on its adherence to the agreement.³⁵

It believes that Iran "continues to upgrade and expand its chemical warfare production infrastructure and munitions arsenal."

Recent reports that Iraq may be acquiring from Russia a new type of chemical agent, known as Novichok agents, should raise concerns that Iran may do the same.³⁶ The Soviet Union reportedly developed the Novichok agents in order to evade the controls imposed by the Chemical Weapons Convention. Although prohibited by the treaty, these agents are not specifically mentioned in the annexes to the convention. Russian scientists estimated that one of the Novichok agents was five to eight times more lethal than VX, the most dangerous nerve agent that the United States ever developed.³⁷

LONG-RANGE DELIVERY SYSTEMS

Essential to the effectiveness of an NBC weapon is the delivery system used to transport it to the intended target. The delivery system must be capable of carrying the weapon's weight, must have sufficient range to reach the intended target, and must be accurate enough to allow the weapon to perform effectively. Although many systems can be used to deliver NBC weapons, special modifications are needed to ensure that the weapon operates effectively. For tactical applications, field artillery can be used, and Iran is believed to possess such munitions for at least its chemical agents. To strike targets at longer ranges, however, Iran needs to rely on either long-range aircraft, such as its Soviet-supplied Su-24 strike aircraft, or surface-to-surface ballistic missiles.

BALLISTIC MISSILES

The Iranians first began to acquire ballistic missiles in the mid-1980s, when the Libyans reportedly provided them with about thirty Soviet-built SCUD-C missiles with a range of 300 kilometers. Since then, Iran has acquired additional missiles from North Korea and China, and has been provided with assistance for indigenous development of missiles by China, North Korea, and Russia.

According to the International Institute for Strategic Studies, Iran currently has more than 400 surface-to-surface missiles, including about twenty-five CSS-8 launchers with 200 missiles and about ten SCUD launchers with 210 SCUD-B and SCUD-C missiles.³⁸ These missiles have sufficient range to hit targets in Iraq and the other states bordering the Persian Gulf. They cannot, however, strike targets very far into Saudi Arabia, and are unable to reach Israel. In addition, the missiles are relatively inaccurate. Nevertheless, Iran appears to have sufficient inventory to allow it to export some to the Democratic Republic of the Congo (previously called Zaire), according to a November 1999 press report.³⁹

... Iran will soon possess a small arsenal of operational systems."

Iran's efforts to develop a regionally significant missile capability took a long step forward with the test launch of the Shahab-3. Although the number of Shahab-3

missiles is not known, it is likely that Iran will soon possess a small arsenal of operational systems. The United States believes that Russian technology has played a critical part in the development of the Shahab-3, even though the missile itself is based on the North Korean No Dong.⁴⁰ In late 1999, a senior U.S. defense official reported that Iran was experiencing problems with the missile and has had several unsuccessful tests.⁴¹ In early 2000 the Iranians conducted a successful test launch of a Shahab-3, using one of a dozen North Korean rocket motors supplied to Tehran in 1999.⁴²

Iran is also believed to be working on follow-up systems to the Shahab-3. Reportedly, Iran has a Shahab-4, which appears to be an intermediate-range ballistic missile, and a Shahab-5, which will be a 10,000-kilometer-range intercontinental ballistic missile (ICBM). A December 1999 report states that General Zinni believes that Iran is likely to test the Shahab-4 in early 2000.⁴³

In addition to these missiles, Kenneth Timmerman believes that Iran is developing a new missile, known as the Kosar. The Kosar is based on the Soviet SS-5 missile and uses the same RD-216 liquid-fuel rocket motor. The SS-5 had a range of 4,250 kilometers. This missile may be the basis for Iran's reported space launch vehicle.⁴⁴ The relationship between the Kosar and Shahab-4 or Shahab-5 is unclear.

