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IRAN'S BALLISTIC MISSILE AND WEAPONS OF MASS DESTRUCTION PROGRAMS

HEARING

BEFORE THE

INTERNATIONAL SECURITY, PROLIFERATION, AND FEDERAL SERVICES SUBCOMMITTEE

OF THE

COMMITTEE ON GOVERNMENTAL AFFAIRS
UNITED STATES SENATE

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SEPTEMBER 21, 2000

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IRAN'S BALLISTIC MISSILE AND WEAPONS OF MASS DESTRUCTION PROGRAMS

THURSDAY, SEPTEMBER 21, 2000

U.S. SENATE,
SUBCOMMITTEE ON INTERNATIONAL SECURITY,
PROLIFERATION, AND FEDERAL SERVICES,
OF THE COMMITTEE ON GOVERNMENTAL AFFAIRS
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:38 p.m. in room SD–342, Senate Dirksen Building, Hon. Thad Cochran, Chairman of the Subcommittee, presiding.

Present: Senator Cochran.

OPENING STATEMENT OF SENATOR COCHRAN

Senator COCHRAN. The Subcommittee will please come to order.

Let me note at the outset that the Senate is in session and there had been an objection made to committees of the Senate meeting today during the session of the Senate. I have checked with the Parliamentarian on the rule and was advised that the sanction or prohibition relates to legislation that might be reported out at a meeting of the Committee that occurs during a session of the Senate, so that any legislation that is reported at such a meeting would be subject to a point of order if called up in the Senate.

We have no intention of meeting for the purpose of reporting out any legislation at today's session. And so, with the hope that that understanding is correct as a result of my discussion with the Parliamentarian, we will proceed with the hearing at which witnesses have agreed to testify on the subject of Iran's ballistic missile and weapons of mass destruction programs.

We welcome all of you to today's hearing, and observe that in 1995, the Intelligence Community assessed that Iran had neither the motivation nor the technical and economic resources to build an intercontinental ballistic missile. That assessment has changed. In the last 5 years, as the Intelligence Community now recognizes, Iran has made rapid progress in the development of longer-range ballistic missiles because of assistance from North Korea, Russia, and China.

Iran is now on the threshold of developing a missile with intercontinental ranges. One option available to Iran is to develop missiles similar to North Korea's Taepo Dong–1 or Taepo Dong–2 using technology North Korea has already transferred to Iran or may transfer in future sales. According to the Intelligence Community, a missile could be flight tested within the next few years. An-

other option is to develop a long-range ballistic missile using technology and assistance from Russia and other countries, which Intelligence Community officials have testified could be flight tested as early as 2005.

The substantial assistance Iran continues to receive from foreign missile suppliers is an indication of Iran's interest in the development of long-range ballistic missiles. This assistance will continue to accelerate Iran's capabilities, though as a result of all the assistance it has already received Iran now has the capability to do much on its own.

Beyond its own efforts to develop and acquire more advanced ballistic missiles, Iran has also become a supplier of ballistic missile technology and assistance to other nations. Unclassified reports from the Intelligence Community have identified Iran as a supplier of both Scud missile technology and solid-propellant missile technology to Syria. Press reports have also linked Iran to other ballistic missile programs, including Libya's. In testimony to the Senate earlier this year, Director of Central Intelligence Tenet said, "Iran's existence as a secondary supplier of this technology to other countries is the trend that worries me the most."

Iran's Minister of Defense announced a few hours ago that a Shahab–3 ballistic missile has been tested successfully earlier today.[1]

Iran also continues its aggressive pursuit of nuclear, biological, and chemical weapons.

Our witnesses today will help us examine the extent and pace of Iran's ballistic missile and weapons of mass destruction programs, as well as the prospects for, and consequences of continued proliferation cooperation between countries like Iran and North Korea.

Our witnesses today are: Robert Walpole, the Intelligence Community's National Intelligence Officer for Strategic and Nuclear Programs; A. Norman Schindler, the Deputy Director of the Director of Central Intelligence's Nonproliferation Center; Dr. Stephen Cambone, the former Staff Director for the Rumsfeld Commission; and Michael Eisenstadt, who is a Senior Fellow at the Washington Institute for Near East Policy.

Before we begin, I would like to remind all participants that this hearing is being held at the unclassified level.

Mr. Walpole, we appreciate your attendance. We know you have prepared a statement for our Subcommittee. We will print that statement in the record in its entirety and we encourage you to make whatever summary comments from the statement you think would be helpful to the Subcommittee. You may proceed.

TESTIMONY OF ROBERT D. WALPOLE, NATIONAL INTELLIGENCE OFFICER FOR STRATEGIC AND NUCLEAR PROGRAMS, NATIONAL INTELLIGENCE COUNCIL

Mr. WALPOLE. Mr. Chairman, thank you for the opportunity to appear in an open session to discuss our assessments of Iran's missile programs and programs for weapons of mass destruction. Open sessions give the public a brief glimpse at the important work that we in the Intelligence Community do for national security. But as

[1] The copy of the announcement appears in the Appendix on page 45.

you know, much of our knowledge of Iran's weapons programs is based on extremely sensitive sources and methods; it must remain classified or left unsaid in an open session. Thus, many of the details will have to be summarized here. We can provide additional details in classified briefings to you or other Senators if they so desire. We hope the summaries we give today will be of use to this Subcommittee and to the public.

The worldwide proliferation of ballistic missiles and weapons of mass destruction continues to evolve. Short- and medium-range missiles, particularly if armed with weapons of mass destruction, already pose a significant threat overseas to U.S. interests, forces, and allies. Moreover, the proliferation of missile technology and components continues, contributing to longer-range systems. Development efforts, in many cases fueled by foreign assistance, have led to new capabilities, as illustrated by Iran's Shahab–3 launches in 1998 and 2000, and North Korea's Taepo Dong–1 space launch attempt in August 1998. Also disturbing, some of the countries that were formerly recipients of technology have now been disseminating that to others.

The Intelligence Community continues to project that during the next 15 years the United States most likely will face ICBM threats from North Korea, probably from Iran (the focus of today's hearing), and possibly from Iraq—barring significant changes in their political orientations. These threats are, of course, in addition to long-standing threats from Russia and China.

That said, the threat facing the United States in the year 2015 will depend on our evolving relations with foreign countries, the political situation and economic issues in those countries, and numerous other factors that we cannot predict with confidence. For example, our current relations with Russia are significantly different than any one would have forecast 15 years ago. Important changes could develop in Iran and in Iran's external threat environment over the next 15 years. Iran is in a period of domestic dynamism, with its parliament and other institutions engaged in a vibrant and potentially tumultuous debate about change and reform. At the present time and at least for the next 3 years, we do not believe that national debate is likely to produce any fundamental change in Iran's national security policies and programs.

Recognizing the significant uncertainties surrounding projections 15 years into the future and the potential for reformers' success in Iran, we have projected Iranian ballistic missile trends and capabilities into the future largely based on assessed technical capabilities, and with the general premise that Iran's relations with the United States and related threat perceptions will not change significantly enough to alter Tehran's intentions. As changes occur, of course, our assessment of the threat will change as well.

The new missile threats from Iran and others are far different from those in the Cold War. The emerging threats are going to involve smaller missiles, less accurate, less reliable, fewer missiles than we have seen in the past. Even so, the missiles will be threatening. North Korea's space launch attempt demonstrated, in ways that words alone could not, that the new long-range missile threat is moving from hypothetical to real.

Moreover, many of the countries developing longer-range missiles probably assess that the threat of their use would complicate American decisionmaking during crises; increase the cost of a victory and deter the United States from pursuing certain objectives; and provide independent deterrent and war-fighting capabilities. They would see the threat of the use rather than the use of these weapons as providing them deterrence, coercive diplomacy, and prestige. Some of the systems would be for political impact; others may be built to perform specific military missions—facing the United States with a spectrum of motivations, development timelines, and hostile capabilities.

The probability that a missile with a weapon of mass destruction would be used against U.S. forces or interests is higher today than during most of the Cold War, and will continue to grow. This is because many more nations now have them, and we have also seen ballistic missiles used against U.S. forces during the Gulf War. Although the missiles used then did not have weapons of mass destruction warheads, Iraq had weaponized ballistic missile warheads with biological and chemical weapon agents and they were available for use. Some of the regimes controlling missiles have weapons of mass destruction programs and have exhibited the intention to use those even without missiles. Then we have non-state entities that are seeking weapons of mass destruction.

In fact, in the coming years, we project that U.S. territory is probably more likely to be attacked with weapons of mass destruction from non-missile delivery means than by missiles, primarily because the non-missile delivery means are less costly, easier to acquire, more reliable and accurate. But the missile threat will continue to grow, in part because the missiles have become important regional weapons in numerous countries' arsenals, and they provide a level of prestige, coercive diplomacy, and deterrence that non-missile means do not.

Iran has very active missile and weapon of mass destruction development programs, and is seeking foreign missile, chemical, biological, and nuclear technologies. 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 will soon deploy the 1,300 kilometer range Shahab–3 medium-range ballistic missile, which will allow it to reach Israel and most of Saudi Arabia and Turkey.

And at this point, let me address this announcement that you mentioned on the Shahab–3. I would be very careful how much credibility we apply to public announcements like this. This is not the first such launch. The announcement said it was the first launch. This is the third. It says that it was for non-missile and non-military purposes. We view it as a missile not a space launch vehicle, it is not designed for that. And then they say it was successful. We are analyzing the data from the launch and will be able to tell you more on that. But I would just say be careful when we get public announcements like this, when they get two things so clearly wrong, that we are not swallowed up with the rest of it as well.

Tehran probably has a small number of Shahab–3s available for use in a conflict, and it has announced that production and deployment has begun. In fact, it has even displayed three Shahab–3s along with a mobile launcher and other ground support equipment. That display even had a range and a payload size on it, and it is not what I would consider to be a non-military display.

Iran's public statements suggest that it plans to develop longer-range delivery systems. Although Tehran stated that the Shahab–3 is Iran's last military missile, at that point they stated it, 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 also mentioned plans for the Shahab–5, strongly suggesting that it intends to develop even longer-range systems in the near future.

Iran has displayed a mock-up satellite and space launch vehicle, suggesting it plans to develop a vehicle to orbit Iranian satellites. However, Iran, like any other country, could convert a space launch vehicle into a missile by developing a reentry vehicle for it.

Foreign assistance continues to be a problem. Entities in Russia, North Korea, and China supply the largest amount of ballistic missile-related goods, technology, and expertise to Iran.

Let me walk through where we are with the threat. Last year's threat assessment walked country-by-country. Since we are looking at a specific country, I am going to walk through time blocks. I will start with today and then look 5 years out, and then another 5 years out.

Today, we judge that like many others, Iran views its regional concerns as a primary factor in tailoring its military programs. Tehran sees its short- and medium-range missiles not only as deterrents but also as force-multiplying weapons of war. On July 15, they conducted the second test of the Shahab–3, and of course today the third. We assess that Iran's interest in eventually developing an ICBM and space launch capability has not changed.

In the 2001 to 2005 timeframe, we believe that Iran is more likely to develop an intermediate-range ballistic missile based on Russian technology before developing an ICBM based on that technology, because of the regional concerns I mentioned earlier. Iran could test an IRBM, intermediate-range ballistic missile, before the end of this 5-year period.

Now let me talk a little bit about what we say Iran could do, and then talk about what they can likely do. We have both judgments, just like we did in last year's estimate.

Some analysts believe that Iran could test an ICBM or space launch vehicle patterned after the North Korean Taepo Dong–1 in the next few years. Such a system would be capable of delivering biological or chemical payloads to the United States. Nevertheless, all assess that Iran would be unlikely to deploy an ICBM version of the Taepo Dong–1. It just does not serve all of their needs.

Most believe that Iran could develop and test a three-stage Taepo Dong–2 type ICBM during this same timeframe, possibly with North Korean assistance. It would be capable of delivering a nu-

clear weapon-sized payload to the United States. A few believe that the hypothetical routes toward an Iranian ICBM are less plausible than they appeared in our analysis last year and believe that Iran will not be able to test any ICBM during this time period. So last year we had agreement on what Iran could do. Now we have even some disagreement on the could.

Now more on the likelihood judgments. Some believe that Iran is likely to try to demonstrate a rudimentary ICBM booster capability as soon as possible, and that a Taepo Dong-type system, tested as a space launch vehicle, would be the shortest path to that goal. Others believe that Iran is unlikely to test any ICBM during this period.

Now let's shift to the next 5 years, 2006 to 2010. Most believe that Iran will likely test an IRBM—probably based on Russian assistance—during this period. All assess that Iran could test an ICBM that could deliver nuclear weapon-sized payloads to many parts of the United States in the latter half of the next decade, using Russian technology obtained over the years.

Some further believe that Iran is likely to test an ICBM before 2010. Others believe there is no more than an even chance of an ICBM test before 2010. And a few believe that Iran is unlikely to test an ICBM before 2010.

So you can see when we start looking at likelihoods, we get a spectrum of views.

Nevertheless, most agree that Iran is likely to test a space launch vehicle by 2010. And as I indicated earlier, such a space launch vehicle could be converted into an ICBM. A few believe that such a test is still unlikely before 2010.

Now let's look at the 2011 to 2015 time period. Most believe that Iran is likely to test an ICBM, possibly as a space launch vehicle, before 2015. Some believe, in fact, that this is very likely. A few believe that there is less than an even chance of a test of an Iranian ICBM by 2015.

Sales of ICBMs or space launch vehicles, which have inherent ICBM capabilities, could increase an Iranian ability to threaten the United States with a missile strike sooner than we have laid out here. North Korea has demonstrated a willingness to sell its missiles and technologies and could continue doing so, perhaps under the guise of selling space launch vehicles. We judge that a Russian or Chinese sale of an ICBM or SLV in the next 15 years is unlikely, although the consequences of such sales, especially if it were mobile, would be extremely serious.

Some countries, perhaps including Iran, probably have devised other means for delivering weapons of mass destruction to the United States, some cheaper and more reliable than missiles that we have talked about here. The goal would be to move the chemical or biological weapons closer to the United States without needing a missile to do it. Now you could either build the weapon in the United States and use it in the United States, or you could bring a ship with a shorter-range system, like a Scud strapped to the ship, close to the United States and strike. It would have reduced accuracy, but the reduced accuracy would be better than some of the ICBMs that we have even discussed here.

Many of the countries, such as Iran, probably will rely initially on readily available technologies to develop penetration aids and countermeasures. And in last year's report, we listed a whole bunch of countermeasure technologies that would be readily available, so I will not go into that list here. But they could develop countermeasures based on those technologies by the time they flight-test their missiles. More advanced technologies would take longer.

Let me turn now to Norman Schindler, he is, as you indicated, Deputy Director of the Nonproliferation Center, to discuss Iran's programs to develop weapons of mass destruction. After he goes through his opening remarks, then we would be prepared to answer questions on the whole thing.

[The prepared statement of Mr. Walpole follows:]

PREPARED STATEMENT OF ROBERT D. WALPOLE

Mr. Chairman, members of this subcommittee, thank you for the opportunity to appear today in an open session to discuss our assessments of the Iranian missile and weapons of mass destruction threat to the United States in coming years. Open sessions give the public a brief glimpse at the important work the Intelligence Community performs for the security of our nation. But as you know, much of our knowledge on Iran's weapons programs is based on extremely sensitive sources and methods; it must remain classified to aid in our nation's security. Thus, many details will have to be summarized or left unsaid in open session. We can provide additional details in classified briefings to you or other Senators if you so desire. We hope our summaries today will be of use to the Subcommittee and the public.

