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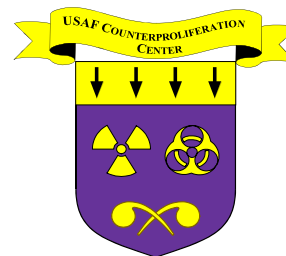
USAF COUNTERPROLIFERATION CENTER

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(Editor's Note: Hyperlink for referenced report follows article. Hyperlink was also in Journal #193.)

Washington Post

January 11, 2002

Pg. 1

U.S. Alters Estimate Of Threats

Non-Missile Attacks Likelier, CIA Says

By Walter Pincus, Washington Post Staff Writer

The United States is more likely to suffer a nuclear, chemical or biological attack from terrorists using ships, trucks or airplanes than one by a foreign country using long-range missiles, according to a new U.S. intelligence estimate. While stating that the threat to the United States from a missile with a mass-destruction warhead is "higher" than it was two years ago, the National Intelligence Estimate says for the first time that "U.S. territory is more likely to be attacked" with weapons of mass destruction by countries or terrorist groups using "ships, trucks, airplanes or other means."

The new estimate reveals the extent to which the Sept. 11 attacks have altered the thinking of U.S. intelligence agencies about the threat posed not only by terrorist groups but also by nontraditional weapons. The attacks on the World Trade Center and Pentagon, it says, "have caused the intelligence community to focus significantly more resources on the threat from terrorism, and we are obtaining more information on potential terrorist actions."

In the last publicly released National Intelligence Estimate, in September 1999, the report only mentioned in passing that "several other means to deliver weapons of mass destruction to the United States have probably been devised, some more reliable than ICBMs."

The latest report, which was released yesterday, represents the current assessment of the CIA and 10 other agencies that make up the U.S. intelligence community of the latest intelligence on ballistic missile developments and threats against the United States or its forces overseas.

The new estimate could affect the debate over the Bush administration's \$8 billion increase this year in spending on missile defense research to meet what it has argued is the growing threat of an intercontinental ballistic missile attack from North Korea, Iran, Iraq or other "rogue" states.

In their report, the intelligence agencies note several reasons why they now judge a non-missile attack more likely than one from an intercontinental ballistic missile. Topping the list is that delivery systems such as a truck, plane or boat "are less expensive than developing and producing ICBMs." Unlike missiles, non-missile systems "can be covertly developed and employed" with the source being "masked in an attempt to evade retaliation," the estimate says.

For smaller countries or non-state groups, the non-missile approach is more accurate than a missile, because testing and manufacturing reliable missile components takes years, the report says. It adds that nontraditional weapons have another advantage in that they "would avoid missile defenses," if the United States had any deployed.

A classified version of the intelligence estimate was sent yesterday to the Senate Select Committee on Intelligence, which has required the report every year since 1999; an unclassified version was made public for the first time since 1999.

The new report updates several areas that drew more emphasis in the version made public three years ago.

Between now and 2015, North Korea, Iran and "possibly" Iraq will remain the most likely threat of launching a missile attack "barring significant changes in their political orientations," it says. It disclosed that one intelligence agency, which it did not identify, dissents from the idea that Iran could develop an intercontinental ballistic missile before 2015.

North Korea, it notes, has said it would voluntarily delay flight testing its long-range Taepo Dong-2 missile until 2003, "provided that negotiations with the U.S. proceed."

On Iraq, the intelligence agencies were unanimous that President Saddam Hussein "could test different ICBM concepts before 2015 if United Nations prohibitions were eliminated in the next few years." But "most agencies" say such a move by Iraq is unlikely.

Iran, according to the estimate, has one of the largest ballistic missile inventories in the Middle East, mostly short- and medium-range in size. The intelligence agencies agree that Tehran "does not yet have a nuclear weapon . . . [but] could have one by the end of the decade," with one agency saying it would take longer.

In discussing Iran and Iraq, the estimate says that both countries are building missiles because of hostile relations with neighboring countries. The report does not mention Israel, which possesses nuclear weapons and various ranges of ballistic missiles.

Russia's nuclear arsenal "will decline to less than 2,000 warheads by 2015, with or without arms control," according to the estimate, "unless Moscow significantly increases funding for its strategic forces." It puts Moscow's current warhead count at "only 4,000," with 3,000 warheads on 700 ICBMs and 900 on 200 submarine-launched ballistic missiles.

Dealing with a major concern of some arms control experts, the report says that "an unauthorized or accidental launch of a Russian strategic missile is highly unlikely" if "all procedural and technical safeguards [are] in place."

China's modernization program is ongoing and by 2015 "most of China's strategic missile force will be mobile," and more difficult to target. Today, two-thirds of Beijing's 30, aging, liquid-fueled, silo-based, single-warhead ICBMs are aimed at the United States, with the remainder targeted at Russia and Asian countries, primarily India, it says. Over the next 15 years, the report says it expects the Chinese warhead total to range "from about 75 to 100" deployed "primarily" against the United States. It notes that China continues to emphasize and increase its ballistic missile force deployed against Taiwan.

India and Pakistan continue to develop short- and medium-range missiles to deter each other, with India also viewing them "as a hedge in a confrontation with China," the report says.

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January 9
CIA Report

Foreign Missile Developments and the Ballistic Missile Threat Through 20015

http://www.cia.gov/nic/pubs/other_products/Unclassifiedballisticmissilefinal.htm

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Bloomberg.com
January 10, 2002

Industry Pitches 12,400 Counter-Terrorism Ideas To Pentagon

By Tony Capaccio

Washington -- Defense and commercial contractors have submitted 12,405 proposals to the Pentagon for new technologies to combat terrorism, according to officials.

The Pentagon advertised for bids Oct. 23, citing a need for automated systems to identify Middle Eastern and South Asian dialects in intercepted phone calls, software to find patterns in law-enforcement databases, tags and sensors to monitor movement, face-recognition and voice-print systems and "deception" detectors to screen travelers.

Similar requests in the past have produced 900 to 1,000 proposals, said Air Force Major Mike Halbig, a spokesman. This response "is presenting us with some great ideas," he said. The submissions will now be reviewed by "more than 200 experts around the nation," he said.

Halbig said it will take "more than a month" to winnow the field; those who survive will be asked to complete their bid with a 12-page white paper. Contracts worth a total of \$20 million to \$40 million are at stake, officials said.

Companies that may benefit include defense contractors Northrop Grumman Corp. and L-3 Communications Holdings Inc., which develop information systems as well as weapons, and Visionics Corp., a maker of face-recognition systems. Computer Sciences Corp. already has contracts for systems related to information security.

Little-Known Group

The project is being managed by a 20-year-old joint office of the State Department and Pentagon called the Technology Support Working Group. It funds companies, universities and think tanks performing innovative counter-terrorism research.

Beneficiaries of technology developed have included the Secret Service, U.S. embassies, public health organizations, the Federal Aviation Administration and the intelligence community. The TSWG had a budget of about \$50 million in fiscal 2000 and \$70 million last year. It managed about 200 programs in 2000.

The Pentagon wouldn't release any the specific proposals submitted but did say what response various categories received.

A category called "physical security" received the largest number of proposals -- 1,211.

This category was for proposals involving "equipment and systems to safeguard personnel, prevent or delay unauthorized access to facilities and to protect against terrorist threats and sabotage" and methods for mitigating the effects of bomb blasts on structures, said a Pentagon briefing document.

Another 1,089 proposals were submitted for the "combating terrorism" -- an objective that includes but isn't limited to "finding suspected terrorists, predicting the future behavior of terrorists, finding weapons and support equipment that could be used by terrorists and detection and warning of terrorist activities," said the document.

The third most popular category, drawing 851 proposals, was for the "tagging, tracking, locating and remote sensors," calling for covert observation that includes "monitoring of civilians as well as military targets."

Smart Software

Here are some of the other technologies the Pentagon is looking for:

- Software to incorporate Afghan, Iranian and Arabic dialects into an Automated Speaker Recognition System.

Companies submitted 95 proposals for this project.

- Programs to scan and decrypt a range of computer data, including data from handheld PDA devices: 451 proposals.

- Better systems for finding and identifying faces in videotape: 413 proposals.

- Systems that create a voiceprint of suspected terrorists and their associates "based on a short sample of voice data collected from intelligence, law enforcement or media sources:" 110 proposals.

- A system "to detect, locate and map underground and concealed cavities that may serve as secure haven for terrorists and include ground penetrating radar, acoustics and unconventional surveillance and reconnaissance": 376 proposals.

- Techniques to identify terrorists who have worked with nuclear, biological and chemical weapons through analysis of their clothing, hair, skin, blood, body waste, teeth and bone: 112 proposals.

"The ability to identify instances of repeated exposure and to estimate the time elapsed since the last exposure is desired," said the Pentagon.