Iran may also be testing a sea-based launching capability for its missiles to allow it to strike targets too distant to be reached by missiles fired from within its borders. According to one report, in early 1998 Iran tested a short-range surface-to-surface missile from a barge located in the Caspian Sea. The report suggests that Iran may intend to launch missiles from merchant ships, thus allowing it to strike Israel or the United States with its SCUD-class missiles.⁴⁵

Significantly, the U.S. intelligence community is no longer sure that it will take Iran a long time to develop an ICBM:

*If Iran follows a development time line similar to that demonstrated with the Shahab-3, which included significant foreign assistance, it would take Iran many years to develop a 9,000 to 10,000 km range ICBM capable of reaching the United States. But Iran could significantly shorten the acquisition time—and warning time—by purchasing key components or entire systems from potential sellers such as North Korea.*⁴⁶

The evolving views of the U.S. intelligence community on the possibility that Iran could acquire ICBMs are reflected in the unclassified version of a National Intelligence Estimate released in September 1999. According to the public testimony of the national intelligence officer responsible for the report, North Korea is the most likely country to acquire an ICBM. Significantly, he then suggested that "Iran is the next hostile country most capable of testing an ICBM capable of delivering a weapon to the United States during the next 15 years." Other assessments of Iranian missile capabilities include the following:

- Iran *could* test an ICBM that could deliver a several-hundred-kilogram payload to many parts of the United States in the latter half of the next decade, using Russian technology and assistance.
- Iran *could pursue* a Taepo Dong-type ICBM and could test a Taepo Dong-1 or Taepo Dong-2-type ICBM, possibly with North Korean assistance, in the next few years.
- Iran is *likely to test* an SLV (space launch vehicle) by 2010 that—once developed—could be converted into an ICBM capable of delivering a several-hundred-kilogram payload to the United States.
- Beyond that, analysts differ on the likely timing of Iran's first flight test of an ICBM that could threaten the United States. Assessments include:
- *likely* before 2010 and *very likely* before 2015 (noting that an SLV with ICBM capabilities will *probably* be tested within the next few years);
- no more than an *even chance* by 2010 and a *better than even chance* by 2015;
- and *less than an even chance* by 2015.⁴⁷

As the alternative views suggest, there is little agreement within the intelligence community about the time required for Iran to acquire an ICBM capability. Given the high risks of underestimating the threat from Iran, it is probably prudent to assume that Iran will possess a missile capable of striking U.S. cities by 2010.

"Iran is the next hostile country most capable of testing an ICBM capable of delivering a weapon to the United States . . ."

The key problem for the Iranian ballistic missile program is now the development of warhead designs to permit effective delivery of NBC weapons. As the Iranians develop longer-range systems, the need for more sophisticated warheads grows. A warhead suitable for use in a short-range ballistic missile, such as the SCUD-B,

which flies at a relatively low speed and does not leave the atmosphere, is unlikely to be useful in a missile with longer ranges that flies at higher velocities and goes outside the atmosphere.

For biological and chemical weapons, this means developing warheads intended for cluster munition delivery. The United States and the Soviet Union are known to have developed chemical and biological cluster munitions for use in ballistic missiles. Significantly, the Soviet Union reportedly developed a system for use in delivering biological agents in intercontinental ballistic missiles (ICBMs).⁴⁸

Iranian efforts to develop ballistic missiles have been materially aided by Russia. This support continues despite numerous efforts by the United States to convince the Russians to end it. In February 1999, George Tenet, Director of Central Intelligence, testified about this activity:

*Especially during the last six months, expertise and matériel from Russia has continued to assist the Iranian missile effort in areas ranging from training, to testing, to components. This assistance is continuing as we speak, and there is no doubt that it will play a crucial role in Iran's ability to develop more sophisticated and longer range missiles.*⁴⁹

CRUISE MISSILES

The Iranians also have an interest in cruise missiles. Cruise missiles are unmanned aircraft-like missiles with a self-contained guidance system. Using modern satellite navigation systems, cruise missiles can attain accuracies of less than 20 meters. They can carry nuclear, biological, or chemical weapons. Some experts believe that cruise missiles are more effective delivery systems for chemical and biological agents than ballistic missiles.⁵⁰

Iran is known to possess several remotely piloted vehicles and antiship cruise missiles. In 1989, the Iranians displayed three homemade remotely piloted vehicles (RPVs), apparently intended primarily for reconnaissance purposes. All three were simple propeller-driven designs that relied on radio control for guidance, much like a hobbyist's model airplane. Significantly, the Iranians suggested that the craft could be used as weapons, indicating an interest in land-attack cruise missiles.⁵¹

Recently, Iran took a significant step forward in its efforts to develop cruise missile capabilities. According to the Washington Post, U.S. intelligence experts believe that Iran can now make the C-802 antiship cruise missile, which is a Chinese system based on the French *Exocet* antiship missile.⁵² The C-803 has a range of seventy-five miles and can carry a payload of 365 pounds. The C-802 is powered by a version of the French TRI-60 engine manufactured by Microturbo. This engine is used in a variety of cruise missiles, including the French *Apache*, which has a range of up to 800 kilometers, depending on the version.