The Evolving Missile Threat in the Current Proliferation Environment.

The worldwide proliferation of ballistic missiles and weapons of mass destruction continues to evolve. Short- and medium-range ballistic missiles, particularly if armed with weapons of mass destruction, already pose a significant threat overseas to U.S. interests, military forces, and allies. Moreover, the proliferation of missile technology and components continues, contributing to longer-range systems. Development efforts, in many cases fueled by foreign assistance, have led to new capabilities—as illustrated by Iran's Shahab–3 launches in July 1998 and July 2000 and North Korea's Taepo Dong–1 space launch attempt in August 1998. Also disturbing, some countries that traditionally have been recipients of missile technologies have become exporters.

The Intelligence Community continues to project that during the next 15 years the United States most likely will face ICBM threats from North Korea, probably from Iran (the focus of today's hearing), and possibly from Iraq—barring significant changes in their political orientations. These threats are, of course, in addition to the long-standing threats from Russia and China. That said, the threat facing the United States in the year 2015 will depend on our evolving relations with foreign countries, the political situation and economic issues in those countries, and numerous other factors that we cannot predict with confidence. For example, our current relations with Russia are significantly different than any one would have forecast 15 years ago. Important changes could develop in Iran and in Iran's external threat environment over the next 15 years. Iran is in a period of domestic dynamism, with its parliament and other institutions engaged in a vibrant and potentially tumultuous debate about change and reform. At the present time and for at least the next three years, we do not believe that national debate is likely to produce any fundamental change in Iran's national security policies and programs. Recognizing the significant uncertainties surrounding projections fifteen years into the future and the potential for reformers' success in Iran, we have projected Iranian ballistic missile trends and capabilities into the future largely based on assessed technical capabilities, with a general premise that Iran's relations with the United States and related threat perceptions will not change significantly enough to alter Tehran's intentions. As changes occur, our assessment of the threat will change as well.

The new missile threats from Iran and others are far different from the Cold War. The emerging missile threats will involve considerably fewer missiles with less accuracy, yield, survivability, reliability, and range-payload capability than the hostile strategic forces we have faced for decades. Even so, the new systems are threatening. North Korea's space launch attempt demonstrated—in a way words alone

could not—that the new long-range missile threat is moving from *hypothetical* to *real*. Moreover, many of the countries developing longer-range missiles probably assess that the threat of their use would complicate American decision making during crises; increase the cost of a U.S. victory; potentially deter Washington from pursuing certain objectives; and provide independent deterrent and war-fighting capabilities. Some of these countries may believe that testing these systems only as SLVs—without a reentry vehicle—may achieve deterrence, coercive diplomacy, and prestige goals without risking the potential negative political and economic costs of a long-range missile test.

Acquiring long-range ballistic missiles armed with weapons of mass destruction will increase the possibility that weaker countries could deter, constrain, and harm the United States. The missiles need not be deployed in large numbers. They need not be highly accurate or reliable; their strategic value is derived from the *threat* of their use, not the near certain outcome of such *use.* Some may be intended for political impact; others may be built to perform more specific military missions—facing the United States with a spectrum of motivations, development timelines, and hostile capabilities. In many ways, they are not envisioned at the outset as operational weapons of war, but as strategic weapons of deterrence and coercive diplomacy.

The probability that a missile with a weapon of mass destruction would be used against *U.S. forces or interests* is higher today than during most of the Cold War, and will continue to grow. More nations have them, and ballistic missiles were used against U.S. forces during the Gulf War. Although the missiles used in the Gulf War did not have WMD warheads, Iraq had weaponized ballistic missile warheads with BW and CW agents and they were available for use. Some of the regimes controlling missiles have exhibited a willingness to use weapons of mass destruction with other delivery means. In addition, some non-state entities are seeking weapons of mass destruction, and would be willing to use them without missiles. In fact, we project that in the coming years, *U.S. territory* is probably more likely to be attacked with weapons of mass destruction from non-missile delivery means (most likely from non-state entities) than by missiles, primarily because non-missile delivery means are less costly, easier to acquire, and more reliable and accurate. But the missile threat will continue to grow, in part because these missiles have become important regional weapons in numerous countries' arsenals, and they provide a level of prestige, coercive diplomacy, and deterrence that non-missile means do not.

Iran, Missiles, and WMD.

Iran has very active missile and WMD development programs, and is seeking foreign missile, nuclear, chemical, and biological technologies. 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 will soon deploy the 1,300 km-range Shahab–3 medium-range ballistic missile, which will 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 has publicly displayed three Shahab–3s along with a mobile launcher and other ground support equipment.

Iran's public statements suggest 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 an SLV 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 SLV, suggesting it plans to develop a vehicle to orbit Iranian satellites. However, Iran could convert an SLV into a missile by developing a reentry vehicle.

Foreign Assistance. Entities in Russia, North Korea, and China supply the largest amount of ballistic missile-related goods, technology, and expertise to Iran. Tehran is using this assistance to develop new ballistic missiles and to achieve its goal of becoming self-sufficient in the production of existing systems. China provided complete CSS–8 SRBMs, North Korean equipment and technical assistance helped Iran establish the capability to produce Scud SRBMs, and Russian assistance accelerated Iranian missile development.

Iranian Missile Threats to the United States and Its Interests.

Today. We judge that like many others, Iran views its regional concerns as one of the primary factors in tailoring its programs. Tehran sees its short- and medium-

range missiles not only as deterrents but also as force-multiplying weapons of war, primarily with conventional weapons, but with options for delivering biological, chemical, and eventually nuclear weapons. On 15 July of this year, Iran conducted a second test of its Shahab–3. We assess that Iran's interest in eventually developing an ICBM/space launch capability has not changed.

2001–2005. We believe Iran is more *likely* to develop an intermediate-range ballistic missile (IRBM) based on Russian technology before developing an ICBM using that technology. Iran *could* test such an IRBM before the end of this period.

First, what *could* Iran do during this period. Some analysts believe that Iran *could* test an ICBM or SLV patterned after the North Korean TD–1 SLV in the next few years; such a system would be capable of delivering BW/CW payloads to the United States. Nevertheless, all assess that Iran would be *unlikely* to deploy an ICBM version of the TD–1.

Most believe that Iran *could* develop and test a three-stage TD–2–type ICBM during this period, possibly with North Korean assistance; it would be capable of delivering a nuclear weapon-sized payload to the United States. A few believe that the hypothetical routes toward an Iranian ICBM are less plausible than they appeared in our analysis last year and believe that Iran will *not be able* to test any ICBM in the 2001–2005 time frame.

Now to our *likelihood* assessments. Some believe that Iran is *likely* to try to demonstrate a rudimentary ICBM booster capability as soon as possible; a Taepo Dong-type system—likely tested as an SLV without an RV impact downrange—would be the shortest path to this goal. Finally, others believe Iran is *unlikely* to test any ICBM during this period.

2006–2010. Most believe Iran will *likely* test an IRBM—probably based on Russian assistance—during this period.

All assess that Iran *could* flight test an ICBM that could deliver nuclear weapon-sized payloads to many parts of the United States in the latter half of the next decade, using Russian technology obtained over the years.

Some further believe Iran is *likely* to test an ICBM—possibly as an SLV without an RV impact downrange—before 2010; others believe there is *no more than an even chance* that Iran will test an ICBM—probably based on Russian assistance—capable of threatening the United States by 2010; and a few believe an ICBM test is *unlikely* in this period.

Nevertheless, most agree that Iran is *likely* to test an SLV by 2010. Such a vehicle could be converted into an ICBM capable of delivering a nuclear weapon-sized payload to the United States. A few believe such a test is *unlikely* until after 2010.

2011–2015. Most believe Iran is *likely* to test an ICBM—possibly as an SLV without an RV impact downrange—before 2015, some believe this is *very likely*; a few believe that there is *less than an even chance* of an Iranian ICBM test by 2015.

Sales of complete ICBMs or SLVs. Sales of ICBMs or SLVs, which have inherent ICBM capabilities, could further increase an Iranian ability to threaten the United States with a missile strike. North Korea has demonstrated a willingness to sell its missiles and related technologies and could continue doing so, perhaps under the guise of selling SLVs. Although we judge that Russia or China are unlikely to sell an ICBM or SLV in the next 15 years, the consequences of such sales, especially if mobile systems were involved, would be extremely serious.

Alternative Threats to the United States. Some countries, perhaps including Iran, probably have devised other means to deliver weapons of mass destruction to the United States—some cheaper and more reliable and accurate than ICBMs that have not completed rigorous testing and validation programs. The goal would be to move the weapon within striking distance without a long-range ICBM. These alternative threats include preparing chemical or biological weapons in the United States and using them in large population centers; and deploying short- and medium-range missiles on surface ships—which can be readily done, especially if the attacking country is not concerned about accuracy. The reduced accuracy in such a case, however, would be better than that of some of the ICBMs I mentioned earlier.

Ballistic Missile Defense Countermeasures. Many countries, such as Iran, probably will rely initially on readily available technologies to develop penetration aids and countermeasures, including: separating RVs, radar absorbent material, booster fragmentation, jammers, chaff, and decoys. These countries could develop some countermeasures by the time they flight-test their missiles. More advanced technologies could be available over the longer term. Some of the factors that will influence a nation's countermeasures include: the effectiveness weighed against their cost, complexity, reduction in range-payload capability; foreign assistance; and the ability to conduct realistic tests.

Iran's Weapons of Mass Destruction Programs.

Let me turn now to Mr. A. Norman Schindler, Deputy Director of the DCI's Nonproliferation Center (NPC), which recently published its 721 report related to this issue, to talk about Iran's programs to develop weapons of mass destruction.

Following his remarks, we will both be available to answer those questions that we can while still protecting sources and methods. We would not want this session to inadvertently facilitate Iran's efforts at hiding its work from us.

Senator COCHRAN. Thank you, Mr. Walpole.

Mr. Schindler, welcome. You may proceed.

TESTIMONY OF A. NORMAN SCHINDLER, DEPUTY DIRECTOR, DCI NONPROLIFERATION CENTER

Mr. SCHINDLER. Thank you, Mr. Chairman. As Mr. Walpole indicated, I will provide a summary of Iran's WMD programs, the programs designed to produce the weapons to be delivered by the missile systems that Mr. Walpole described, as well as by other delivery means.

The Iranians regard these as extremely sensitive programs 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, as Mr. Walpole indicated earlier, from providing many details. But we hope this summary will nonetheless be useful, and we would be prepared to elaborate in greater detail on all of these issues in a classified setting.

Mr. Chairman, I would like to begin with a few comments on Iran's nuclear 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.

Iran is seeking nuclear-related equipment, material, and technical expertise from a variety of foreign sources, especially in Russia. Tehran claims that it is attempting to master nuclear technology for civilian research and nuclear energy programs. However, in that guise it is developing whole facilities, such as a uranium conversion facility, that could be used to support the production of fissile material for a nuclear weapon.

Despite international efforts to curb the flow of critical technologies and equipment, Tehran continues to seek fissile material and technology for weapons development and has established an elaborate system of covert military and civilian organizations to support its acquisition goals.

Cooperation with foreign suppliers is helping Iran augment its nuclear technology infrastructure, which in turn will be useful in supporting nuclear weapons research and development. The expertise and technology gained, along with the commercial channels and contacts established, even from cooperation that appears strictly civilian in nature, could be used to advance Iran's nuclear weapons effort.

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

We also have evidence that Russian entities are interacting with Iranian nuclear research centers on a wide variety of activities beyond the Bushehr project. Many of these projects also have direct application to the production of weapons-grade fissile material.

China pledged in 1997 not to engage in any new nuclear cooperation with Iran but said it would complete two ongoing projects. One of those—a small research reactor—has since been completed, and progress is still being made on a zirconium production facility that Iran will use to produce cladding for nuclear fuel. It is our assessment that China is abiding by its pledge not to engage in new nuclear activity with Iran.

Mr. Chairman, the Intelligence Community continues to monitor developments in the Iranian nuclear program and nuclear energy program very carefully. We regularly provide classified assessments of the progress that Iran is making to the Administration, to U.S. war-fighters, and to the Congress as a result of the importance of this issue. However, we are reluctant to provide additional details in an unclassified setting as to what timelines we believe exist for the Iranians to develop a nuclear weapon.

I would like to turn now to Iran's chemical warfare (CW) program, which is one of the largest in the Third World. Iran launched its offensive 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 in 1997 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 in addition that it possesses a significant stockpile of weaponized and bulk agent and we think that this amounts to actually several thousand tons.

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 to diversify its CW arsenal by producing more sophisticated and lethal agents and munitions.

Tehran continues to seek production technology, training, expertise, and chemicals that could be used as precursors from entities in Russia and China. It also seeks through intermediaries in other countries equipment and material that could be used to develop a more advanced and self-sufficient CW infrastructure.

Thus far, Iran remains dependent on external suppliers for technology, equipment, and precursors. However, we judge that Tehran is rapidly approaching self-sufficiency and could become a supplier of CW-related materials to other nations.

Iran's biological weapons (BW) program also 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 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 institute, which we suspect also provide support to the BW program.

Tehran is expanding its efforts to acquire biotechnical materials, equipment, and expertise from abroad, primarily from entities in Russia and Western Europe. Because of the dual-use nature of the equipment, Iran's ability to produce a number of both veterinary and human vaccines also gives it the capability to produce BW agents.

At the same time Tehran continues to develop its BW capability, it is a party to the Biological Warfare Convention.

Finally, Mr. Chairman, I would like to say a few words about Iran's motivations for pursuing its WMD programs.

We assess that Tehran, no matter who is in power, will continue to develop and expand its WMD and ballistic missile programs as long as it perceives threats from the U.S. military forces in the Gulf, a nuclear-armed Israel, and Iraq. In addition, the deterrence posture or prestige factor associated with some of these programs are probably viewed by Iranian leaders as a means to achieve their goals of becoming the predominant power in the region.

Mr. Chairman, that concludes our prepared statement. We would be delighted to attempt to answer your questions.

[The prepared statement of Mr. Schindler follows:]

PREPARED STATEMENT OF A. NORMAN SCHINDLER

Mr. Chairman, as Mr. Walpole indicated, I will provide a summary of Iran's WMD programs—the programs designed to produce the weapons to be delivered by the missile systems Mr. Walpole described, as well as by other delivery means. The Iranians regard these as extremely sensitive programs 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 on the programs in open session. But I hope this summary will be of use to the Committee, and we are prepared to provide additional details in classified briefings.

Nuclear

Mr. Chairman, I'd like to begin with a few comments on Iran's nuclear 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.

Iran is seeking nuclear-related equipment, material, and technical expertise from a variety of foreign sources, especially in Russia. Tehran claims that it is attempting to master nuclear technology for civilian research and nuclear energy programs. However, in that guise it is developing whole facilities—such as a uranium conversion facility—that could be used to support the production of fissile material for a nuclear weapon.

- Despite international efforts to curb the flow of critical technologies and equipment, Tehran continues to seek fissile material and technology for weapons development and has established an elaborate system of covert military and civilian organizations to support its acquisition goals.

Cooperation with foreign suppliers is helping Iran augment its nuclear technology infrastructure, which in turn will be useful in supporting nuclear weapons research and development. The expertise and technology gained, along with the commercial channels and contacts established—even from cooperation that appears strictly civilian in nature—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 have direct application to the production of weapons-grade fissile material.
- China pledged in 1997 not to engage in any new nuclear cooperation with Iran but said it would complete two ongoing nuclear projects, a small research reactor and a zirconium production facility that Iran will use to produce cladding for reactor fuel. As a party to the Nuclear Nonproliferation Treaty (NPT), Iran is required to apply IAEA safeguards to nuclear fuel, but safeguards are not required for the zirconium plant or its products.