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Washington Post

January 11, 2002

Pg. 15

Diplomats: U.S. Quiet On Iraq Inspections

Bush Envoy Says Focus Is on Seeking Russia's Accord on Revising Sanctions

By Colum Lynch, Special to The Washington Post

UNITED NATIONS, Jan. 11 -- Despite President Bush's demand last month that Iraq allow a return of U.N. weapons inspectors, the United States has yet to begin rallying other countries at the United Nations to force Baghdad to accept inspections, U.S. and U.N. officials said today.

U.N. diplomats said that U.S. officials rarely discuss the president's desire to see weapons inspectors return to Iraq. Hans Blix, the Swedish executive director of the U.N. weapons inspection unit, said in a recent interview that he has seen no sign that the Bush administration has "accelerated" its efforts.

John D. Negroponte, the U.S. ambassador to the United Nations, said today that the main focus of U.S.-Iraqi diplomacy at the U.N. over the next several months will be to secure an agreement with Russia on a plan to revamp U.N. sanctions against Iraq.

Under the terms of a humanitarian exemption to sanctions, Iraq is permitted to sell billions of dollars of oil each year to purchase food and medicine and to rebuild the country's battered infrastructure. While all the proceeds of Iraq's oil sales are supposed to be placed in a U.N. escrow account, U.S. and U.N. diplomats estimate that Baghdad siphons off as much as \$2 billion a year in oil revenue to purchase luxury goods and revive its banned weapons programs.

Secretary of State Colin L. Powell has been working for nearly a year to persuade the Security Council to tighten U.N. sanctions imposed on Iraq after its 1990 invasion of Kuwait. But he has faced opposition from Iraq's closest ally in the council, Russia, and its neighbors -- Jordan, Syria and Turkey -- who profit from the illicit trade.

Negroponte said the administration's current strategy is designed to achieve consensus in the council on a key component of U.S. policy -- compiling an agreed-upon list of items with potential military applications that could not be sold to Iraq without Security Council approval -- before moving onto more contentious issues such as weapons inspectors.

Russia agreed in late November to begin negotiations with a view to endorsing an amended version of the list before June 1. But it has also insisted that Washington begin parallel discussions to clarify a 1999 Security Council

resolution calling for the return of inspectors. Moscow hopes that a fresh negotiation on that resolution would provide Iraq with a clearer commitment from the council to suspend sanctions.

"We need to focus on something you can really get done, while thinking about how we're going to move on to the next thing," Negroponte told reporters during a luncheon at his residence. "This is an issue" that the Security Council's five permanent members "and the council as a whole have now agreed."

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New York Times
January 11, 2002

Russia Rejects U.S. Plan To Store Warheads

By Patrick E. Tyler

MOSCOW, Jan. 10 — Russia today strongly criticized Bush administration plans to store rather than destroy decommissioned nuclear warheads, suggesting that such plans would undermine the credibility of any new arms control accord aimed at eliminating thousands of nuclear weapons.

The spokesman for Russia's Foreign Ministry, Aleksandr Yakovenko, said in a short but pointed statement, "We hold that Russian- American agreements on further reductions of the nuclear arsenals must be, first, radical — down to 1,500-2,200 warheads; second, verifiable; and third, irreversible so that strategic defensive arms will be reduced not only 'on paper.' "

The Russian statement followed the results of a "nuclear posture review" by the Bush administration that provided the first details of how Mr. Bush plans to reduce the American nuclear arsenal over the next decade to 1,700 to 2,200 "operationally deployed" weapons.

An assistant secretary of defense, J. D. Crouch, told a Pentagon briefing that the United States would hold in reserve a substantial number of warheads as a "responsive capability." "There have been no final decisions made at this point on what the size of our responsive capability would be," he said, "and also there have been no final decisions made on the overall size of the active stockpile and the inactive stockpile. Those things will shift over time."

A number of arms control experts said the United States reserve of nuclear weapons currently numbers several thousand warheads beyond the 6,000 in active service. Russia maintains a much smaller reserve, officials here say. Moreover, that reserve is expected to shrink more rapidly as Moscow diverts more of its resources to upgrading its conventional military forces.

The testiness of the tone of Russia's statement today indicated the depth of feeling here that Washington is seeking to orchestrate a long- term advantage in nuclear weaponry, especially after Mr. Bush's decision last month to withdraw from the Antiballistic Missile Treaty of 1972. That was the first such decision in the history of nuclear arms control.

"What reduction can we talk about if the United States can go back to the Start I level in just a couple of hours?" asked Aleksei Pikayev, director of an arms control institute at the Russian Academy of Sciences. "It looks more like swindling," he added.

Though Mr. Bush and Russian President Vladimir V. Putin have set virtually identical goals for cutting the nuclear arsenals to around 2,000 warheads each, Russian officials have been openly advertising their concern over whether the United States is committed to enforcing those reductions by destroying nuclear weapons.

Mr. Crouch was conspicuously vague on that point on Wednesday. "What we will end up with," he said, "is a situation where some weapons will move off and stay in the responsive capability of the United States, others will be earmarked for destruction and will be put in the queue for destruction, and others will remain in the inactive stockpile."

United States and Russian negotiators are to meet next week in Washington for talks on an arms control accord that could be signed when President Bush visits Moscow next summer. Last month, Secretary of State Colin L. Powell and Russian Foreign Minister Igor S. Ivanov, said they had been instructed by both presidents to "codify" a significant reduction in offensive nuclear weapons in preparation for the Moscow summit talks. Secretary Powell said this could take the form of a treaty, but there appears to be substantial resistance within the administration to entering into such a treaty with Russia.

In a visit to Finland last September, Mr. Putin said that though Russia had proposed that both sides reduce their arsenals to 1,500 warheads each, "this would only be possible when both sides take more action to promote trust.

We are well aware that nuclear warheads can easily be removed from missiles and stored and then put back if necessary."

For the last three decades, the focus of arms control negotiations has been to set the limits on "launchers" — missiles and bombers equipped with nuclear warheads — without trying to regulate the numbers of warheads.

But the end of the cold war has made it possible to plan for the most dramatic reductions in nuclear weaponry ever, and, therefore, the status of each nuclear weapon looms larger in arms control accounting.

Mr. Bush and his senior advisers have sought to capitalize on the historic importance of the president's decision to make the deepest reductions in the nuclear arsenal to date. But until the administration offers a more detailed explanation of how many nuclear warheads it intends to hold in reserve, several experts say, it is difficult to determine whether Mr. Bush is rearranging the status quo.

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Washington Times

January 11, 2002

Pg. 3

Report Upgrades China's Threat As A Nuclear Power

By Bill Gertz, The Washington Times

China easily could put multiple warheads on its current missile force but would face problems adding more than one warhead on its three new mobile ICBMs, according to a new intelligence report.

The National Intelligence Council's estimate of future missile threats, made public Wednesday, said China "has had the capability to develop and deploy a multiple re-entry system for many years, including a MIRV system." MIRV stands for multiple, independently targeted re-entry vehicle — the term for modern multi-warhead missiles.

The current force of some 20 CSS-4 long-range missiles currently has large single warheads and could be upgraded with multiple warheads "in a few years," the report said.

According to the report, China's intercontinental ballistic missile force over the next 15 years will range from 75 to 100 warheads "deployed primarily against the United States."

Chinese Embassy spokesman Xie Feng said he did not know the basis for the CIA report.

"The purpose of China developing nuclear weapons is simply for self-defense," he said.

Mr. Xie said China has a policy of not being the first to use nuclear weapons and of not using nuclear arms against non-nuclear states.

"It is a fact known to all that China has the smallest arsenal of all nuclear powers," he said.

Adding more warheads to the new single-warhead Dong Feng-31, a longer-range version of the DF-31 and the submarine-based JL-2, would be harder. The report said the Chinese would face technical hurdles and additional costs for boosting the number of deployed strategic warheads.

"MIRVing and missile defense countermeasures would be factors in the ultimate size of the force," the report said.

In Beijing, Chinese Foreign Ministry spokesman Sun Yuxi dismissed the CIA report on China's strategic warhead buildup as "baseless speculation."

"China will increase its defense power based on its own needs," Mr. Sun said.

Richard Fisher, a specialist on the Chinese military with the Jamestown Foundation, said the government's estimates appear too low.

"The estimate of 75 to 100 warheads to be aimed at the United States by 2015 may be an underestimate, if the People's Liberation Army builds more than four new ballistic missile submarines," Mr. Fisher said in an interview.

"Some reports estimate that the PLA may build up to six of these submarines. If that's the case, the overall number could actually turn out to be larger."

Mr. Fisher said the report also indicates that China plans to extend the range of its new DF-31 rather than produce a different DF-41 missile. He said China has been having problems developing the DF-41 and may have abandoned the program.

Mr. Fisher said a glaring omission of the report is the failure to mention China's progress in developing a land-attack cruise missile.

Combined with the large number of new Chinese missiles of varying ranges, "this adds up to a rather substantial, PLA Asia theater missile threat that is much larger than the report suggests," Mr. Fisher said.