"The U.S. government has now spent more than fifteen years trying to stop Iran's NBC acquisition programs."

If these reports are correct, there is little to stand in the way of an Iranian effort to acquire cruise missiles suitable for delivery of biological and chemical weapons. A version of the C-802 could have the range and payload for such weapons if intended for use against a neighboring state. For longer ranges, the Iranians would have to rely on a different system. The Iranians could marry the Silkworm platform to develop a longer-range missile with a large payload, as much as 800 kilometers according to an estimate given by Aaron Karp, an expert on missile proliferation.⁵³

U.S. POLICY OPTIONS

What steps can be taken to halt or constrain Iran's efforts to develop weapons of mass destruction? The U.S. government has now spent more than two decades working to stop Iran's NBC acquisition programs. The good news is that these efforts have achieved many successes, and as a result the Iranians' capabilities are far less advanced than would have been the case without the U.S. initiatives. The bad news is that it is highly unlikely that it will be possible to stop or roll back the Iranian weapons programs. Thus the United States needs to prepare to deal with the implications of Iranian possession of NBC weapons and their associated delivery systems.

This view may seem unduly pessimistic. But the reality, as shown by the difficulties associated with efforts to eliminate Iraq's NBC programs, is that it is virtually impossible to terminate such activities without the active agreement of the proliferating country. Any country truly committed to acquiring NBC weapons will eventually obtain them. Nonproliferation efforts, however, are critical for several reasons. First, such efforts drive up the cost of the programs, thus inevitably reducing the size of Iran's weapons arsenal. Second, prevention programs reduce the likely so-

phistication of the capabilities, because the Iranians necessarily find it more difficult to obtain the needed technology from the best sources. Finally, nonproliferation efforts impose delays, and thus make it less likely that Iran will have the capabilities that it seeks in time of crisis.

Thus, even only partially successful U.S. policies have yielded significant benefits. Nor should the United States abandon these policies once Iran actually begins to acquire NBC weapons. When Iran acquires the capability to use a particular class of weapons, it will seek to enhance the sophistication of these weapons and expand the size of its arsenal. Iran is not satisfied to possess first- and second-generation chemical agents, such as hydrogen cyanide and mustard gas. It also wants more effective third-generation chemical agents, such as VX. Similarly, it is not enough to acquire short-range ballistic missiles; Iran also wants longer-range systems.

What this suggests, however, is that nonproliferation programs cannot be the only components of a response to Iran's NBC programs. Military responses, such as active and passive defenses against NBC weapons, are also essential to reduce the effectiveness of these weapons if they are used. These must be coupled with deterrence policies designed to reduce the willingness of the Iranians to employ NBC weapons, as well as reassurance policies intended to demonstrate to U.S. allies and friends in the to their security.

In sum, then, U.S. policy options are of two types: (1) those that *delay* Iran's development of weapons of mass destruction through arms control, Cooperative Threat Reduction, and export controls, and (2) those that *deter* Iran's ultimate use of such weapons, including theater missile defenses, biological and chemical defenses, and consequence management.

DELAY OPTIONS

A review of Iran's NBC and missile development programs suggests that the Iranians have two weaknesses that can be exploited as the United States continues to develop its responses. First, Iran remains dependent on foreign technology and technical expertise, especially in program management and systems integration. Second, the Iranians have limited financial resources, and that prevents them from establishing massive redundant programs in the way the Iraqis did during the 1980s. This means that they cannot compensate for delays or increased costs imposed by U.S. interference simply by throwing more money at the problem.

Arms Control. The framework for U.S. efforts to constrain Iran is the nonproliferation regime created over many years through the negotiation of multilateral arms-control treaties intended to prevent the proliferation of NBC weapons and related delivery systems. These agreements provide the structure to accommodate a wide range of supporting activities essential for the success of nonproliferation policies.