Mr. Chairman, the Intelligence Community continues to monitor development in the Iranian nuclear and nuclear weapons programs carefully. We regularly provide classified assessments of the progress Iran is making to the Administration, U.S. warfighters, and the Congress. We are reluctant to provide additional details on the Iranian program—including when Iran might develop a nuclear weapon—in an unclassified setting.

Chemical

I'd like to turn now to Iran's chemical warfare (CW) program. Iran launched its offensive 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 (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 diversifiy its CW arsenal by producing more sophisticated and lethal agents and munitions.

- Tehran continues to seek production technology, training, expertise and chemicals that could be used as precursors from entities in Russia and China. It also seeks through intermediaries in other countries equipment and material that could be used to develop a more advanced and self-sufficient CW infrastructure.
- Thus far, Iran remains dependent on external suppliers for technology, equipment, and precursors. However, we judge that Tehran is rapidly approaching self-sufficiency and could become a supplier of CW-related materials to other nations.

Biological

Iran's BW program also 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 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.
- Tehran is expanding its efforts to acquire biotechnical materials, equipment, and expertise from abroad—primarily from entities in Russia and Western Europe. Because of the dual-use nature of the equipment, Iran's ability to produce a number of both veterinary and human vaccines also gives it the capability to produce BW agents.
- Tehran continues to develop its BW capability despite being a party to the Biological Warfare Convention (BWC).

Finally, Mr. Chairman, I'd like to say a word about Iran's motivations for pursuing it's WMD programs.

We assess that Tehran—no matter who is in power—will continue to develop and expand its WMD and ballistic missile programs as long as it perceives threats from U.S. military forces in the Gulf, a nuclear-armed Israel, and Iraq. In addition, the deterrence posture or prestige factor associated with some of these programs are probably viewed by Iranian leaders as a means to achieve their goals of becoming the predominant power in the region, asserting Iran's ideological leadership in the Muslim world, and diminishing Western—particularly U.S.—influence in the Gulf.

Mr. Chairman, that concludes our prepared statement. Mr. Walpole and 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 the committee—or committee Members—with a more detailed assessment of Iran's WMD programs in a closed setting.

Senator COCHRAN. Thank you very much, Mr. Schindler, Mr. Walpole.

Let me ask you first of all about the announcement by Iran's Minister of Defense about the Shahab–3 test firing that occurred earlier today, that you commented on earlier. You told us to be cautious and that there were some errors in this announcement. One other thing occurs to us, and that is that there was a lag of about 2 years between the first and second Shahab–3 test, but a lag of only 2 months between the second test and today's third test. Is there any significance to the fact that Iran is decreasing the amount of time between the tests of its Shahab–3 missile?

Mr. WALPOLE. I am not sure I would read anything into that. I have worked with flight-test programs of various countries in the past and tried to see if I could divine anything from that, and it is very hard to do, to pin down what is happening.

As we have said in open session before, Iran procured No Dongs and then sought Russian assistance to modify that into the Shahab–3, which is a little different approach than Pakistan used to get the Ghauri, which is also a No Dong. They did not mind trying to change it, they just decided to change its name and buy them outright.

And so when they are doing that type of development effort it really depends on how they want to push each individual window to get the system to work. So I am not sure that I would read the difference in time between today's launch and the July launch as indicating that anything has sped up, because we could go another 2 years before we see another launch and you would not have me here saying that they have slowed down just because there was a delay in it. So I would be careful about that.

Senator COCHRAN. There has been some suggestion that because there have been some so-called moderates elected to office in Iran that Iran is changing. Does this affect the weapons of mass destruction and missile programs at all? Who actually controls these programs?

Mr. WALPOLE. Well, as Mr. Schindler said toward the end of his remarks and I said kind of up front in mine, there is the potential for change. But we do not see this altering the interest in weapons of mass destruction and the interest in missile programs to deliver them. The threats are not going to go away—Iraq is not going to go away, their perception of Israel is not going to go away, even if relations change with the United States.

That said, we do factor those types of changes into our assessments. When you do missile assessments, or almost any WMD assessment, you have to project many years out. Some of these missile programs can take a long time to develop. That is why we force ourselves to project 15 years out, knowing that there is great uncertainty in what things are going to look like 15 years out. At the same time, we are mandated by Congress to do an annual assessment of the missile threat. So if we see a change occur in the government in Iran that would cause us to alter that judgment, we will let you know about it. But at this point, we are still holding

firm to where we are with the judgment that probably Iran between now and the next 15 years.

Senator COCHRAN. A specific question, as a follow up on that subject, is whether the election of President Khatami has made any substantial change in the program, and has he made any statements publicly to your knowledge in support of Iran's missile program?

Mr. SCHINDLER. I can read a statement that he gave on August 1, 1998. That is, "The strategic status of the Islamic Republic of Iran in the world and in the region, in the Middle East in particular, demands that we have a strong military capability." It goes on to say that "defending oneself and deterring others from committing aggression is the most important right of every country."

We really have no indications that his threat perception really differs from those of other factions at this point or that there has been any significant change for the better in any of the key programs.

Mr. WALPOLE. And with the Shahab–3 launch in July 1998 and then two in 2000, I think actions speak louder than words on the missile program.

Senator COCHRAN. So there has not been any change in the pace of the Iranian ballistic missile program since his election?

Mr. WALPOLE. No.

Senator COCHRAN. It has not slowed down?

Mr. WALPOLE. Let me phrase it this way. Any slow down in the program I do not think we would attribute to political but rather to technical issues. We are still seeing the program proceed.

Senator COCHRAN. Has there been any indication of any desire on President Khatami's part to stop the missile program or any of the weapons programs?

Mr. WALPOLE. Not that I have detected.

Senator COCHRAN. Mr. Schindler.

Mr. SCHINDLER. Not that I am aware of either.

Senator COCHRAN. What about the parliament in Iran. We have heard that there have been some newly elected reformers in the parliament. Do they have any authority over Iran's ballistic missile program, and have they exercised any effort, to your knowledge, to make any changes in those programs?

Mr. WALPOLE. I am not aware of any efforts exercised to change the programs. And as I said before, we are seeing the programs proceed.

Senator COCHRAN. From your statement, Mr. Walpole, there appears to be a debate within the Intelligence Community about when Iran will be capable of testing an ICBM, there are differences of opinion at least, if not a debate. How difficult is it for analysts to predict accurately how rapidly a country can acquire long-range missile capability?

Mr. WALPOLE. Predicting how long it would take them from the could perspective, the technical capability perspective, is a lot easier than what is likely to happen. What we did last year was brought a bunch of U.S. weapons experts, designers and so on, together to help us sort out timelines on how quickly a country could so that we could have some benchmarks to run through. That was

fairly easy once we got that input to look at the data that we had on Iran and then decide how quickly they could do certain things.

When we started to overlay the likely judgments—that is, political factors, do we really think they would push this program, would they do an IRBM program first, which we all judged they would anyway, an intermediate-range program first—then you start to get a whole lot more difference of view, because it is not just physics, it is not just science, now you are factoring a lot of other issues together. But we even had some difference of view surface this year on the could in terms of how quickly they could do some of these better longer-range systems.

In intelligence work, you get the data and you try to put it together to come up with the answer. But we are not getting revelation intelligence here. There are uncertainties. And where there are uncertainties, it is open to disagreement. I view disagreement as healthy. It shows that we are actually thinking through the issues.

Senator COCHRAN. Can you make any judgment about the way foreign assistance appears to have moved the Shahab–3 program along faster than the Intelligence Community expected. In other words, do you think it would be prudent for policymakers, those deciding what steps to take to protect against possible threats, to plan on Iran having an ICBM capability sooner rather than later?

Mr. WALPOLE. Foreign assistance, particularly Russian assistance, indeed accelerated the Shahab–3 program for Iran. We have taken that acceleration, if you will, into account in our judgments for how quickly they could and are likely to be able to develop an ICBM. So we have already done that in our assessments.

Senator COCHRAN. According to your testimony, Iran receives foreign assistance from a number of sources for its ballistic missile program. How significant is foreign assistance to Iran's programs?

Mr. WALPOLE. I would say that foreign assistance is indeed significant. We had complete CSS–8s sold from China, we had the Shahab–3 sold from North Korea, we had Russian assistance in developing the Shahab–3 and in developing other capabilities. So the foreign assistance has been critical.

If we were to hypothesize that foreign assistance would cease right now completely, I still think we would have concerns with Iran's missile program. I do not think the program would dry up. It would take them longer to put together, but they would still be able to get missiles.

Senator COCHRAN. So foreign assistance would accelerate Iran's efforts to build long-range ballistic missiles, in your opinion. Is that correct?

Mr. WALPOLE. Phrase it foreign assistance will continue to accelerate it.

Senator COCHRAN. It will continue to accelerate the program.

Mr. WALPOLE. Yes. We factored that in. If you ended foreign assistance today, you would see some of our timelines shifting back a little but you would not see them move forward because of foreign assistance.

Senator COCHRAN. Could the assistance help Iran build more technologically advanced missiles than they might otherwise be able to do?

Mr. WALPOLE. Yes. In fact, that is why in my statement you see me talk about missiles patterned after the Taepo Dong system and then missiles drawing upon Russian assistance. And the missiles drawing upon Russian assistance are going to be better.

Senator COCHRAN. Could this foreign assistance result in Iran becoming self-sufficient in the design and development or eventually reduce Iran's need for foreign assistance?

Mr. WALPOLE. Yes.

Senator COCHRAN. What is the effect of Iran's relationship with North Korea on Iran's interest in developing an intercontinental ballistic missile?

Mr. WALPOLE. On their interest?

Senator COCHRAN. Yes, on Iran's interest and their work in developing an intercontinental ballistic missile.

Mr. WALPOLE. I think it has been an influence in their work. I think their interest in developing a ballistic missile capability is a regional interest, first and foremost. And so I am not sure North Korea really plays heavily in that, other than supplying technology that would help them fulfill that interest.

Senator COCHRAN. Do you have any evidence that North Korea would be willing to sell the Taepo Dong–2 or the 3-stage Taepo Dong–1 to Iran?

Mr. WALPOLE. I am not sure that is something we would want to go into in open session. I do not mean to imply that we have evidence, it is just that evidence of impending transfers is something that I would rather not go into here. I made the statement in my opening remarks that North Korea has exhibited a willingness to share missile technology abroad and might even try to do that under the guise of space launch vehicles. Let's just let that be the answer, unless you feel there is more we can say?

Mr. SCHINDLER. No.

Senator COCHRAN. Should the United States expect to see any real technological lag in missile capabilities between the two countries, Iran and North Korea?

Mr. WALPOLE. Well, right now, North Korea, although it was a failed attempt, has tried to put a satellite into orbit, and Iran is not there. So you have somewhat of a lag. But I would not read a whole lot into that because I think Iran is getting some assistance from Russia that in some ways would make them better able to develop some systems.

Senator COCHRAN. The unclassified summary of the 1999 National Intelligence Estimate states that a three-stage Taepo Dong–2 launched from North Korea could deliver a several hundred kilogram payload anywhere in the United States. What kind of weapons of mass destruction payload could reach the United States on a three-stage Taepo Dong–2 launched from Iran, and how much of the United States could Iran reach?

Mr. WALPOLE. I have to think of the ranges. North Korea, of course, is closer to the United States, so the range is not as far. Iran with a three-stage Taepo Dong–2 would be able to deliver a several hundred kilogram payload to parts of the United States. I am not sure it would reach all of the United States. I do not have the charts that tell me that. But because of the range differences there, I am not sure that it would. What we were postulating in

that estimate was a third stage that would not give it any accuracy, in fact it would be a highly inaccurate system.

Senator COCHRAN. You indicated that Pakistan seems to have purchased a missile from North Korea, the No Dong, and Iran has used that same missile from North Korea, improved it with Russian assistance, and given it a new name. Iran appears to have used Russian and Chinese assistance to modify the missile. Is that what you said, or did you say they just changed the name?

Mr. WALPOLE. No. Pakistan basically bought the No Dong and changed the name. Iran has wanted to modify the missile.

Senator COCHRAN. OK. And have they used Russian and Chinese assistance to modify the missile?

Mr. WALPOLE. I said Russian assistance.

Mr. SCHINDLER. I think we would want to discuss that in closed session. We have delivered some briefings recently in classified sessions where we have discussed that issue in detail.

Senator COCHRAN. What is the reason for the difference between the Iranian and Pakistani approaches?

Mr. WALPOLE. I could only speculate, but it appears that Iran wants to develop a basis to be more self-sufficient and understand the systems themselves, and Pakistan is more interested in having the systems.

Senator COCHRAN. Do you expect that Iran would purchase a complete ballistic missile system from North Korea if they wanted to field a system quickly? Would they use them as a resource, if they wanted to field a system quickly, just purchase the total system from North Korea? Is that unlikely?

Mr. WALPOLE. If they felt they needed one more quickly than they could develop one themselves, then they could try to buy one, absolutely.

Senator COCHRAN. We have also heard a lot about Russia's assistance to Iran's programs, not only ballistic missiles, but weapons of mass destruction programs. The Unclassified Report to Congress on Proliferation states that Russian assistance to Iran accelerated the development of the Shahab–3 medium-range ballistic missile. How did this assistance accelerate the program?

Mr. WALPOLE. Now, again, looking at—of course, that is your report, I will let you comment more on it—but just looking at the two scenarios that we just discussed briefly, one is the complete purchase. Obviously, they can buy the No Dong, label it, and fly it, and then there is no acceleration there. The acceleration we are talking about is accelerating Iran's program to get a 1,300 kilometer range missile from what they would have done had they tried it completely on their own. So it is not an acceleration compared to a complete sale.

Senator COCHRAN. Would you expect continued Russian assistance to help accelerate Iran's longer-range ballistic missile programs?

Mr. WALPOLE. I would.

Mr. SCHINDLER. I would, too. I would just add that in terms of the Russian assistance that we have seen in recent years, it has been pretty much across the board in terms of providing training for personnel, assisting them in testing components, but also provision of some components.

Senator COCHRAN. In addition to its apparent desire to develop ICBMs, Iran claims it is developing a space launch vehicle. The unclassified summary last year states that "Iran will probably test a space launch vehicle with ICBM capabilities within the next few years." Would an Iranian space launch vehicle provide Iran with an initial ICBM threat availability based on the criteria you used in the National Intelligence Estimate?

Mr. WALPOLE. A space launch vehicle and a missile are essentially the same. The difference is one is intended to put a payload into orbit, the other is intended to put a payload into the ground. So what you need is a reentry vehicle, a vehicle capable of reentering the atmosphere and not burning up. So that if Iran develops a space launch vehicle, it would be capable of delivering payloads, if they developed a payload, to points on the Earth.

Now a Taepo Dong–1 is so range-payload limited that if Iran had a Taepo Dong–1 space launch vehicle, it would be able to deliver very, very small payloads to the United States as an ICBM. That is why I had said in my opening remarks that we judged they were unlikely to develop that as an ICBM, it just is too limited. But the capability to deliver a payload with a space launch vehicle is pretty well inherent.

Senator COCHRAN. This I think should be directed to you, Mr. Walpole, but Mr. Schindler can respond as well. We took a trip in April to Moscow and we had a meeting with the First Deputy Minister of Atomic Energy Ivanov and we asked him about the assistance to Iran's nuclear weapons program. He said that there was no Russian assistance to that program. Do you agree with that? What is your reaction to his comments?