CIA analyses of China came under fire last year from a panel of outside specialists who concluded that CIA China analysts harbored an "institutional predisposition" to play down Chinese military developments as nonthreatening. Details of Chinese missile developments were part of a report outlining long-range missile developments in China, Russia, North Korea, Iran, Iraq, Libya, Syria, Pakistan and India.

The report also said North Korea is a growing long-range missile threat, with hundreds of short- and medium-range missiles and continued work on long-range Taepo Dong missiles that "will enable the North to target the United States."

North Korea defended its missile program yesterday. The state-run news agency said the program is a "self-defense measure."

"If our country is a 'rogue state' for its development of missiles as a self-defense measure, what is the United States, which has a number of missiles and a stockpile of about 20,000 nuclear warheads?" the Korean Central Broadcasting Station asked.

"It is the very United States which is launching military terror attacks on our republic."

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New York Times

January 11, 2002

The Greater Danger

By Nicholas D. Kristof

PANMUNJOM, North Korea -- If you think Iraq is scary, come here to the bleak and snowy border between the two Koreas and look north.

True, North Korea may have the skinniest and coldest soldiers in the world, but it is not only the wackiest country around (a few years ago, it appointed its dead dictator as its perpetual president) but also potentially the most threatening. North Korea has the globe's third-largest army, 5,000 tons of sarin nerve gas and (the spooks believe) a secret reserve of the smallpox virus.

Its "dear leader," Kim Jong Il, planned and oversaw kidnappings of foreigners and a 1987 airplane bombing that killed 115 people. North Korea finances its budget partly by peddling drugs, selling weapons to terrorists in places like the Philippines, and counterfeiting American \$100 bills. The nightmare scenario would be North Korea raising cash by selling a vial of smallpox to Al Qaeda.

That is why perhaps the most interesting question today in foreign policy is not what we do about Iraq, but what we do about North Korea.

There is a gulf between present American policy toward North Korea (to the extent we have one) and the policy favored by most people who know something about the Koreas, who mostly believe that we should try harder to woo it out of its isolation.

I confess that I got this North Korea dateline only by stepping 10 feet into the country at the DMZ village of Panmunjom. I reported from North Korea once many years ago and was promptly banned for life (they never said whose life, though, so there's still hope). In any case, in conversations in Seoul and in the United States, there is some distress among Korea hands at America's missed opportunity with North Korea.

For decades our policy toward the North has been similar to our policy toward Cuba — with equally unhappy results: propping up a nationalistic dictator by giving him a foreign scapegoat for his own failed economic policies. Just as North Korea takes only micro-steps toward economic reform, so we take micro-steps toward engagement. There is a failure of imagination on both sides.

These days there are even some voices inside the Bush administration urging that as a second stage of the antiterror campaign it lean harder on North Korea. The hawks are absolutely right that North Korea is a threat, but wrong in assuming that the solution is more pressure. The United States tried confrontation in 1994, in a dispute over North Korea's nuclear program, and came much closer than is generally realized to a war that, according to one Pentagon estimate, could have killed one million people, including 80,000 to 100,000 Americans.

To muddy the picture, the Bush administration's hard-liners need the threat of North Korean missiles to sell their beloved missile shield. So they have less incentive to engage North Korea and seek a negotiated end to its missile program.

In dealing with North Korea, we can learn something from the South Korean president and Nobel Peace Prize laureate, Kim Dae Jung. President Kim has a tough and clear-eyed view of Communists (who almost killed him

during the Korean War), but he has also pioneered a "sunshine policy" offering incentives to coax the "dear leader" into more responsible behavior.

Yet President Bush, apparently without meaning to, crippled President Kim last year. During Mr. Kim's visit to the White House, Mr. Bush came across as publicly skeptical of engagement in a way that was humiliating for Mr. Kim and cut his legs off politically. Ever since then, the sunshine policy has been largely dead and Mr. Kim has been a lame duck, even though Mr. Bush has since endorsed it and praised Mr. Kim to the heavens.

North Korea would be a useful second stage for America's antiterrorism campaign, if our approach was not confrontation but a sunshine policy of our own. The timing may be right, for North Korea — while still menacing — is showing signs that it may be outgrowing terrorism (the last incident was 1987) and trying to open up very gradually. Last year it normalized relations with 12 countries, mostly in Europe. Cellphones and the Internet are arriving soon in Pyongyang. It is a wretched country at a potential turning point, just as China was at the time of the Nixon visit in 1972.

It's again time for a Republican president to tackle a threatening Communist power by agreeing to do business with it.

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Iran seeks weapons of mass destruction

By Anwar Iqbal

Published 1/9/2002 6:09 PM

WASHINGTON, Jan. 9 (UPI) -- Iran is one of the countries most actively seeking to acquire weapons of mass destruction and advanced conventional weapons, according to the CIA. Iran denies the claim.

In a report sent this week to the U.S. Congress, the CIA says Tehran is attempting to develop an indigenous capability to produce chemical, biological, and nuclear weapons and their delivery systems.

But Ali Akbar Rafsanjani -- the former president and the head of the Iran's powerful expediency council -- told the country's official news agency IRNA, "Although Iran today is one of the leading arms makers in the world, it has never been after non-conventional weapons and will never do so."

He went on to say, "Iran has never thought of, and will never think of, using nuclear, chemical or biological weapons against another nation."

The CIA report says that last year Iran continued to acquire both conventional and non-conventional weapons and materials from Russia, China, North Korea and Western Europe.

Although Iran has signed the U.N. Chemical Weapons Convention, it already has manufactured and stockpiled several thousand tons of chemical weapons, including blister, blood, and choking agents, and the bombs and artillery shells for delivering them, the report says.

During the first half of 2000, Tehran was seeking production technology, training, expertise, equipment, and material that could be used as precursor agents -- the ingredients for chemical weapons -- from Russia and China.

The report also says Tehran expanded its efforts to seek so-called dual-use materials, equipment, and expertise primarily from sources in Russia and Western Europe -- ostensibly for civilian purposes. Dual-use technology can be used for both civilian and military purposes.

"We judge that this equipment and know-how could be applied to Iran's biological warfare program ... which began during the Iran-Iraq war, and it may have some limited capability for BW deployment," the report says.

The U.S. intelligence agency says it is difficult to prevent such outside assistance, given the many legitimate end uses for such material and expertise.

The CIA also says that Iran sought nuclear-related equipment, material, and technical expertise from a variety of sources, especially Russia. "Work continues on the construction of a 1,000-megawatt nuclear power reactor at Bushehr that will be subject to International Atomic Energy Agency safeguards," according to the report.

IAEA safeguards are designed to prevent countries with civilian or commercial nuclear programs from using that material or technology to develop atomic weapons.

Rafsanjani is quoted by IRNA as saying that the Bushehr facility is solely for commercial purposes and does not have the capability to make weapons or weapon-grade uranium.

But the CIA says there is inevitably leakage between power and weapons programs.

"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 research and development program," it says.

Beginning in January 1998, the report says, the Russian government took a number of steps to clamp down on companies involved in dealings with Iran and other nations of proliferation concern. In 1999, it pushed a new export control law through the Duma forbidding Russian firms from helping any foreign country to develop nuclear weapons.

Russian firms, however, faced economic pressures to circumvent these controls and did so in some cases, the report goes on. The Russian government also failed to enforce its export controls in some cases regarding Iran. China pledged in October 1997 not to engage in any new nuclear cooperation with Iran but said it would complete cooperation on two nuclear projects: a small research reactor and a zirconium production facility at Esfahan that Iran will use to produce cladding for reactor fuel.

As a party to the Nuclear Nonproliferation Treaty, Iran is required to apply IAEA safeguards to nuclear fuel, but safeguards are not required for the zirconium plant or its products.

Iran claims that it is attempting to establish fuel-cycle capabilities to support its civilian energy program. This allows it to seek turnkey facilities, such as a uranium conversion facility that, the report says, could be used in any number of ways to support fissile material production needed for a nuclear weapon.

"We suspect that Tehran most likely is interested in acquiring foreign fissile material and technology for weapons development as part of its overall nuclear weapons program," CIA reports.

The report also says that Iran is seeking to develop ballistic missile capabilities which can be used to deliver weapons of all kinds of great distances.

During the first half of 2000, firms in Russia, North Korea, and China continued to supply the largest amount of ballistic missile-related goods, technology, and expertise to Iran, it says.

Tehran is using this assistance to support current production programs and to achieve its goal of becoming self-sufficient in the production of ballistic missiles, the report adds. Iran already is producing Scud short-range ballistic missiles and has built and publicly displayed prototypes for the Shahab-3 medium-range ballistic missile.

The report also says that Iran continues to acquire conventional weapons and production technologies from Russia and China as well -- something Iranian officials do not dispute.

During the first half of 2000, Iran received five Mi-171 utility helicopters from Russia under a 1999 contract, and it began licensed production of Russian Konkurs (AT-5) antitank guided missiles.