The Nuclear Nonproliferation Treaty (NPT) is intended to halt the spread of nuclear weapons by controlling sensitive technologies associated with nuclear weapons development. The NPT focus has traditionally been on the nuclear fuel cycle, designed to prevent a country from building the infrastructure needed to produce fissionable material. The problem is that there are alternative ways to acquire fissile material, especially given the disarray in the former Soviet Union. Thus, even if the IAEA mechanisms are highly effective—a dubious proposition—Iran still possesses alternative routes to acquire nuclear weapons.

Two treaties form the basis for arms control in the area of biological weapons. The 1926 Geneva Protocol prohibits the use of biological weapons, while the Biological Weapons Convention (BWC) prohibits their possession or production. The BWC, however, provides no inspection or verification system. Some arms-control advocates believe it possible to create such arrangements in the area of biological weapons, but there is considerable reason to question the utility of such a development, since it is doubtful whether even a well designed verification system would detect an illicit biological weapons program. Certainly, the experience of the United Nations Special Commission (UNSCOM) in Iraq gives grounds for skepticism about the prospects for an effective inspection regime for biological weapons programs. The main use of the BWC, then, is to provide the international norm that justifies U.S. concerns over Iran's illegal efforts to develop biological weapons.

Finally, there is the Chemical Weapons Convention (CWC). As previously noted, Iran will have to eliminate its chemical weapons capabilities in order to come into compliance with the CWC. Iran has admitted past possession of chemical weapons production facilities but does not admit to any current possession.⁵⁴ It may try to evade treaty restrictions and retain chemical weapons and their production capabilities. The United States must use the international mechanisms being developed to ensure compliance with the CWC to expose illicit Iranian activities. With these trea-

ties as a foundation, the United States can use bilateral and multilateral diplomacy to constrain Iranian efforts to acquire technology.

“The U.S. government has placed a high premium on the Cooperative Threat Reduction program to prevent Iran—or any other country—from acquiring weapons.”

Cooperative Threat Reduction. When the Soviet Union collapsed, U.S. government officials recognized that there was a high risk that expertise, technology, and sensitive materials critical to the development of NBC weapons could assist proliferating countries like Iran. As a result, the Cooperative Threat Reduction initiative was launched. Although the program deals with biological and chemical components, its primary focus has been the security of the nuclear technology of the states that formerly constituted the Soviet Union.

The U.S. government has placed a high premium on the Cooperative Threat Reduction program to prevent Iran—or any other country—from acquiring weapons. Whether these efforts will be sufficient to prevent future thefts, given Russia’s growing economic and political turmoil, remains to be seen.

Export Controls. Iranian efforts to develop NBC weapons and delivery systems depend heavily on foreign assistance. Iran’s nuclear weapons program appears to rely on China and Russia, its chemical weapons program on China, its biological weapons program on Russia, and its missile program on a combination of Russian, Chinese, and North Korean support. The salience of external support is evident in a U.S. Defense Department statement about Iran’s chemical weapons program:

China is an important supplier of technologies and equipment for Iran’s chemical warfare program. Therefore, Chinese supply policies will be key to whether Tehran attains its long-term goal of independent production for these weapons.⁵⁵

“. . . eliminating foreign support for Iran’s weapons program would slow development, reduce sophistication, and increase cost.”

This suggests that eliminating foreign support for Iran’s weapons programs would slow development, reduce sophistication, and increase costs.

The Clinton administration has pressured China, Russia, and North Korea to end state-supported activities and to curtail illicit exports. The track record, however, is extremely uneven. North Korea, which clearly views missile sales as a source of badly needed foreign exchange, has made it quite clear that it will continue the practice. Similarly, there are severe doubts about the willingness of China and Russia to stop all but the most flagrant exports.

Two problems make it impossible to rely on export controls to halt transfers of technology. First, despite considerable pressure from Congress, the administration has not been willing to impose significant costs on China or Russia for their ongoing efforts to support Iran’s weapons programs. For a variety of reasons, the administration has determined that pushing too hard on these issues would harm efforts to develop closer ties with China and Russia. Although this view may be justified by the broader context of U.S. strategic interests, it does nothing to keep Iran from developing NBC weapons.