Mr. WALPOLE. My reaction is I am not surprised. And I will let Mr. Schindler add to that.

Mr. SCHINDLER. No, the position that many Russian officials take is that Russian assistance is solely dedicated to civilian nuclear efforts in Iran. That said, we are concerned by some of the dealings that some Russian entities have with Iran and the U.S. Government has been attempting to sensitize Russian officials to a number of these cases, most recently, one that was reported in the press just this week with the Yefremov Institute.

Senator COCHRAN. I read about that. That is near St. Petersburg, that institute, and there was a transaction being planned.

Mr. SCHINDLER. There was some evidence that the Iranians were attempting to acquire a laser isotope facility that could be used——

Senator COCHRAN. And the whole point was that would cost a lot more than you would spend if you were just developing a civilian nuclear power program.

Mr. SCHINDLER. It would be much easier——

Senator COCHRAN. You could get the technology a lot more efficiently in other ways, other sources, other procedures, right?

Mr. SCHINDLER. You would buy the low-enriched uranium on the market.

Senator COCHRAN. What is your assessment, if you have one, of when Iran can have a nuclear weapon?

Mr. SCHINDLER. Mr. Chairman, we are very concerned about the fast pace of the Iranian nuclear program. We would like to avoid giving estimates in public as to when Iran might have a nuclear

weapon. It depends on a number of variables and these are all variables we would be very pleased to elaborate on in a classified setting.

Senator COCHRAN. On the question of proliferation, where countries are supplying technology and assistance to Iran, what effect does this have on the Intelligence Community and its ability to provide advance warning of Iran's long-range ballistic missile program or WMD programs?

Mr. WALPOLE. If it is a complete sale, which I have indicated before was unlikely, but if a country were to sell Iran a complete ICBM, a mobile ICBM, we would not be able to give a lot of warning of that.

Senator COCHRAN. You would not?

Mr. WALPOLE. We would not. If we detected the negotiations for the sale or some indication that that was going on, then that would be your warning window. But if the sale were such that what you really detected was the delivery or you detected them setting it up, that is not a lot of warning. So a complete sale we have said we would not be able to give a lot of warning of. If a country is developing an ICBM, if they are doing a testing program, even with assistance, even if they buy somebody else's components and try to reverse engineer them and so on, we can walk through that and give some warning.

If we look at the record of warning, the Intelligence Community first warned about a North Korean ICBM in 1994. They did not test the Taepo Dong–1, which failed, until 1998. Now we were surprised that they put a third stage on the Taepo Dong–1, so I do not want to try to take credit for warning about what they would test, because if we were held to the standard that we would have to warn exactly what configuration was going to be tested 5 or 10 years from now, I would get it wrong every time. If you ask me to warn that they are going to work on an ICBM, I am probably going to be a little better at that.

Now if we look at Iran, your opening statement said something that kind of surprised me. You said that in 1995 we judged that they had neither the motivation nor the capability to develop an ICBM. I have to go back and relook at 95–19, the famous NIE, but I think what it really was saying was that they would not have it by 2010 is what that judgment was saying. We have been following Iran's missile programs for many years. In the mid-1990's we began to get concerned about longer-range programs for Iran. Even when 95–19 was written we were looking at longer-range programs. We did not think they would get it at the time until after 2010.

So we have been warning about Iran looking at ICBMs for many years, too. And they still have not tested one. So warnings are there but it is getting harder to warn what the systems are going to look like because foreign assistance can help somebody change what a system will look like. We do not know to this day, for example, if North Korea got foreign assistance with the third stage. We know they have the capability to put one together themselves, it was a very small third stage, but we do not know the answer to that question.

So there are a lot of unknowns that make this job hard. I guess what I am saying is we do not want to say that we don't have the ability to warn, we can still provide a lot of warnings, but they are not going to be the refined warnings that some would be looking for.

Senator COCHRAN. In connection with the chemical warfare and chemical weapons production capacity, in Mr. Schindler's testimony, you indicate that Iran has a large and growing production capacity and already has produced a number of CW agents. Didn't Iran sign the Chemical Weapons Convention? And if so, is this not a direct contravention of its Chemical Weapons Convention obligation?

Mr. SCHINDLER. Mr. Chairman, the Intelligence Community itself does not make compliance judgments. But nonetheless, what I have said in my statement is that we assess that they have a stockpile and a significant production capability which would appear to be inconsistent with the CWC.

Senator COCHRAN. Can you speculate as to why Iran would sign the Convention and then be in obvious violation, or if not in obvious violation—is it an obvious violation?

Mr. SCHINDLER. Well, Iran may conclude that given the nature of modern technologies, that it can bury its CW capability in its industrial infrastructure and it will not be detected.

Senator COCHRAN. Can Iran, if they wanted to, circumvent the Chemical Weapons Convention by acquiring technologies and materials that are dual use in nature?

Mr. SCHINDLER. It could.

Senator COCHRAN. What are the implications of this pattern of activity for its Non-Proliferation Treaty obligations?

Mr. SCHINDLER. For its NPT?

Senator COCHRAN. Right. Nuclear Non-Proliferation.

Mr. SCHINDLER. What are the implications?

Senator COCHRAN. If the pattern of activity, is that transferable to other obligations and other treaties?

Mr. WALPOLE. Well, we keep a close eye on all of Iran's activities and all of Iran's commitments relative to that. Because we see them doing things that are not consistent with one agreement, of course we are going to keep a close eye on what they are doing in other areas. Is that what you mean?

Senator COCHRAN. Right. According to the Unclassified Report to Congress on Proliferation, Iran has started supplying other nations with missile technology. In fact, in testimony to the Senate Armed Services Committee, the Director of the CIA George Tenet said "Iran's existence as a secondary supplier of this technology is the trend that worries me the most." Can you give us any information as to which nation or nations Iran is now supplying technology to?

Mr. SCHINDLER. We mentioned—I do not think we can do that in open session.

Senator COCHRAN. OK. Does the emerging trend of missile commerce between states like North Korea and Iran concern you as much as it does Director George Tenet?

Mr. SCHINDLER. Yes.

Mr. WALPOLE. Yes. That one is easy. Give us more like that.

Senator COCHRAN. If the U.S. has hardly affected missile proliferation by countries like Russia and China, how much do you expect we will be able to affect North Korean or Iranian missile exports?

Mr. WALPOLE. I guess I have a little optimism in me. I like to always hold out the hope that we are going to be able to affect these countries. Last year's missile estimate said that we expected North Korea was likely to test the Taepo Dong–2 in 1999, and they did not do it because of some political deals that we had worked out. So I guess I like to hold hope that maybe we will be able to work things out with North Korea to where they would not test the Taepo Dong–2 and they would not share the technologies with others, and maybe down the road even do the same with Iran.

Now while I hold out that hope, you can see that my projections are not driven away from where they are because of that hope. So it is kind of hard to answer that. I would like to see nonproliferation efforts succeed in stopping the programs, but we have to make projections where we see them falling. Our projections are that they are not going to stop the programs at this point.

Senator COCHRAN. Mr. Schindler, anything to add on that subject from you?

Mr. SCHINDLER. I would just add that I think we would differentiate between Iran and North Korea in terms of the potential threat to U.S. interests in terms of them transferring missiles to other countries at this point in time. The North Koreans are in an active marketing effort and their products are more tested, so they are much more active there.

Senator COCHRAN. Thank you very much. You have been a big help to our understanding of the situation, the nature of the threat, the development programs that are underway in Iran, the proliferation activity, transfers to and from the country, to the extent that these matters could be discussed in an open session. We do have to make decisions on levels of funding of programs that are designed to protect against these threats and to try to help prevent proliferation by the use of the powers that our government can lawfully bring to bear on those issues. So you have been a big help to us and it is a very important undertaking for us to all understand what the facts are and what is going on.

Mr. SCHINDLER. Thank you.

Mr. WALPOLE. Thank you. Senator, if I could just add one more point to the last question and answer on the nonproliferation front. I keep reminding myself of this as well. The Condor–2, I do not know if you remember that one, that was a two-stage system being developed jointly by Iraq, Egypt, and Argentina. That we log in as a nonproliferation success. We actually stopped that program. And I am glad we did, I would not want to see Condor–2s all over the world today. That is probably part of what is behind my optimism. We have seen some successes in nonproliferation. We need to continue to pursue those efforts to try to get them to work. But at the same time, we have got to make our projections based on where we think the trends are going.

Senator COCHRAN. Thank you very much. We appreciate it. You may stand down.

We will have our second panel come forward. We appreciate very much the cooperation and the presence of Dr. Stephen Cambone, Director of Research at the Institute for National Strategic Studies of the National Defense University here in Washington; and Michael Eisenstadt, who is a Senior Fellow at the Washington Institute for Near East Policy. Thank you both for being here. We appreciate your presence.

Dr. Cambone, you may proceed.

TESTIMONY OF STEPHEN A. CAMBONE, DIRECTOR OF RESEARCH, INSTITUTE FOR NATIONAL STRATEGIC STUDIES OF THE NATIONAL DEFENSE UNIVERSITY

Mr. CAMBONE. Thank you, Senator. It is a pleasure for me to be here and a honor to appear before the Subcommittee. I do have a prepared statement that, with your permission, I would like to submit for the record and to just simply draw a few summary statements from it in the opening, and then proceed to questions if you would like.

Let me preface my remarks by saying that what I have to say are my views alone. I am an employee of the National Defense University, which is a government agency, and my views are my own and not theirs and do not represent anyone else at the University.

My remarks here today are built around what I anticipated my friend, Bob Walpole, would have to say as a result of having followed the way in which the NIEs have developed, and particularly the latest set of comments in which the NIEs and the reports from the National Intelligence Council have begun to concentrate on what might be likely to happen, the motivations and the difficulties of assessing those motivations, particularly with respect to the Iranian program. And so I attempted to build my remarks around that issue, with the view that if we were to take Bob Walpole at his word that warning has, indeed, been given by the Intelligence Community on the question of Iran, its ballistic missile programs and its nuclear weapons programs, then it seems to me it is time to heed that warning and to react accordingly.

And so, if I may, I would like to briefly outline why I think we need to take seriously the pace and the direction of the Iranian program, and then to outline a number of points where I think we need to begin to prepare to meet the consequences of Iran's programs.

In my judgment, Iran now has the capability with readily available foreign assistance to develop and to deploy, with little testing, ballistic missiles with sufficient range to reach the United States. In assessing Iran's capability, we cannot discount the possibility that if it were to accept from foreign sources a fully developed system, that is a three-stage Taepo Dong–2 from North Korea, it could go ahead and pose that threat to us even without testing.

And the reason I make this point, and I know it to be a controversial one, is, again recalling what Bob Walpole just told us, the North Koreans were preparing to test the Taepo Dong–2 in 1999, according to the sources that we have in the open, and so therefore this is a system that has been progressing over time. And we need to remind ourselves again that the Taepo Dong–1 was

tested with three stages without ever having been tested prior to that.

So it is a case where I think we have to begin to lend some credibility to the proposition that transfers can occur and deployments made without the kind of testing that we would expect to see.

Second, there remains some uncertainty whether Iran now possesses or will soon possess nuclear weapons with which to arm its ballistic missiles. In my judgment, U.S. policy toward Iran should take as its point of departure the findings of the Rumsfeld Commission in 1998. That was that by relying on foreign sources of fissile material, Iran could acquire nuclear weapons in 1 to 3 years of a decision that they are essential to its security. And, moreover, policymakers should assume that they, policymakers, are unlikely to know when or whether such a decision has been taken.

And so I do believe that we need to start reviewing closely, and revise as appropriate our policies in a way that reflect this new reality. And I believe the reality can be summarized in this way. That in a future crisis or conflict involving Iran, the United States will need to honor the threat—an expression that one used to hear often and which I think is useful in this case—need to honor the threat Iran could pose to the interests of the United States.

Now there are those who will argue that I am presenting a worst case scenario. They will make many arguments why Iran would not pursue a long-range ballistic missile program, why it would not pursue an ICBM program, and so forth. But it seems to me that the motivations and intentions of other countries are always difficult to assess, and this is especially true in the case of Iran, a nation with which, frankly, the United States has had little contact over the last 20 years and that is governed by a regime that is very different than our own.

That said, U.S. policymakers should suppose nonetheless that the Iranians are no less capable of understanding the value of nuclear weapons and ballistic missiles than are those who govern North Korea, who govern Pakistan, who govern India, and even Iraq. Each of those nations has used its weapons programs to alter its strategic circumstances in significant ways, and I have no doubt that the Iranian leadership understands that it can make use of its ballistic missiles and nuclear weapon programs to change its strategic circumstances.

In my prepared remarks I have a description of what I think the changes are that Iran seeks. I will skip over any detail but mark three points.

First, Iran clearly is looking to deter outside intervention in its domestic and its national security affairs. They intend to do that for nations nearby, like Iraq, nations at intermediate range, like Israel, and nations at longer range, like the United States.

Second, clearly Iran wishes to establish itself as a leading power in the Middle East/Southwest Asia region and they are having some effect in establishing themselves. I think their ballistic missile and weapons programs have some measure of credit for the effect that they have had. And that it has become apparent, that is, the effect they have in establishing themselves, that I think prompted Secretary Cohen's comment in April of this past year toward the Gulf States when he was visiting that they, the Gulf

States, should take care in trusting too much in the proposition that "Iran wants a peaceful and stable relationship with them."

Third, I think Iran is definitely interested in reducing to a vanishing point the influence the United States has on the affairs of the region. Iran's rising strength and confidence has begun to persuade other states in the region that they need to begin assessing their own relationship with the United States as well. I think we are in for a fairly rocky period of time in our relations with countries in that part of the world.

My prepared statement has a bit of history on the Iranian programs. I will not go through them with you here, except to come back to remind again of the quotation from the Rumsfeld Commission's report in 1998 on their nuclear weapons program. And here let me quote it in full:

"The Commission found that Iran has a nuclear energy and weapons program which aims to design, develop, and as soon as possible produce nuclear weapons. The Commission judges that the only issue as to whether or not Iran may soon have or already has a nuclear weapon is the amount of fissile material available to it. If Iran were able to accumulate enough fissile material from foreign sources, it might be able to develop a nuclear weapon in only 1 to 3 years."

Now, of course, this turns on the question of availability of fissile material. But we know there is an awful lot of fissile material available in this world. We ourselves, the United States, have taken highly enriched uranium out of a former Soviet state. Britain joined with us in another effort to take it out of a second state. And we know that, despite the programs that have been undertaken in the context of the Nunn-Lugar effort to take care of "loose nukes," a recent *Washington Post* article underscored how poorly that program is translating in Russia and how uncertain are the people who work in those programs in Russia that their future is in any way secure. And it only gives one cause to worry that transfers of technology, of information, of people, and maybe perhaps even of material was taking place whether acknowledged or unacknowledged by the Russian government.

We know that kind of transfer is not unknown. There are persistent reports, for example, that China transferred material to Pakistan. Nor is diversion of material from civilian programs to clandestine programs unknown, as we find in Iraq and in North Korea. And then we have the case of South Africa, where we all, I think, found it interesting that it had a number of nuclear weapons in their arsenal.

Let me turn then to "honoring the threat" and conclude with six points where I think we ought to begin paying some attention.

First, it seems to me we have to think about the posture of U.S. forces. Constant attention is needed to maintain our capability to undermine the utility to Iran of nuclear weapons and ballistic missiles. This includes, but is not defined by, deployment of ballistic missile defenses in the region and to defend the American homeland as well. It is also the case that forces deployed by the United States to the region must assure Iran's neighbors, those that depend on us, that our forces can perform their assigned missions, including, if necessary, suppression of ballistic missile attacks.