Iran also claims to be producing a new manportable surface-to-air missile known as Misagh-1, which resembles China's QW-1 MANPAD system.

Tehran also has been able to keep operational at least part of its existing fleet of Western-origin aircraft and helicopters supplied before the 1979 Iranian Revolution and continues to develop limited capabilities to produce armor, artillery, tactical missiles, munitions, and aircraft with foreign assistance, the report says.

<http://www.upi.com/view.cfm?StoryID=09012002-035338-8224r>

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January 09, 2002

Yucca seen as a key to avert terror

Task force proposes plans in preparing for future attacks

By Laura Meckler

ASSOCIATED PRESS

WASHINGTON -- The United States must determine how the Energy Department "can move ahead" with its plan to bury nuclear waste beneath Yucca Mountain, the conservative Heritage Foundation says in a new report recommending steps to increase homeland defense.

Yucca Mountain is listed as a primary recommendation because the foundation says nuclear waste could be stolen by terrorists and used to build radiological weapons.

Also recommended in the report is increased security at the nation's borders, more protections for communications systems and development of drugs to combat bioterrorism.

The Heritage report is the latest in a series of reports before and after Sept. 11 on how to prevent and prepare for terrorist attacks. It concludes that much remains to be done.

"America is dangerously vulnerable to this new form of terrorism," the report concludes.

L. Paul Bremer III, who co-chaired the Heritage task force that wrote the report, said the threat of terrorism will not disappear as long as the United States retains its dominant world position and said he hopes the panel's recommendations will be implemented.

"It's regrettable I had to serve on a third commission," said Bremer, who was former President Ronald Reagan's ambassador-at-large for counterterrorism and chairman of the National Commission on Terrorism that finished its work last year.

The Heritage task force, formed in the aftermath of Sept. 11, was co-chaired by Edwin Meese III, Reagan's attorney general.

Some of its recommendations, such as developing better public health surveillance systems to spot biological attacks, enjoy widespread support and have been recommended by similar groups in the past. Others, such as creation of a national missile defense, are considerably more divisive.

The recommendations include:

- * Secure the nation's nuclear waste, which could be stolen by terrorists to build radiological weapons. Determine how the Energy Department can move ahead with a contentious proposal to bury 77,000 tons of radioactive waste beneath Yucca Mountain in Nevada.

- * Monitor more closely who enters the country through airports and seaports.

Specifically: Develop new systems to share passenger information to prevent potential terrorists from boarding planes. Create a new federal center to analyze information about people and products arriving by sea, including experimental point-of-origin inspections for maritime trade. Require airports and port administrations to ensure that only authorized people can enter secure areas.

- * Federal law enforcement agencies share more information with one another and with local law enforcers.

- * Secure federal computer networks and information systems better.

- * Give the Pentagon control of security for the Global Positioning System frequencies and network, which allow many telecommunications systems to function.

- * Encourage drug companies to accelerate development of antibiotics and vaccines to treat and prevent diseases caused by biological agents.

- * Develop agreements with Canada and Mexico for working together in case of an attack on the border.

- * Develop an improved public relations program for communicating with the public in the event of attack or increasing threats.

- * Change federal law to allow closer monitoring of foreigners in the United States.

The full Heritage Foundation study may be found at <http://www.heritage.org/homelanddefense/welcome.html>
<http://www.lasvegassun.com/sunbin/stories/lv-other/2002/jan/09/512865016.html>

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Terror attack on Sellafield 'would wipe out the north'

Paul Brown and Richard Norton-Taylor
Guardian

Thursday January 10, 2002

A terrorist attack on Sellafield could render the north of England uninhabitable and release 100 times the radioactivity produced by the nuclear accident at Chernobyl in 1986, the House of Commons defence committee was told yesterday.

The most vulnerable part of the facilities at Sellafield, dating back to the 1950s, contain giant tanks of high level radioactive waste which has to be constantly cooled and stirred to prevent a chain reaction.

Gordon Thompson, executive director of the Institute for Resource and Security Studies in Cambridge, Massachusetts, said he believed that documents from both the nuclear industry and the government showed neither had ever attempted a thorough analysis of the threat or the options for reducing it.

Dr Thompson, who was based in the UK for 10 years and gave evidence at the 1977 Windscale inquiry into reprocessing at Sellafield, and the Sizewell inquiry, is an expert on the potential fallout from a nuclear accident or deliberate act of terrorism.

As well as the threat of a bomb, missile or hijacked plane hitting Sellafield, Dr Thompson raises the possibility of a rogue worker or terrorist infiltrator at Sellafield sabotaging the cooling equipment which prevents the stored waste from boiling and causing a massive radioactive release.

Dr Thompson's report, sent this week in response to the committee's call for new evidence following a report it published last month, is likely further to alarm the Irish government, which has repeatedly protested about danger from the high level waste tanks at Sellafield.

The problem is that the plant which is supposed to turn this liquid waste into more manageable and less dangerous glass blocks has never worked properly and a backlog cannot be cleared for another 15 years. Among the possibilities Dr Thompson raised was a vast release of liquid waste into the Irish Sea. That would contaminate fisheries and travel north on currents, making fishing in western Scotland impossible.

Anywhere downwind of Sellafield during the releases would be rendered uninhabitable probably for generations and people caught in the fall-out would have a greatly increased chance of getting cancer.

Depending on the direction of the wind, cities like Newcastle, Edinburgh and Leeds would be well within fallout range, as would be Dublin.

Dr Thompson said: "A civilian nuclear facility is a potential radiological weapon if the facility contains a large amount of radioactive material that can be released into the environment.

"A notable example of a potential radiological weapon for an enemy of the UK is the B215 facility at Sellafield.

This facility houses 21 steel tanks and associated equipment in above ground concrete cells. The tanks contain high level radioactive waste in the form of self heating, acidic liquid that requires continuous cooling and agitation."

He said these tanks contained 2,400 kilograms of caesium-137, the main cause of off-site radiation exposure from the Chernobyl accident.

The total amount released from Chernobyl was 27 kilograms, almost 100 times less than the potential release from the facility at Sellafield.

Dr Thompson said that the buildings designed in the 1950s could not withstand a crash from an airliner.

The Commons defence committee in its report said that "attention has particularly focused on perceived vulnerability of nuclear installations".

However, the Ministry of Defence said yesterday that a "quick response" procedure was in place to cover the whole of the country in the event of a hijack attack.

The task of shooting down a hijacked commercial airliner has been assigned to RAF Tornado F3 fighters based at Coningsby, Lincolnshire.

<http://www.guardian.co.uk/Archive/Article/0,4273,4332381,00.html>

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Leadership Void Slows Top Health Agencies

By Ceci Connolly

Washington Post Staff Writer

Thursday, January 10, 2002; Page A01

Even as it copes with bioterrorism and an array of complex medical decisions, the Bush administration is running into trouble finding leaders for some of the nation's most critical health agencies.

The absence of leadership at the National Institutes of Health, the Food and Drug Administration and several other departments has raised concern that key decisions on vaccine development, cloning, prescription drugs, vitamins, stem cell research and the abortion pill mifepristone may be postponed or lack input from some of the best scientific minds in the country.

The void is so glaring that in recent weeks, lawmakers, industry executives, academics and patient advocates have aggressively lobbied the White House to put forth nominees. Meanwhile, Health and Human Services Secretary Tommy G. Thompson has turned to a cadre of outside consultants to help determine how to spend an extra \$2.5 billion on bioterrorism.

"The bottom line is when the country is trying to mobilize for a huge new effort to fight bioterrorism, there aren't any generals for the battle," Sen. Ron Wyden (D-Ore.) said.

Unlike Cabinet secretaries such as Colin L. Powell, Donald H. Rumsfeld and Paul H. O'Neill, who have spent decades mastering the issues within their departments, Thompson has no medical or scientific background, making the need for expertise all the more acute, many in the field say. HHS lags far behind most other federal departments, with some top positions vacant for more than a year.

"Without good leaders, the agencies will continue to tread water without making any progress," said Mohammed Akhter, executive director of the American Public Health Association. It is embarrassing, he said, in a country with "the highest number of Nobel Prize winners in the world to not have people in these positions."

The vacancies appear to be the result of a combination of factors, including a delay in filling some jobs caused by the administration's struggle with the complex issue of funding for embryonic stem cell research and objections by Senate Democrats to candidates aligned with industry. But the delay also appears to illustrate how politicized many aspects of science and medicine have become, making it difficult to find stellar scientists willing to navigate the political land mines that come with top federal jobs.

Observers like Akhter also blame an element of "benign neglect" by the Republican administration.

"I just don't have the feeling it's been a first priority for this administration," said Paul Berg, a Nobel Laureate in chemistry and a researcher at Stanford University. "Most people are suspicious there's a litmus test to be passed. Certainly, the talk at NIH has been that somebody who is pro-choice, pro-stem cells and pro-cloning is persona non grata."