Second, even countries that support U.S. nonproliferation objectives are often more willing to trade with Iran than the United States believes appropriate. This is a clear lesson of the French willingness to sell Microturbo engines to Iran, ostensibly as power generators, even though the equipment might be helping Iran develop an indigenous production capability for cruise missiles. While some U.S. officials believe that the engine parts supplied by France assisted Iran in its efforts to produce cruise missile engines, the French were unwilling to be persuaded by the U.S. evidence. If it is difficult to reach agreement with a NATO partner, the prospects of reaching agreement with countries that have radically different views of their national interests are even less likely.

Trade Restrictions. In particular, the U.S. Congress has sought to exploit Iran’s need for investments. A focal point of this effort was the 1996 Iran and Libya Sanctions Act (ILSA). In May 1998, the administration, however, agreed to waive sanctions for oil and gas investments in Iran, effectively gutting the act. Secretary of State Madeline Albright justified this action in the following way:

Among other factors, I considered the significant, enhanced cooperation we have achieved with the European Union and Russia in accomplishing ILSA’s primary objective of inhibiting Iran’s ability to develop weapons of mass destruction and support of terrorism.⁵⁶

The European countries in particular objected to ILSA due to the insistence on imposing sanctions on entities outside the legal jurisdiction of the United States.

Moreover, the Europeans prefer a policy of engagement toward Tehran, rather than one that focuses on sanctions.

As a practical matter, ILSA had only a limited impact on Iran. In general, the Iranians have been hindered more by unfriendly investment policies than by U.S. sanctions legislation. Indeed, a study by the Economist Intelligence Unit ranked Iran 59 of 60 countries reviewed for their attractiveness to foreign investors.⁵⁷

DETERRENCE OPTIONS

The Department of Defense's Counterproliferation Initiative was started in the early days of the Clinton administration because Secretary of Defense Les Aspin strongly believed that nonproliferation efforts might fail, and, as a result, the U.S. military might be forced to fight an adversary armed with NBC weapons. As originally conceived, the Counterproliferation Initiative focused on having a balanced military response to allow the United States to defeat an NBC-armed adversary.

Theater Missile Defenses. Active defenses are a critical element of efforts to defeat NBC weapons. Because the most likely delivery systems for these weapons are ballistic and cruise missiles, the U.S. military needs robust theater missile defense systems. The importance of the missile defenses was highlighted during the 1991 Gulf War, when the mere presence of Patriot missile batteries helped nullify the strategic advantage that the Iraqis gained from their missile attacks against Israel and Saudi Arabia. Although there is little evidence that the Patriots successfully intercepted many missiles, they provided enormous political benefits. This demonstrates the importance of having even partially effective missile defense systems.

As a result of its experience in the Gulf War, Israel increased its commitment to missile defenses and to the Arrow missile program. The first three Arrow batteries became operational in March 2000. Unfortunately for Israel, Iranian missiles pose an even tougher challenge than the Iraqi missiles. The farther a ballistic missile flies, the higher its speed is on reentry and the harder it is for a missile defense system to hit it. Similarly, Israel appears interested in developing a so-called Boost Phase Intercept weapon, which is designed to destroy a ballistic missile just after launch or a launcher immediately after it has fired such a missile. The Israeli program appears to rely on remotely piloted vehicles, which would have to be flown into Iranian territory, a daunting technical challenge. The United States needs to work with Israel to ensure that the latter has the range of capabilities needed to defend against Iranian missiles.

Biological and Chemical Defenses. After the Gulf War, the U.S. Defense Department determined that the U.S. military lacked adequate biological and chemical defenses. Since then, there has been a serious effort to enhance the quantity and quality of such defenses. This includes equipment designed to detect chemical and biological agents, protective garments and gas masks that put barriers between soldiers and the toxic materials, and decontaminating agents to eliminate hazardous substances.

Israel is the only country in the region that has a significant capability in these matters. In addition, it is one of the few countries anywhere in the world that provides such protection for its civilian population. Israel, then, is probably better prepared as a nation to deal with this threat than virtually any other country, including the United States.