Second, we have to take a new approach to stemming the supply of expertise, materials, and technology to Iran. Their programs are already well advanced, as Bob Walpole told us. Even if the foreign assistance were to end tomorrow, those programs would still be a matter of concern. Nonetheless, the Iranians continue to take in foreign assistance and we have to find ways different than those we have practiced thus far to stem that proliferation.

Third, we need to begin worrying about the consequences for the remainder of the region of Iran's programs. We know that Iraq continues with its own programs. We know that Pakistan has one. We know that Saudi Arabia has ballistic missiles that it may soon need to replace. We know that the Israelis are keeping a very close eye on what is taking place in Iran. We know that Turkey is concerned about what is taking place in Iran. And so, as the Iranian program begins to take shape and become more apparent, we are going to see a reaction in the region and we need to be prepared here in the United States to deal with that consequence.

Fourth, we have to talk with our European friends and allies. They are the object of a charm offensive from Iran for Iran to gain legitimacy in the international arena. We clearly need to make clear to our European friends exactly how serious we take the Iranian threat and elicit their cooperation and assistance in dealing with it.

Fifth, it is time for us to do a net assessment of our interests in the Middle East/Persian Gulf/Southwest Asia region. Iran's emergence in diplomatic and economic terms coupled with its advancing military capability, on the conventional front plus its ballistic missile and nuclear weapons program, turns it into a true strategic power in the region and one which we need to take into account in our policies in the region. I do not think we do that sufficiently today.

And last, we do have to look at U.S.-Iranian relations. This is probably the most difficult step for American political leaders to take. The memories of the 1979 hostage crisis, two decades of vilification, the toll taken by state-sponsored terrorism, and the determination with which Iran seeks to displace the United States in the region make it difficult to come to this issue without grave reservation. Nonetheless, there is change going on inside of Iran and it ought to be in our interest to see that change continue. But we cannot be misled by what is taking place because what we are likely to see is an Iran which, while more popular in its government, will remain Islamic in its foundations. And so while it appears to be, and may in fact be in the eyes of its own people, a democratic state, it is one which is very different than our own with ambitions very different from ours. And so we need to approach it in a way that we are very careful not to transform ourselves into a demander of change, being willing to offer blandishments and rewards to Iran for their behavior, but rather to approach them from a position where each side is clear-eyed in its interest and we, for our part, are willing to sustain our position if in fact we find there is no basis for friendly agreement.

So let me conclude then. In the last 5 years, we have clearly witnessed the development of nuclear weapons programs and ballistic missile programs in Iran that provide it with the potential to

threaten American interests. Iran's programs have been, and remain, dependent on foreign assistance. But that fact does not alter the conclusion that Iran could deploy, in a relatively short time, weapons systems that could threaten the American homeland.

Over the same period of time, they have been working assiduously to alter their position in the region and in the international system. They are looking to establish themselves as a legitimate state in the international system. This is not something we should overlook because there is every prospect now that we will see in the near future what is considered to be a legitimate state in the international system newly armed with nuclear weapons and ballistic missiles. And whether those nuclear weapons are acknowledged by Iran, whether they are admitted by us, or they are kept, as it were, in the basement, the fact of their programs will change, and have changed, the Iranian strategic position. And it is one which it is time we for our part address directly. Thank you.

[The prepared statement of Mr. Cambone follows:]

PREPARED STATEMENT OF DR. STEPHEN A. CAMBONE [1]

I. Introduction

Mr. Chairman, it is an honor for me to appear before the Committee to discuss the issue of Iran and weapons proliferation.

Iran has benefited from proliferation activity by North Korea, China and Russia. It has made use of foreign experts, testing, technology and weapons systems to transform its military posture. The Congress has been especially concerned with proliferation activity that has enabled Iran to develop ballistic missiles and, possibly, nuclear weapons.

In my judgment, Iran now has the capability with readily available foreign assistance to develop and to deploy, with little testing, ballistic missiles with sufficient range to reach the United States. In assessing Iran's capability we cannot discount the possibility that if it were to accept from foreign sources a fully developed system, e.g., a three stage *Taepo-Dong 2* from North Korea, rather than components and technical assistance, it could deploy it without testing.

There remains uncertainty whether Iran now possesses or will soon possess nuclear weapons with which to arm its ballistic missiles. In my judgment U.S. policy toward Iran should take as its point of departure the findings of the Rumsfeld Commission that, by relying on foreign sources of fissile material, Iran could acquire nuclear weapons in one to three years of a decision that they are essential to its security. Moreover, policy makers should assume that they are unlikely to know when or whether such a decision has been taken.

Consequently, I believe U.S. policy toward Iran needs to be reviewed closely and revised as appropriate to reflect a new reality. That reality is that in a future crisis or conflict involving Iran the U.S. will need to "honor the threat" Iran could pose to the interests of the United States. Put another way, the U.S. needs to begin now to reassess its policies, strategies and military capabilities as they apply to the Middle East and Southwest Asia. It needs to do so in light of the probability that Iran is likely to possess the means to hold the U.S., its deployed forces and our allies at risk by means of ballistic missiles armed with nuclear weapons.

There are those who will argue that I am presenting a worst case scenario. Iran, they will argue, has little to gain and much to lose by developing a nuclear weapons capability and even more to lose by coupling it to an ICBM-range missile with which to threaten the United States. A nuclear weapons program, it is argued, would risk Iran's standing in the international community, not least because it would violate

[1] Dr. Cambone served as Staff Director for the Commission to Assess the Ballistic Missile Threat to the United States (Rumsfeld Commission). He has served on the staff of the Director, Los Alamos National Laboratory, as Director of Strategic Defense Policy in the Pentagon and as a Senior Fellow at the Center for Strategic and International Studies. He is currently on detail from the National Defense University to serve as Staff Director for the Commission to Assess U.S. National Security Space Management and Organization.

The views expressed by the witness are his own and do not necessarily reflect those of the National Defense University, the Department of Defense or any other U.S. government department or agency.

Iran's NPT pledge to remain a non-nuclear weapons state. An ICBM program, it is argued, would gain nothing for Iran because should it attack the United States—or perhaps only threaten to attack—it would be the subject of instant and catastrophic retaliation.

The motivations and intentions of other countries are always difficult to assess. This is especially true in the case of Iran, a nation with which the U.S. has had little contact in 20 years and that is governed by a regime very different from our own. That said, U.S. policy makers should suppose that Iranians are no less capable of understanding the value of nuclear weapons and ballistic missiles than are those who govern North Korea, India, Pakistan and even Iraq. Each of those nations has used its weapons programs to alter its strategic circumstances in significant ways.

Like North Korea, India, Pakistan and Iraq, Iran seeks to change its strategic circumstances.

First, it seeks to secure itself from outside intervention in its domestic and national security affairs, what it refers to as establishing a deterrent capability. This would require an ability to project a deterrent in the fashion of France during the Cold War—*touts azimuth.* Iran has already taken steps to build a deterrent capability against nearby Iraq, which is its most ambitious competitor for leadership in the region and a long-term adversary. The deterrent is intended to affect countries further away that Iran perceives as a threat, for example, Israel. Israel can pose a countervailing deterrent to Iran both by frustrating Iranian political objectives in the region and by its ability to directly threaten Iranian territory. And Iran is clear in its desire to have a deterrent to American power, which can affect Iran's regional interests from any distance—near to far—and by any means—political, economic or military. Second, Iran seeks to establish itself as a leading power in the region. This requires a mix of political and economic as well as military strength. Efforts to establish this position are evident in Iranian diplomacy toward the Gulf States. The apparent effect of those efforts prompted Secretary Cohen to warn in April of this year that the Gulf States should take care in trusting too much in the proposition that "Iran wants a peaceful and stable relations [sic] with them." Efforts to improve Iran's economic circumstances can be seen in its program to develop new oil and gas fields within Iran, its involvement in affairs related to Caspian Sea oil and pipelines (which has strategic implications as well) and its own proposals to build a pipeline through Pakistan to deliver oil to India. Apart from its nuclear and missile programs, Iran has been rebuilding its military. Though far from complete, the effort is far enough along that Iran could send a message to neighboring states by mobilizing two divisions of regular troops (and not Revolutionary Guards) to signal its opposition to instability emanating from Afghanistan and by proposing naval maneuvers with Gulf States.

Third, Iran wants to reduce to a vanishing point the influence of the U.S. on the affairs of the region. Iran's rising strength and confidence, coupled to their internal domestic pressures, has contributed to quiet requests to the U.S. from states in the region for a reduction in the American military footprint. Iran is conducting a diplomatic and political offensive among states of the European Union. This has resulted in visits to London, Paris and Berlin for Iran's leaders. These American allies understand the game Iran seeks to play, and express their solidarity with the U.S. on such issues as non-proliferation and human rights. But in the end, Iran undoubtedly hopes to build a second center of opinion in the West more favorably disposed to its interests than the U.S. has been or is likely to be.

In my judgment, Iran's nuclear weapon and ballistic missile programs are essential to achieving these three objectives. As those programs develop, they could provide a deterrent to interference in Iranian affairs, a firm foundation for asserting a stabilizing leadership role in the region and a countervailing power to that of the United States.

In my view, these programs are essential to Iran's broader strategic interests. It is dangerous for the U.S. to assess the risks and benefits of such programs from the vantage point of those who see no value in and hence no reason for Iran to pursue a nuclear weapon and ballistic missile program. Once the U.S. grasps the scope of Iranian interests and the role of its programs in realizing those interests, the more apparent becomes the need to "honor the threat" posed by Iran to American interests.

II. Iran and Proliferation

A. Ballistic Missiles

Iranian interest in ballistic missile acquisition is traceable to its war with Iraq in the mid-1980's. Iraq's modified SCUD missiles out-numbered and out-ranged those of Iran. Iran turned to North Korea to supply it with ballistic missiles. North

Korea obliged, sending Iran SCUD Bs, 77 of which were fired against targets in Iraq during the second "War of the Cities" in 1988. There was a certain irony in this transaction. The missiles provided by North Korea had been reverse-engineered from SCUDs it had obtained from Egypt in the early 1980's. During the Iran-Iraq war, Egypt was a staunch supporter of Iraq. Proliferation activity knows no loyalties.

By the early 1990's Iran had turned again to North Korea to acquire ballistic missiles. (Some analysts believe that Iran was involved in North Korea's *No Dong* program from its outset in the late 1980's and that it provided substantial funding for its development.) By the mid-1990's Iran had as many as ten *No Dongs*—either in component form or as completed missiles—which are evolved from SCUDs and are thought to provide the building blocks for North Korea's *Taepo Dong* missiles. Over the same period Iran had also begun to establish the infrastructure that would permit it to produce ballistic missiles within the country, ending its dependence on outside suppliers. By the early to mid-1990's Iran had also secured considerable technical support from Russia and China for its SCUD-based program, support that continues to this day.

The result of proliferation activity involving Iran is worth underscoring. In roughly a decade—from the time it became involved in North Korea's *No Dong* program—Iran has arrived at the threshold of ICBM capability. Recall the judgment of the Rumsfeld Commission in 1998:

> Iran now has the technical capability and resources to demonstrate an ICBM-range ballistic missile, similar to the [North Korean] TD–2 [itself based on scaled-up SCUD technology], within five years of a decision to proceed—whether that decision has already been made or is yet to be made.

This judgment was acknowledged in the National Intelligence Council's (NIC) report in September 1999. Much has been made of the fact that analysts who contributed to this report were unable to agree on the likely direction and timing of Iran's missile programs, that is, of Iran's *intentions* for its programs. This is hardly surprising and misses the point. It is not surprising because the U.S. has no official presence—embassy, consulates, trade offices—in the country through which it could gain first hand knowledge of affairs in Iran. Tight security limits the availability of people and information that might shed light on Iranian plans and programs. Through deception and denial efforts the government and security services work hard to frustrate intelligence collection by technical means. Under such conditions it is very difficult to confirm intentions with high confidence.

Readers of the NIC's report who focus on the disagreements about Iranian intentions miss the underlying point of the report—that Iran's program is moving along, that all postulated paths lead to a ballistic missile capability of ICBM range and do so within a reasonably short period of time. With respect to Iran's actual *capability,* the NIC report confirms the Rumsfeld Commission's judgment:

> ". . . most analysts believe [Iran] *could* (emphasis added) test a three-stage ICBM patterned after the *Taepo Dong–1* SLV or a three-stage *Taepo Dong* 2-type ICBM, possibly with North Korean assistance, in the next few years."

Iran's potential to test a *Taepo Dong*-like missile in the next few years is a product of more than a decade of close North Korean-Iranian cooperation on SCUD-based programs. That cooperation was demonstrated again in the last year. Press reports suggest that in November 1999 North Korea transferred 12 *No Dong* engines to Iran. It is reported that those engines were tested in February 2000. Iran successfully flight-tested the *Shahab 3*, which is its version of the *No Dong*, on July 15, 2000. In fact, in March 2000 the Iranian defense minister suggested the *Shahab 3* was fully operational as of February. In public testimony, the U.S. NIO for Strategic Programs confirmed the No Dong engine transfer. He called the engines critical to the *Shahab 3* program and "any extensions of the *Shahab 3* program," by which he meant an Iranian version of the *Taepo Dong*.

In addition to North Korea, Iran has had assistance from Russia and China in its SCUD-based programs. There is little reason to believe that Iran could not procure, or that one of its proliferation partners would not supply, whatever additional technical support it may still require to develop, test and deploy an ICBM-range missile. A three-stage *Taepo Dong–2* is said by the intelligence community to have sufficient range to reach most of the U.S. from North Korea. Such a missile developed or deployed in Iran would have sufficient range to reach the northeastern United States.

Iran also has the potential to pursue an ICBM-range program by building off Russian and Chinese assistance to programs other than its SCUD-based program. That

is, Iran could choose to develop an ICBM different from the North Korean *Taepo Dong*. The Rumsfeld Commission reported that Iran "is reported to have acquired engines or engine designs for the RD–214 engine, which powered the Soviet SS–4 MRBM and served as the first stage of the SL–7 space-launch vehicle." It also reported that China "has carried out extensive transfers to Iran's solid-fueled ballistic missile program" and that Iran has "developed a solid-fueled rocket infrastructure. . . ." Other sources report that Iran has received the RD–216 engine from Russia. It powered the SS–5 IRBM and the SL–8, a space-launch vehicle still employed by Russia. The step from a space launch vehicle to an ICBM is not very large or difficult. The assistance of Russia and China in these areas provides Iran with an alternate approach to ICBM-range missiles.

The Iranians discuss two programs beyond the *Shahab* 3, referring to them as the *Shahab* 4 and *Shahab* 5. The characteristics of these programs—that is, whether they are Iranian versions of the *Taepo Dong* or single or multiple stage variants on the Soviet-era SS–4 and SS–5 or something else—are unknown. It is not impossible that the names cover a number of Iranian programs. But whatever names they may have, the evidence suggests Iran, like every other ballistic missile power, is developing missiles of longer and longer range.

B. Nuclear Weapons

There is no doubt that Iran could arm its ballistic missiles with chemical or biological warheads. Greater uncertainty exists with respect to nuclear weapons. The Rumsfeld Commission found that Iran:

> ". . . has a nuclear energy and weapons program which aims to design, develop and, as soon as possible, produce nuclear weapons. The Commission judges that the only issue as to whether or not Iran may soon have or already has a nuclear weapon is the amount of fissile material available to it. . . . If Iran were to accumulate enough fissile material from foreign sources, it might be able to develop a nuclear weapon in only one to three years.