Since taking office a year ago, Thompson has been without an assistant secretary of health and a director for the Health Resources and Services Administration, the agency responsible for many programs that provide care for the indigent. In a matter of weeks, the surgeon general's office will be empty. The vacancies at the top have had a ripple effect; five NIH institutes, for instance, are without directors.

White House spokeswoman Anne Womack said that a search for "the best" candidates is difficult under normal circumstances but the terrorist attacks complicated the process even further. "The events of last year made us take a second look and take into consideration the new environment," she said. "We're looking for the best, and sometimes the best takes longer."

HHS spokesman Bill Pierce said that Thompson has great faith in the acting directors and that he recently sent the names of three prospective FDA commissioners to the White House. "The secretary believes these are very important positions," Pierce said. "You don't want to rush it for the sake of rushing it."

To a large extent, Thompson has tried to fill the gaps himself, personally negotiating a contract to purchase the anti-anthrax drug Cipro and deciding to offer an anthrax vaccine as an experimental treatment for thousands exposed. That means Bush has sometimes lacked the guidance and credibility that come with a high-powered health team. When he crafted a compromise on federal funding for stem cell research, the president relied heavily on Thompson and Jay Lefkowitz, a lawyer in the Office of Management and Budget who was new to the complex issue. Several researchers complained that they were left to implement a politically volatile policy with little opportunity to shape it.

During the anthrax crisis, a rotating cast of politicians, doctors and mid-level researchers presented what many viewed as a confusing, often contradictory, public health message.

Surgeon General David Satcher could have filled that role, said Michael Place, president and CEO of the Catholic Health Association. But because Satcher is a Clinton administration holdover, he lacked the authority to emulate Surgeon General C. Everett Koop's leadership during the AIDS epidemic.

Rep. James C. Greenwood (R-Pa.) said the administration did not want to nominate a director for NIH until Bush took a position on embryonic stem cell research.

"It's understandable they needed to get that resolved," he said. But four months after Bush announced his compromise, Greenwood recently wrote the White House "urging that appointments be made as quickly as possible at FDA, NIH and the other institutes."

The effects may not be felt immediately, Wyden said, but they could be far-reaching.

"If we waste several years and we see continued hemorrhage of scientific talent out of these agencies, we're going to pay dearly in the development of new therapies, new pharmaceuticals, bioterrorism, et cetera," he said.

From its 300-acre campus in Bethesda, the NIH oversees a \$20 billion research operation. It has been in the vanguard of treatments and cures for heart disease, cancer and depression. Yet, two years after the departure of Harold Varmus, prominent researchers are still waiting to see who will take over the institute, said Elizabeth Marincola, executive director of the American Society for Cell Biology.

"Acting directors are in an untenable position," Marincola said. Without a director, it is difficult to recruit others to run research institutes, and the environment becomes "demoralizing" for the people working there, she added.

The FDA approves a vast array of new drugs, medical devices and food products. Products that account for 25 cents of every consumer dollar spent in the nation come under its purview. In coming months, it faces challenges on

controversial matters such as dietary supplements, vaccines, the artificial heart and renewal of the Prescription Drug User Fee Act, a law in which drug companies subsidize the approval process.

"During this time, the pace of FDA approval of vital new drug and biotechnology products has slowed dramatically," a group of Massachusetts biotech executives wrote to White House Chief of Staff Andrew H. Card Jr. Other FDA projects "are also suffering from the lack of a clear administration position, which creates a political vacuum that inevitably reduces the industry's and the public's confidence in FDA."

All of this comes at a time when scientific progress is racing into new frontiers, Berg said. "What is so tragic about this is that the science is booming; there are an enormous number of opportunities," he said.

<http://www.washingtonpost.com/wp-dyn/articles/A22667-2002Jan9.html>

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Thursday January 10 1:02 PM ET

U.N. Experts Oppose Smallpox Stock Destruction

GENEVA (Reuters) - U.N. health experts have called for delaying a 2002 deadline for destroying the world's remaining stocks of smallpox virus to give time for research into better vaccines, officials said on Thursday. The recommendation, which has been endorsed by the director-general of the World Health Organization ([news - web sites](#)) (WHO), Gro Harlem Brundtland, will be put to a meeting of the executive committee of the United Nations ([news - web sites](#))' agency next week.

The WHO general assembly, the top policy-making body of the 191-state organization, set the deadline two years ago amidst growing hopes that the killer disease, which was officially eradicated over two decades ago, would never reappear.

But the anthrax attacks in the United States late last year, following the September 11 plane hijackings, have raised the specter of disease being used as a weapon of biological warfare by extremist groups or rogue states.

Stocks of the variola virus -- which causes smallpox -- are needed for the development of defensive vaccines and the United States, a WHO member, has already announced it will not destroy its reserves.

"This has been an ongoing debate for years. Even before September 11 there was clear reluctance in some quarters to get rid of the remaining virus," said one international health official.

Officially, Russia is the only country apart from the United States to retain quantities of variola virus, but weapons experts believe other countries could also possess stocks.

Unlike anthrax, which killed five people in the United States after being delivered by mail, smallpox is highly contagious.

Although it was officially declared eradicated in 1980, experts warn it could be highly dangerous if deliberately re-introduced because it can kill in 30 percent of cases.

The team of experts, appointed by Brundtland in 1999 at the request of the Geneva-based WHO's general assembly, said that progress had been made in improving vaccines but that more work was needed.

"The...main recommendation, therefore, was that serious consideration should be given to further extending the deadline for the destruction of variola virus," the WHO said in a document posted on its Web site.

Existing smallpox vaccine can have harmful side-effects which is one reason why the WHO recently reaffirmed its opposition to inoculations other than for those working with the virus or otherwise at direct risk.

The 32-state executive committee, appointed on a rotating basis from member states, is due to meet from January 14-21.

It normally takes its decisions on a consensus basis and presents them as recommendations to the annual assembly held in Geneva in the spring.

http://dailynews.yahoo.com/h/nm/20020110/sc/health_who_smallpox_dc_1.html

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U.S. Selling Papers Showing How To Make Germ Weapons

By William J. Broad

Months into an expanded war on bioterrorism, the government is still making available to the public hundreds of formerly secret documents that tell how to turn dangerous germs into deadly weapons.

For \$15, anyone can buy "Selection of Process for Freeze-Drying, Particle Size Reduction and Filling of Selected BW Agents," or germs for biological warfare. The 57-page report, dated 1952, includes plans for a pilot factory that could produce dried germs in powder form, designed to lodge in human lungs.

For years, experts have called such documents cookbooks for terrorists and condemned their public release. Now, with new urgency, scientists and military experts are campaigning to have the weapon reports locked away from public access. The Bush administration is considering such restrictions, said John H. Marburger III, the White House science adviser.

Experts warn that the documents, even though decades old, have information that could help produce the kind of sophisticated anthrax powder that killed five people and traumatized the nation last fall.

"It's pretty scary stuff," said Raymond A. Zilinskas, a senior scientist at the Monterey Institute of International Studies, a private group that studies germ defenses. "There's a whole bunch of literature out there that's really cookbook."

One report obtained by Dr. Zilinskas from the government is "Development of 'N' for Offensive Use in Biological Warfare." 'N' was the code letter for *Bacillus anthracis*, the germ that causes anthrax. Another is "The Stability of Botulinum Toxin in Common Beverages." The germ-derived substance is the most poisonous known to science. Such documents were written from 1943 to 1969 when the United States employed an army of scientists and engineers to research, develop and build a stockpile of germ weapons. Although Washington renounced germ warfare in 1969 and dismantled its arsenal, the government preserved the studies, recipes and blueprints on which the arms were based.

Hundreds of the documents have been declassified over the decades as part of an effort to make public the inner workings of government. Today, federal agencies routinely sell the documents to historians and other researchers, mostly by Internet and telephone. More sensitive but still unclassified reports are made available by mail under the Freedom of Information Act.

Critics of the disclosure policy inside and outside the government now fear that the germ warfare documents, in the wrong hands, could speed the development of weapons meant to cripple the United States, and they want new precautions.

"We can't get it back," Dr. Zilinskas said of papers already released. "But we can prevent further leakage of this material to the general public."

Shortly before the terror attacks, Dr. Zilinskas and W. Seth Carus, a germ expert at the military's National Defense University, wrote a report on bioterrorism that called for a group of experts to review the old literature and see which reports should be reclassified, safeguarding them with new layers of federal secrecy.

But just the opposite has been under way at Fort Detrick, Md., home of the Army's old program to make germ weapons. Two years ago, in the Clinton administration, the military post was asked to examine what other secret and confidential reports should be declassified.

With new resolve since the anthrax attacks, that work has now shifted into reverse. In an interview, the military expert evaluating 3,500 documents at Fort Detrick said he became alarmed at those already available and is calling for new barriers.