Consequence Management. As a result of the Clinton administration's concern that U.S. cities may be increasingly vulnerable to biological and chemical terrorism, the United States is devoting considerable resources to programs for mitigating the consequences of biological and chemical weapons attacks on urban areas. This means developing response capabilities to deal with casualties and to clean up contaminated areas. The significant expenditure of resources on this is providing the United States a unique expertise in the complexities of dealing with the consequences of biological and chemical use against civilians.

Israel already has considerable capability to conduct consequence management, and the techniques being developed in the United States will enhance its capacity to respond. Unfortunately, other U.S. allies in the region lack Israel's capabilities. The United States needs to work with them to ensure that they are not left vulnerable to biological and chemical weapons attack.

CONCLUSION

The United States probably cannot stop Iran from acquiring NBC weapons, so long as the Iranians remain willing to pay the political and economic costs of pursuing such programs. But there is a great deal the United States can do to constrain Iranian capabilities so as to reduce the risks they pose to the U.S. military forces operating in the region and to U.S. friends and allies there. Three administrations

have pursued policies aimed at preventing the Iranians from acquiring NBC weapons and missile delivery systems. Although they have not prevented Iran from making dangerous progress, the Iranians would be considerably more powerful today if it had not been for those efforts. These policies have slowed the Iranian programs, increased their financial cost, and limited the size and sophistication of Iranian capabilities.

“. . . even rudimentary Iranian capabilities pose a danger to U.S. friends and allies in the region.”

However, even rudimentary Iranian capabilities pose a danger to U.S. friends and allies in the region. This means that the United States must actively assist those countries develop responses to the threat posed by NBC weapons. What is needed will vary from one country to another. Israel is unique because it has the capacity to develop effective responses to Iran's weapons, even as its sensitivity to even limited casualties makes it highly vulnerable. The United States needs to continue its collaboration with Israel in missile defenses, and extend that effort to the arena of consequence management. Other countries, especially the six Gulf Cooperation Council (GCC) states, lack Israel's robust defense and deterrence capacities, and so the United States may have to provide more direct assistance. Where appropriate, the United States needs to ensure the availability of missile defenses, either by selling missile defense systems or deploying U.S.-manned systems. Moreover, the United States needs to work with the GCC countries to enhance their consequence management capabilities.

Finally, the United States must continue to pursue a strategy that combines multilateral, bilateral, and unilateral activities. The United States cannot deal with this problem by itself, and needs the support of governments around the world. At the same time, the United States cannot allow its policies to be influenced by those in the international community who believe that consensus is more important than results. The United States must be prepared to go it alone when necessary to protect its national interests, even in the face of criticism from others.

NOTES

¹ Tehran IRNA in English, 1722 GMT Aug. 4, 1998, Foreign Broadcast Information Service (FBIS).

² Statement by Acting Director of Central Intelligence George J. Tenet before the Senate Select Committee on Intelligence, hearing on Current and Projected National Security Threats to the United States, Feb. 5, 1997, as found at <http://www.cia.gov>. He stated: “in less than 10 years Iran probably will have longer range missiles that will enable it to target most of Saudi Arabia and Israel.”

³ Robert D. Walpole, national intelligence officer for strategic and nuclear programs, “North Korea's Taepo Dong Launch and Some Implications on the Ballistic Missile Threat to the United States,” Center for Strategic and International Studies, Dec. 8, 1998, as found at <http://www.cia.gov>.

⁴ Steve Rodan, “Iran Completes Shihab-3 Development,” *Ha'aretz*, Mar. 12, 2000, as carried by FBIS's on-line data base.

⁵ Ralph Perry, “Iran rejects chemical weapons charge,” United Press International, Mar. 23, 1995.

⁶ Statement of Director of Central Intelligence George J. Tenet, as prepared for delivery before the Senate Armed Services Committee hearing on Current and Projected National Security Threats, Feb. 2, 1999, as found at <http://www.cia.gov>.

⁷ Arms Control and Disarmament Agency, *Adherence to and Compliance with Arms Control*, 1997, as found at <http://www.acda.gov>.

⁸ Statement of George J. Tenet, Feb. 2, 1999.

⁹ *New York Times*, Jan. 10, 1995, p. A10.

¹⁰ *Aviation Week & Space Technology*, Dec. 13, 1999, p. 33.

¹¹ Office of the Secretary of Defense, *Proliferation: Threat and Response* (Washington), April, 1996, p. 14.