The key to Iranian nuclear weapons capability is the acquisition of weapons-grade uranium or plutonium (depending on the designs Iran may choose). Recent experience shows that the possibility of procuring fissile material from abroad cannot be discounted.

The U.S. purchased 600 kg of HEU from Khazakstan. Britain and the U.S. removed almost 9 pounds of HEU from Georgia. It would be dangerous to suppose that only the U.S. and the UK could have success in such transactions. This is especially so given that within eight of the states of the former Soviet Union there is reported to be some 700 tons of fissile or near-fissile material located at over 50 sites. To be sure, the U.S. is working hard to bring that material under protection, accountability and control. But as highlighted in a recent *Washington Post* article, that effort has been fraught with difficulty and delay, and it cannot be expected to make up for notoriously bad record-keeping by FSU officials or the disillusionment and poverty of current officials.

Foreign acquisition of material for weapons is not unknown. There are persistent reports that China transferred material to Pakistan for its first weapon. Nor is diversion of material from civilian programs to clandestine programs unknown, as has been the case with Iraq and North Korea. Nor are wholly clandestine programs unknown, as the U.S. learned with respect to the program in South Africa. Hence, the position of the intelligence community as reported in the press in January 2000—that it can no longer rule out the possibility that Iran has acquired nuclear weapons—is not surprising.

In my judgment, the combination of what the U.S. knows of Iran's programs and activities and past experience should lead policy makers and Members of Congress to err on the side of caution in the matter of an Iranian nuclear weapons program. That is, the U.S. needs to take seriously that the "absence of evidence is not evidence of absence"—and to fashion policy on the same basis as urged by the Rumsfeld Commission with respect to ballistic missiles. That is, Iran could possess nuclear weapons capability within a reasonably short time of a decision to acquire it, and that during that time the U.S. might not be aware that such a decision had been made.

III. Honoring the Threat

In a future crisis or conflict involving Iran, I have argued, the U.S. will need to "honor the threat" posed by an Iran that could possess the means to hold the United States, its deployed forces and our allies at risk by means of ballistic missiles armed with nuclear weapons. To do so, I suggested, requires that the U.S. review its poli-

cies, plans, strategies and forces as they relate to the Middle East and Southwest Asia. I will conclude with a short list of issues for examination.

First, the structure and posture of U.S. forces: Constant attention is needed to maintain the capability to undermine the utility to Iran of nuclear weapons and missile programs. This includes, but is not defined by, deployment of ballistic missile defense in the region and to defend the American homeland as well. It is also the case that forces deployed by the U.S. to the region must assure Iran's neighbors that they can perform their assigned missions—including, if necessary, suppression of ballistic missile attacks. It is likely that this capability will need to be demonstrated and that regional leaders will want to be apprised of U.S. thinking about, but not be implicated in, the planning or execution of those missions. Of greater importance to those leaders is an assurance that in the event of a crisis or conflict the security burden will be shared equitably. The U.S. will need to consider as well whether additional attention is needed to reinforce the security and raise the deterrent threshold for allies outside of Iran's immediate neighborhood that are potentially at risk, particularly Turkey and Israel.

Second, new approaches to stemming the supply of expertise, materials and technology to Iran: The U.S. might consider altering its approach toward nations and non-state actors supplying Iran's programs. Rather than sanction entities within those nations, the U.S. might consider taking countervailing action. The suppliers to Iran are contributing to the development of a capability that Iran could use to threaten important, perhaps one day vital, interests of the U.S.. Those suppliers need to be put on notice that the U.S. will treat their actions as a direct threat and act accordingly.

Third, regional proliferation: The Middle East/Southwest Asia region is already one in which considerable proliferation activity occurs. Should the Iranian programs continue to progress, it is likely that other nations will find themselves confronted with the question: how shall we respond? The U.S. needs to consider how far it can discourage additional countries from deploying—explicitly or "in the basement"—missile and weapons programs—or substantially modernizing those they do possess. In those cases where countries decided they will proceed, the U.S. will need to consider how it would respond and the implications of its response for global arms control regimes.

Fourth, consultation with our European friends and allies: Britain, France, Germany and Italy, among others, have their own interests in the Persian Gulf and in repairing their ties with Iran. They need to understand the seriousness with which the U.S. takes the potential threat posed by Iran and the measures it is prepared to take to mitigate that threat. The U.S. should review with them, and seek cooperation in, a range of diplomatic, economic and military measures it is prepared to take to undermine the utility of its programs to Iran and to stem the continuing flow of support to those programs.

Fifth, a net assessment of U.S. interests in the Middle East/Persian Gulf/Southwest Asia: The U.S. has a number of distinct, sometimes conflicting objectives in the region. These include: the peace process, Turkish and Israeli security and defense, stability and threat reduction in the Gulf, Caspian oil, Pakistani political stability, moderating political and religious extremism and support for international terrorism, and Iraqi compliance with UN Security Council resolutions. Chinese, Russian and EU initiatives are in play simultaneously. All touch to a greater or lesser extent on Iranian interests. The U.S. needs to be clear about what its own priorities may be, where there are opportunities for agreement with Iran, where misunderstandings can be avoided and what the basic points of real difference between Iran and the U.S. may be.

Sixth, a fresh look at the future of U.S.-Iranian relations: This is the most difficult step for American political leaders to take. The memories of the 1979 hostage crisis, two decades of vilification, the toll taken by state-sponsored terrorism and the determination with which Iran seeks to displace the U.S. in the region make it difficult to come to this issue without grave reservation. Yet, Iran is undeniably in the throes of important political and social changes. To be sure, elections do not make for a democratic regime of a kind we understand in the West. Nor is it likely that a more popular or moderate Iranian government will be moved any time soon to abandon its nuclear weapons and missile programs. But the people of Iran are having an influence on their own government. It is in the United States' interest to encourage that trend. Public attitudes in Iran might be affected positively if the U.S. were to take the necessary steps to undermine the utility to Iran of nuclear weapons and missiles and to staunch the flow of foreign support to those programs while offering to engage in reciprocal actions to reduce tensions in the region. At the same time the U.S. cannot allow itself to be drawn into a relationship where, as in the case of North Korea, the U.S. becomes the demander. That will only reward Iran for its

behavior, encourage its suppliers, frustrate U.S. relations with our allies, further destabilize the region and result in crisis and conflict with Iran.

IV. Conclusion

Mr. Chairman, I will conclude this statement with the following observation.

In the last five years we have witnessed the development of a nuclear weapons and ballistic missile program in Iran that now provides it with the potential to threaten American interests. Iran's program has been, and remains, dependent on foreign assistance. But that dependence does not alter the fact that it could deploy, in a relatively short time, weapons systems that could threaten the American homeland.

Over the same period of time Iran has been working assiduously to alter its strategic position in the region. Its nuclear weapons and missile programs have been complemented by the selective modernization of its conventional forces. It has made a number of diplomatic overtures to regional and European powers to establish itself as a legitimate state in the international system. And, in the last few years Iran has been struggling to revise its domestic affairs in ways that, if successfully completed, could bind its large and youthful population to a more popular Islamic and nationalist system of government and an economy more prosperous than Iran has enjoyed for many decades.

As a result of its ongoing military, diplomatic and domestic transformation, Iran has evolved from a "state of proliferation concern." It is recognized in the region and increasingly within international councils as a legitimate state whose national interests must be taken into account by all other states. It is now time for the U.S. to address the strategic challenge Iran poses to American interests in the region and within the international system.

Senator COCHRAN. Thank you very much, Dr. Cambone.

Mr. Eisenstadt, we will hear from you now. Thank you.

TESTIMONY OF MICHAEL EISENSTADT, SENIOR FELLOW, WASHINGTON INSTITUTE FOR NEAR EAST POLICY

Mr. EISENSTADT. Thank you very much, Mr. Chairman. I would like to thank you for inviting me here today to speak about this important topic. I will make a few comments based on my prepared statement which I would like to submit for the record.

I thought I would talk today about policy approaches for dealing with proliferation in Iran, given that the other speakers have tended to focus on particular systems and capabilities. I intend to discuss five policy approaches that have been used by the United States in the Middle East and elsewhere for dealing with proliferation, evaluating their utility and efficacy vis-a-vis Iran so that maybe we can draw some conclusions as to what works best and what maybe is not appropriate in dealing with the issue of Iranian proliferation. These five policy approaches are: (1) altering Iran's motivations to acquire missiles and WMD; (2) influencing Iran's proliferation cost/benefit calculus; (3) imposing costs and delays on its programs; (4) strengthening deterrence; and (5) mitigating the impact of proliferation by encouraging political change in Iran. I will evaluate each of these now in turn.

In terms of altering motivations, I would first make two points. First, Iran's interest in weapons of mass destruction predates the Islamic Republic. Under the monarchy, under the Shah, Iran had a nuclear weapons program. After the Islamic revolution, the Islamic Republic, first in response to Iraqi chemical weapon use, pursued chemical and biological weapons, and then reactivated the nuclear weapons program. Whereas the Shah was motivated mainly by his desire to make Iran a regional power, the Islamic Republic has been motivated by three factors: (1) the desire for self-reliance, given the fact that they have been strategically isolated for the en-

tire time that the Islamic Republic has existed; (2) to transform Iran into a regional power; and (3) to strengthen Iran's deterrent capability.

Now there are two main policy implications implicit in this assessment. First, Iran's pursuit of weapons of mass destruction and missiles is not necessarily regime-specific. In other words, even if the Islamic Republic were to be replaced by another regime, there is a good chance that they might still pursue WMD for various reasons. Second, Iran is developing weapons of mass destruction not just to deal with perceived threats, that is, for deterrence purposes, but for other factors as well. This is important because a lot of people tend to assume that its motivations are strictly defensive, that if we could deal with its defensive concerns, then the problem can be dealt with. And usually they put forward the idea of creating some kind of regional security systems which will then enable Iran to divest itself eventually of its WMD.

My bottom line is just their security concerns alone are so complex, I doubt that there is anything we can do to really modify them. But even if we could deal with them, there are other factors which will probably continue to motivate Iran in the direction of proliferation. That is not to say that we should not try to lay the groundwork for a security framework in the region, because I think to the degree that would advance stability in the region, that is good because you might then avoid conflicts that could lead to the use of WMD. But it is not a cure for Iranian proliferation.

Second, with regard to influencing the proliferation cost/benefit calculus of Iran. A number of people again have, I think, speculated incorrectly that somehow the reformers have less of a motivation to pursue WMD than the hard-line conservatives and that they are influenced by a different calculus.

I think in general I disagree with that. First, from the little evidence that we have on the subject, Iran's leadership seems relatively united over the desirability of acquiring missiles and WMD. I think across the board its leadership sees the possession of such weapons as a strategic imperative.

However, I think it is possible that there might be differences within the leadership over the price that Iran might have to pay for going down the proliferation road. For instance, if they were to violate their NPT commitments and develop nuclear weapons or to be caught violating the Chemical Weapons Convention, then economic sanctions could conceivably be slapped on the country. And I think the reformers are more concerned about relations with the West and about getting foreign investment, and therefore things that are of value to them can be harmed by Iran's pursuit of WMD. So there might be differences, whereas the conservatives are less concerned about Iran's relationship with the West, for instance.

On the other hand, I would just make the point that in general in the Middle East security concerns trump economic concerns. So even though I think it is possible that some reformers might agonize over this dilemma, in the end of the day I think it is likely that they will go down the route of putting Iran's security interests over its economic interest.

But nonetheless, I would just say there might be an opening here for the United States to explore and if given the opportunity down

the road when we do enter into talks with the Iranians we should explore this. But I am not an optimist about the prospects of striking a deal even if the reformers were to consolidate control over most of the levers of government in Tehran. I am not sure there is a deal to be made there. But, again, it should be explored. I think more likely Iranians across the board will believe that they can go down the route of proliferation and not get caught, and they will be tempted to do so.

The third course of action is imposing costs and delays. This is the approach that the U.S. Government to date has placed the greatest emphasis on. I think we have been fairly successful in imposing costs and delays on Iran's efforts to proliferate. In order to accomplish this objective, we have used various traditional policy instruments such as export controls, diplomatic demarches of foreign countries, and economic sanctions. Again, as I said, I think we have been fairly successful in delaying Iran's proliferation as a result.

You probably cannot stop a determined proliferator, but if you can delay him, that is something. Some people tend to dismiss the importance of delay. Granted, I would prefer to halt rather than delay a program. But delay can have important benefits in that it buys you time to develop countermeasures to systems that the adversary is developing, such as missile defenses and the like.

In addition, it is also potentially a hedge against perhaps the reversion of Iran to a more aggressive foreign policy in the future. If this were to happen, delay at least will mean that they have fewer capabilities in their hand than they would have had otherwise had their programs not been delayed.

With regard to strengthening deterrence, I would say that basically deterrence lies at the heart of any effort to deal with a country of concern, such as Iran, that has already proliferated. In the case of Iran, I think there is a widespread perception in some quarters that Iran is an irrational state or is undeterable either because they are irrational or because they have a very high pain threshold. I would disagree with that.

In general, I think experience has shown that although they do sometimes miscalculate, as all countries do, and I think there is a greater tendency on Iran's part than other countries to do so, in general its decisionmakers do act in accordance with a rational calculus. And while in the early days of the Revolution they may have had a very high pain threshold, as a result of the experience in the Iran-Iraq war and the tremendous damage this did to their country, and as a result of the death of the Ayatollah Khomeini who probably was the only person who could have inspired the Iranians to fight 8 years against Iraq and take the losses they did take, since the end of the Iran-Iraq war and the death of Khomeini, I think Iran, in terms of its ability to absorb losses, is much more of a normal state. I would just point to their very cautious behavior in 1991 in not really actively intervening in the South of Iraq during the uprising for fear that they might get dragged into a quagmire, and their behavior in the crisis with Afghanistan in 1998 to show that I think they have learned the lesson of the past and as a result they are a lot more cautious. The bottom line is we can

use traditional tools of deterrence vis-a-vis Iran in order to mitigate the implications of proliferation.

Finally, I would like to address the issue of mitigating the impact of proliferation through encouraging political change. I would agree with what Dr. Cambone said, that we have to do what we can in order to encourage political change in Iran as a way of mitigating proliferation as well as for other general policy reasons. I would say we do have a very limited ability to influence domestic politics in Iran, though I think we can shape the political environment in which the domestic power struggle occurs.

In the case of Iran, the goal of U.S. policy should be to encourage the evolution of the regime in the direction of greater openness, freedom, and moderation. Domestic political change of this kind would hopefully result in the decline of radicalism abroad and more normal relations between Tehran and its neighbors, although I have no doubt that still relations between Iran and its Arab neighbors, between Iran and the United States will be characterized by tension, and relations between Iran and Israel will still be characterized by hostility. But it will be, I think, a better situation, at least a marginally better situation than the one that we are in now and that we found ourselves in in past years.

Operationally what this means is supporting the Iranian people in their struggle for greater freedom while avoiding tainting particular Iranian personalities or movements with the potentially fatal U.S. embrace, in promoting contacts between the American and Iranian peoples, people-to-people contacts, seeking an official dialogue with Tehran which is the only way in which the issues dividing the two governments, including weapons of mass destruction proliferation, can be resolved, and continuing to highlight the connection between U.S. sanctions and Iranian policy in the three traditional areas of concern—terrorism, Iran's support for violent opponents of the Arab-Israeli conflict, and weapons of mass destruction. Bottom line, until Iranian policy changes in these three areas, sanctions that restrict Iran's ability to raise hard currency to fund its missile and WMD programs should remain in place.

So, by way of concluding, let me just review my main points.