"The problem is not declassification — it's reclassification," said the official, Harry G. Dangerfield, a medical doctor at Fort Detrick during the offensive germ program. Dr. Dangerfield now works for the Science Applications International Corporation, a military contractor conducting the Fort Detrick study.

"My major concern is the number of unclassified documents that need to be protected against F.O.I.A. requests," Dr. Dangerfield said, referring to the Freedom of Information Act. "They're locked up, but it doesn't do any good if people can write or call in and get them because of the law."

Dr. Dangerfield, a retired Army colonel, is preparing a report on the topic for Maj. Gen. John S. Parker, the Fort Detrick commander.

Dr. Dangerfield said in an interview that the report would call for the reclassification of more than 200 reports he characterized as how-to manuals for turning germs into weapons. His first examination of them, he said, "raised the hair on the back of my neck."

But advocates of public access to government information are wary of the new push. Steven Aftergood, a secrecy expert at the Federation of American Scientists, a private group in Washington, said that it could promote bad policy. "If these documents pose a threat, they should be controlled, if possible," Dr. Aftergood said. "But classification abuse is rampant in the government and authority to reclassify things could wreak havoc."

Ronald M. Atlas, president-elect of the American Society of Microbiology, the world's largest organization of germ professionals, based in Washington, echoed those concerns.

"Once the cat's out of the bag, can you ever really put it back?" Dr. Atlas asked. And even if new secrecy is possible, he said, it would be wise to exercise caution.

"I don't think how-to manuals should be out there," Dr. Atlas said. "But if it's information that has dual purposes and can protect public health, it should be released."

Experts say several factors contributed to the original declassification of the documents.

After the germ warfare program was ended in 1969, fewer scientists were available to help assess what declassifications might be appropriate. So federal officials over the years increasingly fell back on automatic declassification steps that encourage disclosure.

That trend quickened after the cold war when the Clinton administration urged that secrets throughout the government by divulged whenever possible, experts said.

Today, the germ reports declassified by military officials are made available to the public by the Defense Technical Information Center, at Fort Belvoir, Va. The center, the Pentagon's main repository of scientific and technical data, has a comprehensive Web site that helps identify old documents.

The military center provides many of its reports to an arm of the Commerce Department known as the National Technical Information Service, in Springfield, Va. From its Web site, the service sells the pilot- factory document and many others to the public.

For instance, "Screening Studies with Variola Virus," dated 1958, describes Army studies to explore the weapon potential of smallpox, a highly contagious illness that even without military aid managed to kill more people over the ages than any other disease.

Experts judge it problematic, if not impossible, to shield reports already declassified and made public. Mr.

Aftergood, of the Federation of American Scientists, said the current executive order governing such issues, signed by President Clinton in 1995, bars reclassification. Mr. Aftergood added, however, that agencies could stop sales and try to limit disclosures to those documents that have to be obtained under the Freedom of Information Act.

Steven Garfinkel, who recently stepped down as director of the government's Information Security Oversight Office after 21 years, said protecting the unclassified documents under the current law "would be very difficult."

Because of such difficulties, Mr. Garfinkel added, the Bush administration is considering an executive order that would allow reclassification, which the government permitted from 1982 to 1995 but is barred under the Clinton order.

Dr. Marburger, the White House science adviser, said the issue was under high-level review. He added that he was personally concerned that terrorists might obtain potentially deadly information from the government but urged a cautious approach to the problem.

Experts agree that reclassification might work fairly well for documents already declassified but not yet publicly disseminated, like some at Fort Detrick.

But Mr. Garfinkel added that, for documents already made public, reclassification might do more harm than good. "It could give visibility to information that would have been less noticed if left alone," he said.

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Washington Post

January 14, 2002

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The Missile Trail: An Intelligence Turnaround

How Politics Helped Redefine Threat

By Michael Dobbs, Washington Post Foreign Service

Second of two articles

Until 1998, it was an article of faith for the U.S. intelligence community that no potentially hostile country -- apart from Russia or China -- would pose a long-range missile threat to the United States before 2010, at the earliest.

Scarcely a year later, CIA analysts were saying something entirely different. They predicted that North Korea, one of the world's last surviving hard-line Communist states, could test an intercontinental ballistic missile capable of hitting U.S. territory "at any time." According to a September 1999 intelligence forecast, Iran could test such a missile "in the next few years."

This abrupt shift in thinking was prompted, in part, by a series of troubling events, including missile tests in North Korea and Iran, nuclear tests in India and Pakistan, and reports of Russian scientists selling their services to the highest bidder.

But there is also evidence that the new intelligence forecasts were the result of something else: a concerted campaign by the Republican-dominated Congress, supported by Israel, to focus attention on the leakage of missile technology from Russia to Iran. The government of then-Prime Minister Binyamin Netanyahu feared that Israel could soon become a target of Iranian missiles. Congressional Republicans wanted to build public support for a national missile defense system.

"It was the largest turnaround ever in the history of the [intelligence] agency, and I was part of making it happen," said Rep. Curt Weldon (R-Pa.), a leading critic of what he often called the Clinton administration's "misguided" approach to Russia in the late 1990s. Weldon, a champion of missile defense, was openly scornful of pre-1999 CIA estimates of the missile threat from states such as Iran and North Korea.

Weldon and other conservatives said the intelligence shift was a necessary corrective to what they viewed as politically skewed intelligence forecasts during the Clinton years. They were particularly upset by a 1995 national intelligence estimate that flatly stated that "no country, other than the major declared nuclear powers, will develop or otherwise acquire a ballistic missile in the next 15 years that could threaten the contiguous 48 states and Canada."

By contrast, Joseph Cirincione, director of the nonproliferation program at the Carnegie Endowment for International Peace, said the 1995 intelligence estimate "holds up pretty well in hindsight." He accused Weldon and other Republicans of mounting a "conscious political strategy" to attack the intelligence assessment because "it stood in the way of a passionate belief in missile defense." As a result, he said, the intelligence process has become politicized.

"Intelligence analysts have learned to give the Congress what they want, while preserving the integrity of the analysis," said Cirincione, a former Democratic staffer on Capitol Hill. "What happens is that you get assessments that include all possible worst cases."

CIA officials argue that the post-1998 estimates are the result of "improved tradecraft." They say the agency reviewed its procedures following publication of a 1998 report on the ballistic missile threat by a bipartisan commission headed by a former (and future) defense secretary, Donald H. Rumsfeld, and began to consult a wide range of independent experts from industry and academia.

Some consumers of intelligence within the government say the shifting forecasts of the ballistic missile threat are a case study of how an ostensibly objective intelligence process can be buffeted by conflicting political pressures, from home and abroad.

"Nobody believes the CIA estimates," said a longtime counter-proliferation expert from another government department. Another analyst said that "nuances" tend to get taken out of the estimates as they proceed up the bureaucratic ladder. "The job of the CIA is to warn, but they never back down from previous warnings," the analyst said.

A Congressman's Battle

The argument over the 1995 intelligence estimate got underway even before its publication. According to Capitol Hill sources, the Clinton administration leaked details of the still-secret document to congressional Democrats, who used it to argue the case against missile defense.

As chairman of the House Armed Services Committee's subcommittee on military research and development, Weldon assumed responsibility for countering the Democratic offensive. He did so by staging a dramatic showdown with a CIA analyst, David Osias, who had been dispatched to Capitol Hill to give him and other committee members a briefing on the intelligence finding in a secure fourth-floor conference room.

Weldon said he "went ballistic" after Osias insisted that there would be no hostile missile threat to the continental United States for at least 15 years. "I said, 'Do you mean to tell me that the unrest in Russia represents no additional threat?'" The congressman said he was also furious that the CIA study excluded Alaska and Hawaii from its threat assessment. (A North Korean missile would have to travel nearly 6,000 miles to hit California, but only 3,700 miles to hit Alaska.)

"This is over, this is [expletive], this is a politicized process," Weldon recalled yelling, before bringing down the gavel on the closed-door session. Intelligence sources confirmed that Osias was subjected to a severe grilling at the secret hearing.

The debate over the 1995 estimate coincided with an aggressive Israeli campaign to alert the Clinton administration to what Netanyahu advisers saw as a growing missile threat from Iran, a radical Islamic state that has often threatened to destroy Israel. Israel had information that Iran was working on a scaled-up Soviet Scud missile, known as the Shahab-3, that would theoretically be able to hit Tel Aviv from launching pads in western Iran. Israel had intelligence that Russian missile experts were traveling to Tehran and giving advice to the Iranians. Former Israeli officials said they were greeted with skepticism from Clinton administration officials who were reluctant to strain relations with Russian President Boris Yeltsin, then seen in Washington as the symbol of Moscow's fledgling democracy.

"It was as if the Americans did not want to know the facts, or the facts were too embarrassing for them to confront," said Uzi Arad, a former intelligence adviser to Netanyahu.