¹² Michael Eisenstadt, *Iranian Military Power: Capabilities and Intentions* (Washington, D.C.: Washington Institute for Near East Policy, 1996), p. 24, and Anthony H. Cordesman and Ahmed S. Hashim, *Iran: Dilemmas of Dual Containment* (Boulder, Colo.: Westview Press, 1997), p. 306.

¹³ Eisenstadt, *Iranian Military Power*, p. 16.

¹⁴ Cordesman and Hashim, *Iran*, p. 306.

¹⁵ *Ibid.*, pp. 299-301, and Eisenstadt, *Iranian Military Power*, pp. 19-21.

¹⁶ Cordesman and Hashim, *Iran*, pp. 299-301.

- ¹⁷ *Proliferation: Threat and Response*, November 1997, p. 25.
- ¹⁸ *Ibid.*, p. 27.
- ¹⁹ Don Sutton, "Harmful Fungi Requested by Iranian, Scientist Says," *Globe and Mail* (Toronto), Aug. 14, 1989, p. A1, as cited in Ron Purver, *Chemical and Biological Terrorism: The Threat According to the Open Literature*, Canadian Security Intelligence Service, June 1995, p. 35.
- ²⁰ Judith Miller and William J. Broad, "Bio-Weapons in Mind, Iranians Lure Needy Ex-Soviet Scientists," *New York Times*, Dec. 8, 1998, pp. A1, A12.
- ²¹ "Iran Accused of Bio-Weapons Program" *Associated Press*, Jan. 26, 1999; "Iranian Opposition Alleges Huge Bio-Warfare Program in Tehran," *Agence France Presse*, Jan. 26, 1998.
- ²² Arnold Beichman, "Arsenal of Germs in Iran?" *Washington Times*, Jan. 26, 1999, p. 17.
- ²³ For a discussion of the former Soviet program, see Ken Alibek, *Biohazard* (New York: Random House, 1999).
- ²⁴ Statement by Special Assistant to the DCI for Nonproliferation John A. Lander on the Worldwide Biological Warfare Threat to the House Permanent Select Committee on Intelligence as prepared for delivery on Mar. 3, 1999, as found at <http://www.cia.gov>
- ²⁵ *Proliferation: Threat and Response*, April 1996, p. 15.
- ²⁶ Andrew Rathmell, "Chemical Weapons in the Middle East—Lessons from Iraq," *Jane's Intelligence Review*, December 1995. Eisenstadt, *Iranian Military Power*, p. 26, suggests that Iran can produce several hundred tons of agent per year.
- ²⁷ Statement of Gen. Anthony C. Zinni, commander in chief, U.S. Central Command, before the House Armed Services Committee, Mar. 11, 1999, as found at <http://www.house.gov/hasc/>
- ²⁸ Eisenstadt, *Iranian Military Power*, p. 26.
- ²⁹ *Proliferation: Threat and Response*, November 1997, p. 27.
- ³⁰ *Ibid.*
- ³¹ Cordesman and Hashim, Iran, p. 292, and Eisenstadt, *Iranian Military Power*, p. 26.
- ³² *Proliferation: Threat and Response*, April 1996, p. 15.
- ³³ For the First World War experience with hydrogen cyanide, see L. F. Haber, *The Poisonous Cloud: Chemical Warfare in the First World War* (Oxford: Clarendon Press, 1986), and Augustin Prentiss, *Chemicals in War: A Treatise on Chemical Warfare* (New York: McGraw-Hill Book Company, 1937), pp. 171-174. World War II research is discussed in Stanford Moore and Marshall Gates, "Hydrogen Cyanide and Cyanogen Chloride," pp. 7-16, in Division 9, National Defense Research Committee, Office of Scientific Research and Development, *Chemical Warfare Agents and Related Chemical Problems*, parts I-II (Washington, D.C., 1946).
- ³⁴ *Proliferation: Threat and Response*, November 1997, p. 27.
- ³⁵ *Proliferation: Threat and Response*, April 1996, p. 16.
- ³⁶ Richard Z. Chesnoff with Douglas Pasternak, "Mystery at a Pesticide Plant," *US News and World Report*, Oct. 25, 1999.
- ³⁷ Judith Miller, "U.S. and Uzbeks Agree on Chemical Arms Plant Cleanup," *New York Times*, May 25, 1999, and Jonathan Tucker, "Converting Former Soviet Chemical Plants," *Nonproliferation Review*, Fall 1999, pp. 78-89. Tucker's article provides considerable detail on the program to develop the Novichok agents.