First, the United States is unlikely to succeed in altering the range of Iranian motivations for acquiring WMD.

Second, there is probably not much that the United States can do to alter the proliferation cost/benefit calculus of Tehran. While there might eventually be a slender chance for a deal with Tehran wherein Iran agrees to fulfill its arms control obligations in a verifiable fashion in return for the easing or lifting of sanctions by Washington, this remains an untested proposition and I am personally skeptical of the prospects for such a trade-off.

Third, Washington has had much success in imposing costs and delays on the WMD programs of Tehran through traditional arms control instruments and economic sanctions. These should continue for as long as Iran remains committed to acquiring WMD. Time gained should be used to develop countermeasures to emerging threat capabilities and to encouraging political change in Iran in order to help mitigate the risks of proliferation.

Fourth, given that missile and WMD proliferation by Iran is a reality, the United States will have to continue to rely on deter-

rence in dealing with this threat while developing the means to fight in a WMD environment should deterrence fail.

Finally, encouraging political change in Tehran might help mitigate the problem of WMD proliferation to Iran but it is unlikely to solve it. Even if Iran's policies in many areas were to change for the better, from the point of view of the United States, in the coming years, Tehran's WMD capabilities are likely to be the greatest long-term obstacle to more normal relations between the United States and Iran.

I look forward to your questions, sir. Thank you, Mr. Chairman.

[The prepared statement of Mr. Eisenstadt follows:]

PREPARED STATEMENT OF MICHAEL EISENSTADT [1]

Iran is believed to possess both chemical and biological weapons and the missiles to deliver them, and it may well be the next nuclear power in the Middle East. Due to the volatility of Iranian politics, the clerical regime's involvement in terrorism, ongoing tensions with some of its neighbors and the U.S., and its continued denial of Israel's right to exist, halting—or at least hindering—Iran's missile and WMD programs will be a key U.S. interest in the coming years. Should these efforts fail, managing the consequences of a proliferated Iran (perhaps armed with nuclear weapons) will be one of Washington's most difficult future security challenges.

The U.S. has a variety of options available to it in dealing with the general problem of Iranian proliferation: 1) alter Iran's motivations to acquire missiles and WMD; 2) influence its proliferation cost/benefit calculus; 3) impose costs and delays on its programs; 4) strengthen deterrence; and 5) mitigate the impact of proliferation by encouraging political change in Iran. I this paper, I will assess the applicability of each of these for the Iranian case and discuss the implications of this analysis for U.S. policy toward Iran.

Altering Motivations

Iran's interest in WMD predates the Islamic Republic. Under the monarchy, Iran initiated a nuclear weapons program, as part of the Shah's drive to make Iran a regional power. The Islamic Republic has subsequently pursued the acquisition of missiles and WMD as a means to achieve self-reliance, in light of Iran's relative strategic isolation; as part of the Islamic Republic's efforts to transform Iran into a regional power; and to strengthen Iran's deterrent capability against various perceived threats. There are two conclusions implicit in this assessment. Iran's pursuit of missiles and WMD is not necessarily regime-specific; thus, this problem could well be with us even were the Islamic Republic to be replaced by another regime. Moreover, Iran is developing missiles and WMD not just to deal with perceived threats, but for other reasons—related to its drive for self-reliance (a core value of the Islamic Republic), and its desire to be treated as a regional power (a motivation shared by the monarchy and the Islamic Republic). So, even if Iran's security concerns could somehow be addressed through security assurances from the major powers, or the creation of a regional security system, such steps would probably not be sufficient to induce Iran to abandon its missiles and WMD (and particularly its nuclear program). Although the creation of some sort of regional security system is inherently desirable as a means of reducing tensions and enhancing stability in the Middle East, in the end there might not be much that the U.S. can do to influence the entire panoply of motivations underpinning Iran's missile and WMD programs.

Influencing the Proliferation Cost/Benefit Calculus

From the little evidence we have on the subject, Iran's leadership seems relatively united over the desirability of acquiring missiles and WMD, seeing the possession of such weapons as a strategic imperative. However, if the private Iranian policy debate concerning missiles and WMD parallels public policy debates in Iran on other matters, it is possible—if not likely—that there are divisions in Iran's leader-

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[1] Senior Fellow at The Washington Institute for Near East Policy, 1828 L St. NW, Suite 1050, Washington, DC 20036. The author can be reached at <michaele@washingtoninstitute.org>. This testimony draws heavily on previous articles by the author, including: "Can the United States Influence the WMD Policies of Iraq and Iran?" *The Nonproliferation Review,* Summer 2000, vol. 7, no. 2, pp. 63–76; "Living with a Nuclear Iran?" *Survival,* Autumn 1999, vol. 41. no.3, pp. 124–148, and; "Iraq and Iran: Inevitable Proliferators?" in David Albright and Robert Kelley (eds.), *Proliferation Critical Paths: Trends and Solutions* (forthcoming).

ship over the importance of the interests that could be jeopardized by a decision to violate the country's arms control commitments (which could trigger the imposition of international sanctions). Iran's pragmatic reformers likely fear the potential impact of violating Iran's arms control commitments on the country's ties with the outside world (the West in particular) and the prospects for foreign investment—which is crucial if Iran is to get its economy on its feet, and avoid future political unrest. By contrast, conservative hard-liners care less about Iran's relations with the non-Islamic world. Such differences among Iran's clerical leadership might provide an opening that the U.S. could (and should) use to explore the possibility of altering Tehran's proliferation cost/benefit calculus—though I am not optimistic about the prospects for success. More likely, I suspect that Tehran's clerical leadership believes that they will be able to develop nuclear weapons without getting caught in the act. Here, the Chemical Weapons Convention (CWC) could be a crucial test case. If Tehran proves able to circumvent its CWC commitments without paying a price for doing so, it is even more likely to violate its Nuclear Nonproliferation Treaty (NPT) commitments.

Imposing Costs and Delays

While U.S. policy has thus far not succeeded in altering Tehran's motivations or its proliferation cost/benefit calculus, it has succeeded in hindering Iran's ability to enhance its existing missile and WMD capabilities, and acquiring new ones, through various policy instruments, including export controls, diplomatic demarches, political arm-twisting, and economic sanctions. Together, such measures have delayed Iran's proliferation efforts, and constrained the evolution of its capabilities. Delay is important for several reasons. First, it buys time for the U.S. and its allies to develop countermeasures to Iranian capabilities. For instance, American efforts have delayed the development of Iran's Shehab–3 missile by more than 5 years (providing the U.S. and its allies with time to improve their theater missile defense capabilities), and prevented Iran from making much progress toward establishing a modern, diversified civilian nuclear infrastructure, that could serve as a springboard toward a clandestine nuclear program. Delay might also provide a hedge against the possibility that hard-line conservative clerics could gain control over all the major centers of power in Tehran in the future and pursue more aggressive foreign and defense policies. Should such a scenario come to pass, the conservative hardliners will have fewer means at their disposal with which to pursue their objectives. Conversely, should the trend toward greater moderation and openness in Iranian politics resume, it would be desirable to have forestalled Iran's development of missiles and WMD until the time that more moderate political elements, less likely to engage in terrorism or foreign adventures, are more firmly ensconced in Tehran. Even so, the U.S. could face difficult challenges in dealing with a reformist leadership should the latter insist on retaining Iran's missile and WMD capabilities (in the latter case—in violation of Iran's arms control commitments). If this assessment is correct, WMD may eventually be the greatest obstacle to more normal relations between Iran and the U.S.

Strengthening Deterrence

Deterrence lies at the heart of any effort to deal with countries of concern—such as Iran—that have already proliferated. In the case of Iran, the main problem in establishing a stable deterrent relationship is not the putative "irrationality" of the regime or its reputed high threshold for pain. (Iranian leaders have proven to be quite rational, and while Iran may have had a fairly high tolerance for pain in the heady early days of the revolution, this has long since ceased to be the case.) Rather, political factionalism—rooted in personalities, ideology, and the very structure of the regime—poses the greatest challenge to a stable deterrent relationship. Persistent factionalism makes it difficult for the regime to implement policy in a consistent, predictable manner, and often leads to policy zig-zags, as different personalities, factions, or branches of the government work at cross purposes, act to subvert their rivals, or press the government to take actions inconsistent with its general policy line. And because this factionalism is rooted in the structure of the Islamic Republic, this problem will exist as long as the clerical regime retains its current structure. Nonetheless, the basics of deterrence applies: avoid ambiguity in defining "red lines" whose violation by Iran would elicit a harsh U.S. response; maintaining a strong and credible forward military presence in the region, and; know where Tehran draws its own "red lines" so as to avoid inadvertent conflict or escalation. And of course, the U.S. needs to develop missile defenses and the means to operate in an WMD environment should deterrence fail, while developing countermeasures to various nontraditional means of delivering WMD that Iran might employ, such as terrorists, boats, or unmanned aerial vehicles.

Mitigating the Impact of Proliferation Through Political Change

Since it may not be possible to alter the WMD motivations or cost/benefit calculus of Iran, or to halt its efforts to augment its missile and WMD capabilities, and because deterrence is an uncertain proposition, the U.S. needs to focus on what it can do to encourage political change in Tehran to mitigate the impact of missile and WMD proliferation. Though the U.S. has a limited ability to influence domestic politics in Iran, it can shape the political environment to influence the outcome of developments there. In Iran, the goal of U.S. policy should be to encourage the evolution of the regime in the direction of greater openness and moderation; in practical terms, this probably means—at least in part—the emergence of a political system in which clerics play a less prominent role. Domestic political change of this kind would hopefully result in a decline in radicalism abroad and more normal relations between Tehran and its neighbors (even if some tensions persist). Operationally, this means promoting contact between the American and Iranian peoples; supporting the Iranian people in their struggle for greater freedom (while avoiding tainting particular Iranian personalities or movements with a potentially fatal U.S. embrace); seeking an official dialog with Tehran, which is the only way in which the issues dividing the two governments—including WMD proliferation—can be resolved; and continuing to highlight the connection between U.S. sanctions, and Iranian policy in the three traditional areas of concern (terrorism, support for violent opponents to the Arab-Israeli peace process, and the development of WMD). Until Iranian policy changes, sanctions that restrict Iran's ability to raise hard currency to fund its missile and WMD programs should remain in place.

Conclusions

This assessment leads to the following conclusions: First, the U.S. is unlikely to succeed in altering the range of Iranian motivations for acquiring WMD; and while conditions are not yet ripe for the creation of a regional security regime that might help reduce the likelihood of conflict in a proliferated region, the U.S. should start laying the foundation for the eventual emergence of such a regional security framework. Second, there is probably not much that the U.S. can do to alter the proliferation cost/benefit calculus of Tehran. While there might be a slender chance for a deal with Tehran—wherein Iran agrees to fulfill its arms control obligations in a verifiable fashion in return for the easing or lifting of sanctions by Washington—this remains an untested proposition. It should, however, be tested when political conditions are more conducive in the context of future U.S.-Iran negotiations. Third, Washington has had much success in imposing costs and delays on the WMD programs of Tehran through traditional arms control instruments and economic sanctions, and these should continue for as long as Iran remains committed to acquiring WMD. Time gained should be used to develop countermeasures to emerging threat capabilities, and to encouraging political change in Tehran, in order to help mitigate the risks of proliferation. Fourth, given that missile and WMD proliferation by Iran is a reality, the U.S. will have to continue to rely on deterrence in dealing with this threat, while developing the means to fight in a WMD environment should deterrence fails. Finally, encouraging political change in Tehran might help mitigate the problem of WMD proliferation to Iran, but it is unlikely to solve it. Even if Iran's policies in many areas were to change for the better (from the point of view of the U.S.), Tehran's WMD capabilities are likely to be the greatest long-term obstacle to more normal relations between the U.S. and Iran.

Senator COCHRAN. Thank you very much, Mr. Eisenstadt.

The question of the weapons programs and missile programs in Iran brings into focus the effort that we have of developing countermeasures, for example, the National Missile Defense program. What is your assessment of the efficacy of the Clinton Administration's National Missile Defense architecture, the single-site for the interceptors, given the pace of the programs in Iran and in North Korea, considering those two, what is your reaction to that, Dr. Cambone?

Mr. CAMBONE. In my view, Senator, any deployment of a ballistic missile defense for the United States has got to be able to defend us from an attack from either the Asian sector or from the Middle East/Southwest Asia sector, that is, from either our West or our East, and it has to have the capacity to deal with the types of countermeasures that one can assume that these countries will make

an effort to develop. Their success in developing them will be told when we see them, to be sure, but nonetheless, we have to be prepared for a set of countermeasures as well. And so, therefore, a single site in Alaska is insufficient to meet the kind of warning that I think we have been given with respect to the program in Iran.

Senator COCHRAN. How sophisticated do you view the ballistic missile infrastructure in Iran compared with other states such as North Korea or Iraq?

Mr. CAMBONE. I would think it is fair to say that they are certainly different. The Iraqi infrastructure has been knocked around a bit both in the Gulf War and subsequently in Desert Fox. But they are nonetheless still working on much shorter-range systems that are permitted under the U.N. resolutions and so forth. The North Korean structure, from what we know of it, is one that has been designed to turn out what appear to be increasingly upgraded and extended ranges of what is basic technology in the Scud class with the added mixture of some solid rocket motor capabilities, evidenced by the effort to put the third stage of the Taepo Dong–1 in orbit. The Iranian one, at least again as far as one knows from the open sources, has three dimensions to it. One is the Scud-related effort, which is evidenced by the Shahab–3 program. The second is the assistance that has come from the Russians in the form of what is thought to be technology related to Russian SS–4, SS–5 type missile systems. And then there are also hints that there are solid rocket motor capabilities that the Iranians are developing as well. That is why I was intrigued by the report that the Shahab–3 had both liquid and solid propellant or fuel. I do not know what that means, you can ask the fellows behind me, they may know far better than I.

But the point is that the Iranians have a multitude of options to pursue, which accounts in fact for the multitude of paths which the Intelligence Community is prepared to lay out for them to pursue. So on the whole, I think you can deduce that it is a fairly large infrastructure and one that is potentially capable of very sophisticated capability.

Senator COCHRAN. Do you think Iran can become self-sufficient in the development of long-range ballistic missiles?

Mr. CAMBONE. Certainly.

Senator COCHRAN. What impact would continuing foreign assistance have on their ballistic missile programs?

Mr. CAMBONE. That foreign assistance has been there in certain respects from the very beginning. The Iranians had gotten their original missile systems from the North Koreans, they did not make them on their own. They have turned to the North Koreans for assistance initially in developing those systems on their own and then for supplying additional systems like the No Dongs. They have turned to the Russians and apparently to the Chinese for some assistance in their other programs. So the assistance is embedded in their programs. They are clearly looking to become independent of that foreign assistance. I cannot judge, Senator, because I have not got any information different than what I can find in the press whether they have crossed the threshold of being self-sustaining on their Scud-based systems or not. My guess is there is no reason why they can't be pretty close. They have been at this

now for the better part of a decade and by now I would think they are pretty close.

Senator COCHRAN. What do you see the political changes bringing to Iran's weapons programs? Are these changes occurring, more democratization, so-called, of the political system? Can we expect any change to flow from that to the military and the weapons programs, the ballistic missile programs?

Mr. CAMBONE. No, I do not think so. The statements that have been made by public leaders in Iran indicate that they are squarely behind those programs irrespective of whether they sit on either side of the political fence.

Senator COCHRAN. Earlier this year there was a press article which reported that North Korea had transferred missile engines to Iran for the Shahab–3 program.[1] This appears to be different from Iran's usual missile development process which has been described as a hands-on process. Do you have any views as to why Iran would purchase these engines if they could have produced them on their own?