The Israeli allegations of technology transfers between Moscow and Tehran became the basis of a series of congressional hearings in 1997 and 1998, and Republican calls for economic sanctions against any state that provided missile technology to Iran. The confrontation came to a head in June 1998 when the Republican-dominated Congress passed the Iran Missile Proliferation Sanctions Act, which would have imposed mandatory sanctions on any country selling missile technology to Iran. The legislation was promptly vetoed by President Bill Clinton. Administration officials scrambled to enlist Israeli support to get Congress to back down and accept a diluted version of the legislation, rather than override the president's veto.

"The administration's rationale was that it was up to the Israelis to get the genie back into the bottle since they had let it out in the first place," said a Republican staffer, describing how Israel persuaded House Speaker Newt Gingrich (R-Ga.) to go along with White House wishes.

Against their own judgment, congressional conservatives allowed the presidential veto to stand. But they would soon acquire fresh ammunition in their campaign against the 1995 intelligence estimate.

'Mass Conversion' at CIA

The first serious attempt by congressional Republicans to persuade the CIA to revise its estimate of the long-range missile threat ended in failure. A blue-ribbon panel headed by former CIA director Robert M. Gates reported to Congress in December 1996 that the technical case against "rogue states" acquiring intercontinental ballistic missiles, or ICBMs, in the foreseeable future was even "stronger" than that presented in 1995.

Unhappy with the conclusions of the Gates committee, Congress appointed a new commission, this one headed by Rumsfeld. The Rumsfeld report -- delivered in July 1998 -- turned out to be much more alarmist than the 1995 estimate. The Rumsfeld report predicted that a rogue state would be able to "inflict major destruction" on the United States "within about five years" of a decision to develop an ICBM. For several of those years, the report added, "the U.S. might not be aware that such a decision had been made."

According to commission members, the five-year estimate was based largely on briefings from missile engineers at major U.S. defense contractors, including Lockheed Martin and Boeing. The commission asked the American rocket builders how long it would take them to build an ICBM, from the starting point of a Third World country such as Iran. "The answer was five years or less than five years," recalled Barry Blechman, chairman of the Henry L. Stimson Center, a research organization in Washington.

Rumsfeld accused the CIA of committing the sin of "mirror-imaging" in its earlier estimates: the notion that "just because it took us 10, 12 years to do something, it is likely to take others that long or longer." In fact, he insisted, it would probably take other countries less time to develop ICBMs, as much of the relevant information was already available.

By framing the question to U.S. missile experts in a novel way, the Rumsfeld Commission avoided the mistake of assuming that a country such as North Korea would necessarily follow the same path to an ICBM as the United States or Russia. But critics argue that the commission might have fallen into a mirror-imaging trap of its own: the assumption that an isolated Third World country has the same access to missile components and missile technology as a major U.S. defense contractor.

"I don't believe that the Rumsfeld Commission made a serious analysis of the industrial base needed to develop long-range missiles," said Theodore A. Postol, a professor of missile technology and national security policy at the Massachusetts Institute of Technology. "Of course, American contractors will tell you that building an ICBM is easy. But these are people who live in an incredibly rich industrial environment. A Third World country faces an entirely different set of problems."

The political impact of the Rumsfeld report was strengthened by the fact that its conclusions were unanimous. The Democrats had been allowed to appoint three members of the nine-member panel, so it was difficult for them to argue that the report was politically tainted. The Democrats' experts included Blechman and Richard L. Garwin, a leading nuclear physicist strongly opposed to missile defense on technical and scientific grounds.

Garwin and Blechman said they were struck by the way in which countries such as North Korea, Iran and Pakistan were pooling their resources and taking advantage of existing know-how. Since the beginning of the Bush administration last year, and Rumsfeld's reappointment as defense secretary, the conclusions of the Rumsfeld Commission have been elevated to quasi-doctrinal status within the government, according to several officials. "Nobody dares say a word against Rumsfeld, at least in public," said one government nonproliferation expert. Another spoke of a "mass conversion" within the CIA, even among analysts who were predicting something entirely different just a few years before.

Even so, the Rumsfeld Commission's conclusions remain highly controversial, even within the government. The State Department's intelligence unit, the Bureau of Intelligence and Research, has long taken a less alarmist view of North Korean and Iranian capabilities than has the CIA or the Pentagon. A new national intelligence estimate on the missile threat, issued this month, publicly enshrined the State Department's dissenting views for the first time, officials said, even though the declassified version referred only to an unnamed "agency."

The new estimate also acknowledged what outside experts have long maintained: Rogue states or terrorist groups are unlikely to use missiles as their method of choice for delivering weapons of mass destruction. The estimate said that "covert delivery methods," such as a ship or a civilian airplane, were cheaper and more reliable than ballistic missiles.

The idea that a country such as Iran or even Libya could be well on its way to deploying an ICBM -- as opposed to a short- or medium-range missile -- without the United States knowing about it strikes many outside experts as absurd. "Iran is trying to achieve a credible regional capability," said a French Foreign Ministry official. "A more long-range program is a matter of speculation. They say they want a satellite launch capability, but we don't see them putting much effort into it."

Rumsfeld Commission members continue to defend their conclusions. "We never said anything about states deploying ICBMs by a certain date, we just said they would be capable of doing it," said Blechman, who notes that the U.S. intelligence community failed to predict a huge Soviet nuclear arms buildup in the 1960s under Leonid Brezhnev.

'Golf Ball of Destruction'

The Rumsfeld Commission report led U.S. intelligence experts to reconsider the very nature of an intercontinental-range ballistic missile. Before 1998, they had thought of ICBMs as similar to the weapons possessed by the United States and the Soviet Union: sophisticated, powerful and highly accurate missiles that could be hidden in silos and launched at a moment's notice.

The new definition of an ICBM, as conceived by the Rumsfeld Commission and embraced by the CIA, covers virtually any rocket capable of landing a warhead, however small, somewhere on U.S. soil, at least in theory. Under the new definition, North Korea already has ICBM capability against the United States because it possesses a rocket that could, conceivably, land a tiny warhead somewhere in Alaska.

The North Korean Taepodong-1 is a three-stage rocket, tested for the first (and so far only) time on Aug. 31, 1998, soon after the release of the Rumsfeld report. According to U.S. intelligence officials, the first stage was a No Dong, the North Korean version of a scaled-up Scud B. The second stage was the North Korean equivalent of a Scud B. The third stage consisted of a small, solid-fuel rocket probably acquired from Pakistan or China, carrying little more than a radio transmitter.

This unwieldy contraption was the missile equivalent of the "Hail Mary pass," according to David Wright, a senior analyst for the Union of Concerned Scientists. Although the third stage exploded and the missile flew no more than 1,000 miles, the launch demonstrated that North Korea might soon have the capability of putting a satellite into orbit.

The elastic nature of what exactly constitutes an ICBM has caused some skeptics within the government to joke about what they call "the golf ball of destruction."

"There is an idea out there that if you can land anything on American territory, the result will be vast devastation. That is simply not true," said a government expert at odds with the official CIA line.

The skeptics argue that the North Koreans have a long way to go before their missiles pose a real threat to the United States. First, they have to develop a rocket that actually works. Second, they need a warhead that will not burn up when it reenters Earth's atmosphere. Third, they have to develop rockets powerful enough to deliver a militarily significant payload. And fourth, they need to mate the missile to a nuclear or biological warhead. Many experts believe that a chemical or biological attack on the United States using a crude Taepodong-type rocket can be excluded because such weapons must be delivered with a high degree of precision to be effective. Nuclear warheads can be less accurate, but are much heavier than chemical or biological weapons, meaning that they would require more powerful rockets to reach the United States.

According to CIA estimates, a two-stage Taepodong-2, which is now under development by North Korea, could deliver a payload of several hundred kilograms to Alaska or Hawaii. This would probably be sufficient to deliver a biological warhead, but not enough for an unsophisticated nuclear weapon.

A larger question is whether 1950s Soviet Scud technology, of the kind now widely available in the Third World, can serve as a basic building block for ICBMs. Russian scientists cite their own experience in arguing that a Scud cannot be upgraded to an ICBM. To develop missiles that could reach the United States, the Soviets moved to systems with more powerful propellants and vastly improved guidance systems.

"There are certain things you can do to improve the Scud, such as lightening the airframe, installing new turbopumps and clustering engines, but you quickly run into limitations," said Timur Kadyshev, a missile expert at the Moscow Institute for Physics and Technology. "At some point, you need to switch to better technology."

Until recently, this was also the view of most CIA experts. Before 1998, CIA officials routinely argued that North Korea would have to adopt an entirely new propulsion system to achieve ICBM capability, the development of which could easily be detected by U.S. technical means. The agency's position now is that a similar result can be achieved by clustering engines and adding extra stages.

Russian experts say that, while this may be feasible in theory, the addition of each new engine increases the chances of failure. A two-stage Taepodong-2, for example, is believed to consist of four No Dong engines clustered together as the first stage, and a single No Dong as the second stage. Mathematically, such a missile is at least five times as likely to fail as a single, far-from-reliable, No Dong.