- ³⁸ International Institute for Strategic Studies, *The Military Balance, 1998/99* (London: Oxford University Press for the International Institute for Strategic Studies, 1998), p. 127.
- ³⁹ "DRC Receives Iranian 'Scud' Missiles," *Jane's Defence Weekly*, Dec. 1, 1999, and Bill Gertz, "Iran Sold Scud Missiles to Congolese," *Washington Times*, Nov. 22, 1999.
- ⁴⁰ Statement for the Record to the Senate Foreign Relations Committee on Foreign Missile Developments and the Ballistic Missile Threat to the United States Through 2015 by Robert D. Walpole, National Intelligence Officer for Strategic and Nuclear Programs, Sept. 16, 1999, as found at <http://www.cia.gov>
- ⁴¹ *Aviation Week & Space Technology*, Dec. 13, 1999, p. 33.
- ⁴² Bill Gertz, "N. Korea Sells Iran Missile Engines," *Washington Times*, Feb. 9, 2000, p. 1.
- ⁴³ *Aviation Week & Space Technology*, Dec. 13, 1999, p. 33.
- ⁴⁴ "Iran Preparing Bigger Missile Launch," *Reuters*, July 15, 1999. This report is based largely on the testimony of Kenneth R. Timmerman, president, Middle East Data Project, Inc., before the Subcommittee on Space and Aeronautics, Hearing on H.R. 1883, Iran Nonproliferation Act of 1999, July 13, 1999, as found at <http://www.house.gov/science/>
- ⁴⁵ Kenneth Timmerman, "Trumped by Iran's New Missile," *Washington Times*, May 5, 1999.
- ⁴⁶ Statement of George J. Tenet, Feb. 2, 1999.
- ⁴⁷ Statement of Robert D. Walpole, Sept. 16, 1999.
- ⁴⁸ Alibek, *Biohazard*, pp. 5-8.
- ⁴⁹ Statement of George J. Tenet, Feb. 2, 1999.
- ⁵⁰ This discussion of cruise missile technologies is based on W. Seth Carus, *Cruise Missile Proliferation in the 1990s* (Westport, Conn.: Praeger, 1992).
- ⁵¹ Dan Boyle and Robert Salvy, "Iranian RPVs," *International Defense Review*, June 1989, p. 857.
- ⁵² John Mintz, "Tracking Arms: A Study in Smoke," *Washington Post*, Apr. 3, 1999, pp. A3-A4.
- ⁵³ Aaron Karp, "Lessons of Iranian Missile Programs for U.S. Nonproliferation Policy," *Nonproliferation Review*, Spring-Summer 1998, p. 20, discusses the possibilities of Iran's developing cruise missile systems.

⁵⁴“News Chronology,” *CBW Conventions Bulletin*, Issue No. 46, December 1999, p. 25, includes Iran in a list of nine countries (“China, France, India, Iran, Japan, Russia, the UK, the USA, and one other”) admitted to possession of chemical weapons (U.S., Russia, India, and “one other”—the one other is presumably the same one in the previous list). On 17 November 1998, the Director General of the Iranian Foreign Ministry admitted that Iran possessed chemical weapons at the end of the Iran-Iraq war, but said, “Following the establishment of cease fire, the decision to develop chemical weapons capabilities was reversed and the process was terminated.” See “News Chronology,” *CBW Conventions Bulletin*, Issue No. 43, February 1999, p. 20.

⁵⁵*Proliferation: Threat and Response*, November 1997, p. 27.

⁵⁶Secretary of State Madeleine K. Albright, Statement on “Iran and Libya Sanctions Act (ILSA): Decision in the South Pars Case,” London, United Kingdom, May 18, 1998, as released by the Office of the Spokesman U.S. Department of State, as found on the Department of State web site, <http://www.srate.gov>.

⁵⁷Keith Weissman, “Iran Falling to Attract Foreign Investment,” *Near East Report*, July 12, 1999, as found at <http://www/aipac.org>