Mr. CAMBONE. One can go through a lot of reasons. It may be that they have a short-term need for an engine and had airframes in which to put them and wished to be able to test something different than they have in development on their own. Some will argue undoubtedly that they are having trouble with their own programs and that this is an indication that the effort to become self-sustaining and so forth is in trouble. That is certainly a hypothesis.

My own observation is that it is more worrisome to see them having done this, actually, because if it is possible for them to—if, indeed, what they did was take engines they purchased and then in a fairly short order put them in an airframe and launched them, it suggests that they can get other engines of bigger and longer-range missiles and put them in airframes and launch them. So depending on how you look at this problem, I think that there is in fact a dark side to it and one that we need to be conscious of.

Mr. EISENSTADT. If I could, Mr. Chairman, just add something on this.

Senator COCHRAN. Yes, Mr. Eisenstadt.

Mr. EISENSTADT. Thank you, sir. I would just add that one of the two main bottlenecks in the Iraqi program in the late 1980's in their efforts to develop an indigenous Scud knock-off was with the turbo pumps, which is an engine component. And as far as we know, at least as of about Desert Storm, they never succeeded in mastering that. As for Iran, some people have speculated that when the Shahab–3 was first test launched in 1998 the engine may have blown up and that may have been the cause of its destruction. So it is possible that they may not have mastered all the engine components and therefore that is why they still had to rely, at least as of last year, on the North Koreans for the engines. But who knows where they are right now.

Senator COCHRAN. There have been some discussions, as we all know, between the United States and North Korea trying to work out arrangements for a new energy program there and a transfer of energy resources so they will not have to have a nuclear reactor-

[1] The article from the *Washington Times* appears in the Appendix on page 45.

based energy program, and opening up trade to make changes in the relationship. Has this led, in your view, and I will ask both of you, to any change in the relationship between North Korea and other states like Iran and their willingness to continue to sell WMD components or technology or missile systems? Have you seen any change, or is there any reason to believe they will not continue to do what they have done in the past?

Mr. CAMBONE. Senator, I think you pointed to the evidence that at least the North Koreans are prepared to transfer engines, despite the fact that, as last I looked, the talks were still ongoing. So I do not know why we should expect that the North Koreans will end those programs. And I am not sure we would know at this point, for example, how much inventory there is, how much they have already transferred elsewhere. We know what we can see; we don't know what we don't know. And they have been a very active proliferant, haven't they? So there may be many more things they have already done that will come to light at a subsequent time.

Senator COCHRAN. Mr. Eisenstadt.

Mr. EISENSTADT. I just would second what Dr. Cambone said. I would also just add this apropos to a point that you asked earlier about Iran becoming a secondary supplier. It is quite possible you have, going back to North Korea, a flow of information as well as technology. The Iranians were involved at a very early stage in the No Dong program in terms of funding it, and it is quite possible that now as part of the pay-off they might be providing the North Koreans with some of the technology they are getting from the Russians in order to help the North Koreans improve their original product. I am simply speculating here, but I think this is just another angle that we should look at.

Senator COCHRAN. Can you comment about the amount of time the United States would have in terms of warning about Iran's possession of an ICBM?

Mr. CAMBONE. Senator, I think we have been warned. So my answer to that is the time is up.

Senator COCHRAN. Mr. Eisenstadt.

Mr. EISENSTADT. I second that.

Senator COCHRAN. The most recent unclassified report on proliferation says that Russian firms faced economic pressures to circumvent export controls and did so in some cases, and that they failed in some cases regarding Iran to enforce its export controls. Are Russian entities continuing to transfer ballistic missile technology to Iran despite the changes in Russian export control laws?

Mr. CAMBONE. I cannot answer that with any certainty, Senator. I read the press along with you and it appears that the relationship continues, the reports from the DCI and others suggest that the transfers continue.

Senator COCHRAN. Mr. Eisenstadt.

Mr. EISENSTADT. All I would add to that is that we had the story that appeared just a couple of days ago about the laser isotope enrichment facility. And as of a few days ago the Russians have told us that the sale is not going to go through. So I think this indicates that until now this has been continuing.

The only thing I would point out in addition to this, one cannot help conclude when looking at accounts in the Russian press that

this is not simply people freelancing, that there is a certain degree of culpability by various government agencies or collusion by various government agencies in this in terms of facilitating the transfer of technology and information. That being the case, I would assume that these things would continue even if there are temporarily steps taken to deal with certain high priority cases that have become politically difficult or problematic.

Senator COCHRAN. You wrote an article, Mr. Eisenstadt, for *Survival Magazine* suggesting that because Iraq's chemical and biological weapons did not succeed in deterring the United States from involvement in the Gulf War, that Iran may believe that in a confrontation with Washington only a nuclear capability could enable it to avert defeat. Is that something you think we should consider likely, that Iran is going to develop that nuclear capability so it will be able to avert defeat?

Mr. EISENSTADT. I think that is one, and perhaps one of the more important, motivations on their part in pursuing nuclear weapons. But I think there is a whole cluster of motives here, as I said before, and this is only one. And even if we could deal with, address Iran's concerns on this issue, there are so many other motivations out there which I think are beyond our ability to influence that I think they would still continue to go down this road.

Senator COCHRAN. I was at a conference recently on U.S.-Russia relations and one of the participants, one of the scholars suggested that the experience of Russia in Chechnya might very well have some spill-over effects into other countries where there might be sympathies with the local Chechen population that has been hard-pressed by the Russian military, and we have all read of atrocities, there have been atrocities I guess on both sides. Nonetheless, that is a very mean situation over there, and the question would be whether or not attention could be focused on Russia now from Islamic states or neighboring states or states in sympathy with the Chechen insurgents to the extent that Russia might have difficulties with Iran and others. Do you see this as a problem and changing the relationships in the Middle East?

Mr. EISENSTADT. Thus far, Iran in its policy towards both Chechnya as well as Central Asia, the Newly Independent States in Central Asia, has generally subordinated ideology, its commitment to Islamic solidarity, to its state interests. And its state interests are preserving its relationship with Russia which from their point of view is, at least as far as we can tell, a strategic relationship. It may not be seen as a strategic relationship in Moscow, I do not know. I do not know whether this is simply a cash-earning enterprise or a way to cause problems for the United States or whether there is a strategic design here. But for the Iranians I think it is a strategic relationship. And from their point of view they have deferred to Russian interests throughout Central Asia and Chechnya. In fact, they have been almost completely silent throughout the war in Chechnya for that reason. So this has not yet become a problem in the relationship. And even though the two countries have differences with regard to the division of the resources of the Caspian Sea, they have not let this get in the way of the overall relationship because each has other equities that are at stake here that are important to them.

Senator COCHRAN. Dr. Cambone, you mentioned that Russia continues to provide Iran with assistance that could aid their nuclear weapons development programs. What do you think is the potential impact of this assistance to Iran's nuclear weapons programs?

Mr. CAMBONE. Well, Senator, I will say again that the finding or the judgment of the Rumsfeld Commission in 1998, in my view, stands. That with access to fissile material Iran could acquire, develop, possess a nuclear weapon in 1 to 3 years of a decision to do so, and that undoubtedly the assistance that they have gotten from others has aided in that endeavor. But I cannot help but note that others bear culpability for the availability of the kind of information that a country like Iran makes use of. And if it is true, as someone testifying in a case in Albuquerque suggested, that much of the material that was said to have been downloaded from secure computers at Los Alamos is available in the open literature, then we have a severe problem on our hands.

Senator COCHRAN. There is a good deal of concern around the world about the escalating oil prices. A lot of the oil that is produced comes from countries that we are talking about—Iraq, Iran, others in the Middle East, and Near East. What are the implications of the increases in oil prices on Iran's ability to acquire ballistic missile and weapons of mass destruction technology, Mr. Eisenstadt?

Mr. EISENSTADT. To the degree that a lot of what they are getting, just about all of what they are getting is due to smuggling or what are on the face of them illegal transactions, money is basically the lubricant for all of these kinds of activities. The more money they have, the more they will be able to engage in these kind of smuggling operations. And not only that, up till recently they have had to focus their efforts. Because of a lack of resources they have had to prioritize their defense spending. Defense spending in absolute terms has been relatively small. And in relative terms, given a state the size of Iran, their defense spending has been relatively limited. As a result, they have had to focus on specific narrow capabilities whereas their preference would have been to have modernized their military across the board. Now I think there is a chance they might have greater opportunity to broaden their modernization efforts and to intensify their efforts to modernize their military capabilities in more areas than they have been able to until now.

Senator COCHRAN. Dr. Cambone, do you have any comments or observations, any suggestions for changes in U.S. energy policy as a matter of national security interests?

Mr. CAMBONE. [Laughing.] Well, Senator, I——

Senator COCHRAN. Or is that too political?

Mr. CAMBONE. Well, no, it just may be energy policy as such is well beyond my ken. But it clearly is the case that the increase in oil prices has been of assistance not only to Iran, but to the Russians, to the Saudis, and not least of which to the Iraqis. But I would like to focus though on the point that the Iranians have uncovered new oil and gas deposits. They are working very hard to establish a supplier relationship with India. They are working hard to protect their equities in the Caspian Sea. They clearly understand that there is money to be made here. But not only is there

money to be made, there is entre into the international system as a supplier of energy. And that is an important position for them to occupy in their effort to legitimize themselves in the international community. And so the sort of longer-range point I think would be not whether they can manage to keep oil prices high, my guess is those prices will come down over time as pressures are put on all of the OPEC members. More important is their establishment as a supplier in the system, which in turn then gives them that much more leverage on the politics in the region and with respect to Western Europe and Japan. And that, I think, is an important development in Iran's strategic evolution that we need to take into account.

Senator COCHRAN. Very interesting and helpful comments from both of you. Your statements are appreciated. We appreciate your spending the time and making the effort to develop the presentations that we have asked for. We think this will be very helpful to our better understanding of the situation in that part of the world and the proliferation issues that we face and the development of WMD programs in Iran particularly. We appreciate your being here. Thank you very much.

Our hearing is adjourned.

[Whereupon, at 4:25 p.m., the Subcommittee was adjourned, to reconvene at the call of the Chair.]

APPENDIX

ANNOUNCEMENT OF THE VOICE OF THE ISLAMIC REPUBLIC OF IRAN RODEO 1

September 21, 2000

IRAN: SHAHAB–3 'NON-MILITARY' MISSILE 'SUCCESFULLY' TEST-FIRED

The first Shahb–3 missile, using liquid and solid fuel, was successfully test-fired on the first day of the Holy Defence Week. Announcing the news, the minister of defence and armed forces logistics said: The missile was built and tested for the purpose of gaining the necessary technology in order to enter the design and production stage of satellite guidance systems [Persian: samane-haye ranesh-e mahvareh].

Vice-Admiral Shamkhani added: The Shahab–3 missile has no military use and only for achieving the preliminary stages of new non-military operations.

ARTICLE FROM THE WASHINGTON TIMES, FEBRUARY 9, 2000

N. KOREA SELLS IRAN MISSILE ENGINES

BY BILL GERTZ, THE WASHINGTON TIMES

North Korea recently sold Iran a dozen medium-range ballistic missile engines, indicating the Pyongyang government has not curbed its transfers of missile know-how and equipment.

According to a Pentagon intelligence report, North Korea supplied the 12 engines to an Iranian government agency involved in missile production in November.

The engines arrived in Iran on Nov. 21 after they were spotted being loaded aboard an Iran Air Boeing 747 cargo jet that left Sunan International Airfield, about 12 miles north of the North Korean capital of Pyongyang, said U.S. officials familiar with the classified report.

U.S. intelligence officials said the missile engines are the same as those used in Nodong medium-range missiles, which have a range of about 620 miles.

The Iranians used Nodong engines in the first stage of the new Shahab–3 missile that was flight tested for the first time in July 1998. That missile has an estimated range of up to 930 miles.

Pentagon spokesman Kenneth Bacon declined to comment on the transfer citing a policy of not discussing intelligence matters.

The general issue of weapons proliferation, however, is "of great concern to us" and officials have been trying to talk to the North Koreans about their missile trade.

"We obviously worry about proliferation by anybody and North Korea is one of those that we are particularly worried about," he said.

The missile engine transfer comes amid continuing diplomacy by the Clinton administration aimed at trying to halt North Korea's missile proliferation. Two rounds of U.S.-North Korean talks in Berlin made little progress on the issue, officials said.

The intelligence on the missile engine transfer also coincides with other recent Pentagon reports showing that China is continuing to sell missile technology to North Korea despite promises from Chinese leaders to halt the exchanges.

The Pentagon also reported in November that North Korea was continuing with preparations for a test of its newest and longest-range missile, the Taepo Dong 2.

The communist North Korean government announced a moratorium on missile tests during talks with U.S. officials. However, Pyongyang recently threatened to resume the missile tests after the Pentagon conducted its national missile defense test.

Iran also is working on a longer-range version known as Shahab–4 with an estimated range of up to 1,240 miles. That missile could use two booster stages equipped with the Nodong engines, or a single Nodong engine on top of a more powerful Russian-design motor, according to U.S. officials.

The missile transfer has raised new questions about a recent decision by the Clinton administration to waive U.S. economic embargo provisions against Iran and allow Boeing Co. to sell engine parts to Iran for its fleet of 747 passenger jets.

State Department officials have said the export license for the 747 engine parts was approved in November—shortly before the engine sale—with restrictions limiting the repairs to passenger versions of Iran Air 747s and not its fleet of 747 cargo jets. The license was approved by Deputy Secretary of State Strobe Talbott.

Some within the administration opposed the Boeing parts sale because of fears the Iranians will use the jets for missile transfers. One U.S. national security official said he doubts the controls will prevent the Boeing parts from being diverted for military use.

The installation work on the Iranian jetliners will be carried out by technicians from the German airline Lufthansa without U.S. personnel watching, the official said. Also, there is nothing to prevent the Iranians from using the upgraded passenger jets as cargo planes in the future, the official said.

"It would be very easy to rip the seats out and use them to ferry missiles and parts," the official said.

Henry Sokolski, a Pentagon arms proliferation specialist during the Bush administration, said the North Korean engine sale also raises questions of Chinese government complicity in the engine deal.

The Iranian airliner probably had to fly over or through China, a course that would have required approval by Beijing, he said.

China several years ago denied overflight rights to an aircraft shipment of weapons from Kazakhstan to the Middle East after the U.S. government asked Beijing to block the flight, according to U.S. intelligence officials.

On the parts waiver to Boeing, Mr. Sokolski said: "This is the same kind of hair-splitting that has gotten previous administrations in trouble with exports to Iran and Iraq."

"Dealing with high technology to Iran is bad business," Mr. Sokolski said. "It can come back to bite you. Undoubtedly, if you engage in this practice there will be more of these kind of transfers in the future."

The CIA in the past has identified Russia and China as major suppliers to Iran's missile program, which includes developing a long-range Shahab–5 that will be able to reach the United States.

The engine sale is new evidence that North Korea also has become a major supplier for Tehran's missile effort.

The CIA's annual report to Congress on the spread of missiles and nuclear, chemical and biological arms stated that during the first half of 1999 "entities in Russia and China continued to supply a considerable amount and a wide variety of ballistic missile-related goods and technology to Iran."

Officials said the report did not include the intelligence from November on the engine transfer from North Korea.

"Exports of ballistic missiles and related technology are one of the North's major sources of hard currency," the CIA said, noting that North Korea has exported missile-related goods to the Middle East and Africa last year.

A CIA spokesman declined to comment, and a State Department official had no immediate comment.

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