Another significant change in CIA methodology has been the abandonment of the long-held view that a lengthy testing period was required before a new missile system could be considered a real threat. According to Robert Walpole, the national intelligence officer responsible for coordinating estimates of missile threats, the willingness of Third World countries to resort to nuclear blackmail has made the accepted wisdom of a five-year gap between testing and deployment obsolete.

When the United States and the Soviet Union deployed missiles, he explained, "they had to be in hard silos so that the other guy could not take them out. But if what you are more interested in doing is threatening the other side, not having a retaliatory launch capability, you don't have to deploy [missiles] in that sense of the term." Many independent experts say they believe that repeated tests are required before a missile can be deployed.

As military weapons, the Taepodong-1 and Taepodong-2 clearly leave much to be desired. Before the rockets can be launched, they have to be assembled next to tall open-air gantries, in full view of U.S. spy satellites and planes flying off North Korea's coast. The process of fueling and completing final checks takes three or four days, according to Charles P. Vick, a missile expert at the Federation of American Scientists.

As a political and propaganda weapon, however, the Taepodong-1 has already proved very effective. The North Koreans "got everybody's attention" with their August 1998 missile test, said Joseph S. Bermudez, a leading expert on North Korean missile programs. "They made America wake up and pay attention to them, which is one of the things they desperately want. They want to be perceived as a powerful nation."

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Philadelphia Inquirer

January 14, 2002

Bush May Censor Germ-Warfare Guides

The U.S. has been selling the documents, which demonstrate how to manufacture weapons.

By Scott Lindlaw, Associated Press

WASHINGTON - The Bush administration is considering whether to restrict distribution of government documents that describe how to make germ weapons, White House officials said yesterday.

U.S. stockpiles of offensive germ-warfare agents were destroyed nearly three decades ago as part of the 1972 Biological Weapons Convention. But the government kept the blueprints for manufacturing such weapons, and continues to sell them.

"The administration is generally conscious of this issue," John H. Marburger 3d, director of the White House Office of Science and Technology Policy, said in a telephone interview yesterday. "There are obviously people thinking about what to do about it."

The administration is likely to take action on the matter, Marburger said, adding that he did not know what action would be taken or when.

Homeland Security Director Tom Ridge hinted that the administration was strongly considering placing new restrictions on the information.

"We are a very open society and we're very much an information society, and there are a lot of us that think that some of the information we share with the public probably should be restricted in some fashion," Ridge said on CNN's Late Edition.

Marburger and other administration officials are "looking to see what kind of information should be so easily available in the public domain," Ridge said. Members of Congress have also aired concerns about the issue, he said.

"We are open, we are trusting, but we have to be a little bit more careful and a little bit more vigilant," Ridge said.

"And we may have to take a look at these kinds of issues from a different perspective because of the tragedy of Sept. 11 and the follow-on incidents that we've had to deal with."

Marburger said he had not personally seen the documents on assembling such weapons. Among the questions is how dangerous they are, he said.

"It is clear that they are based on a picture of biology that's almost 50 years old," he said. "It's not clear to me how useful they are."

The New York Times first reported on the documents and the debate in yesterday's editions, and said despite their age, the manuals contained information that could help produce the kind of anthrax powder that infected at least 18 people and killed five in the United States last year.

According to the newspaper, federal agencies routinely sell the now-declassified documents to historians and researchers. The government provides more sensitive papers on the subject after Freedom of Information Act requests.

Harry G. Dangerfield, a retired Army colonel, is preparing a report for the military that will call for the reclassification of more than 200 reports. He told the newspaper that those reports are cookbooks for turning germs into weapons.

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Washington Post

January 13, 2002

Pg. 1

The Missile Trail: Seeking Superpower Know-How

A Story Of Iran's Quest For Power

A Scientist Details The Role of Russia

By Michael Dobbs, Washington Post Foreign Service

First of two articles

MOSCOW -- The first time Vadim Vorobei went to Iran in 1996, he was amazed by the number of foreign missile scientists wandering openly through Tehran. For the most part, they were people like him: elderly representatives of the old Soviet technological elite impoverished by the collapse of communism and willing to sell their services to the highest bidder.

Although the Iranians made a show of keeping the scientists apart, said Vorobei, they frequently bumped into each other at hotels and restaurants. One day, he would spot a leading Russian missile guidance specialist; the next, a well-known missile engineer from Ukraine. All had been lured to Tehran on the pretext of giving lectures on rocket technology to Iranian university students.

From the U.S. government perspective, Vorobei and his friends are symbols of one of the most serious challenges of the post-Cold War era, the worldwide proliferation of ballistic missiles. In this view, Iran is a "rogue state" seeking weapons of mass destruction and sponsoring international terrorism. The prospect of such a country acquiring long-range missiles is the nightmare scenario underpinning President Bush's decision to push ahead with the deployment of a national missile defense system and withdraw from the 1972 Anti-Ballistic Missile Treaty with Russia.

Seated in his office at the Moscow Aviation Institute, one of several Russian institutions under U.S. sanctions for proliferating missile technology, Vorobei insists that American fears are exaggerated. He claims he and other Russian missile scientists were brought to Iran in part to demonstrate to the rest of the world that Iran was making

rapid strides toward becoming a major missile power that would soon be able to target the United States. In fact, he insisted, Iran's capabilities remain much more modest than that.

"It was a huge mess," recalled Vorobei, a department head at the institute, the alma mater of many of Russia's leading missile engineers, describing what he said was a five-year collaboration with Iran, from 1996 to 2000. "The Iranians took people who were needed and people who weren't needed. There was something artificial about it. They were trying to show that a lot of Russians were working for them and everybody else should be scared by it."

The threat has been taken seriously by the Bush administration, which used it to justify rapidly pushing ahead with the deployment of a missile defense system. A congressional commission headed by Donald H. Rumsfeld, now the defense secretary, predicted in July 1998 that Iran might be capable of causing "major destruction" to the United States "within five years."

The differing perceptions over what Iran has achieved, and how much outside assistance it is receiving, go to the heart of the missile defense debate in the United States. While few experts doubt that Iran is rapidly emerging as a regional missile power, opinions are divided over whether its programs pose a real threat to U.S. territory, as the Bush administration has suggested.

This is the first of two articles looking at different aspects of the worldwide missile threat, beginning with a detailed examination of the Iranian missile program and Russia's role as a proliferator of missile technology. A follow-up article tomorrow will look at the record of U.S. intelligence in keeping track of the threat from such developing countries as Iran and North Korea.

An Underground Railroad

Vorobei's activities confirm what Western analysts have long suspected and the Russian government has repeatedly denied -- the existence of an underground railroad of Russian scientists traveling to Iran to work on missile and nuclear weapons programs. In two lengthy interviews, Vorobei offered an unprecedented description of how Iranian officials recruited their Russian tutors, brought them to Iran and sought missile technology and know-how. But Vorobei's experiences also underscore the difficulties Iran has faced in developing long-range missiles.

Interviews with policymakers, missile scientists, and independent experts in a half-dozen countries suggest that the prospect of a ballistic missile attack on U.S. territory by a "rogue state" is in some ways less likely now than in the summer of 1998, when the Rumsfeld Commission issued its five-year warning. North Korea, the Third World country furthest along in missile development, has declared a testing moratorium. Iran has had trouble perfecting its top-of-the-line Shahab-3 missile, with a range of about 800 miles, and has shown little sign of embarking on a serious intercontinental ballistic missile (ICBM) program.

"The Iranian program is not developing as quickly as the Iranians have claimed, and Israeli and American assessments expected," said Gerald M. Steinberg, a strategic issues expert at the Jerusalem Center for Public Affairs. He said that the Shahab-3 missile, when it is eventually deployed, will be capable of hitting Israel, but is hardly a threat to the United States, nearly 6,000 miles away.

"A missile remains the least likely delivery vehicle for a weapon of mass destruction," said Joseph Cirincione, director of the nonproliferation project at the Carnegie Endowment for International Peace. "The September 11th events have shown that people can inflict mass casualties on the U.S. with cutting knives and imagination. There are many cheaper, more reliable, but still very destructive means of attacking America that don't require the expense, technical sophistication and exposure that come with a ballistic missile."

A Symbol of Power

Ever since the United States and the Soviet Union deployed tens of thousands of nuclear-tipped missiles during the Cold War, the ballistic missile has become the classic symbol of a country's great-power aspirations. A ballistic missile is one that falls unassisted in a predetermined trajectory following its initial launch. Ballistic missiles are usually larger, and capable of flying longer distances, than cruise missiles, which are powered throughout their flight.

With the possible exception of Nazi Germany and the V-2, the precursor to all modern-day missile systems, no country has ever produced a missile entirely on its own. Both the United States and the Soviet Union were helped enormously by teams of German scientists and missile engineers, recruited or simply taken prisoner at the end of World War II. The Soviets helped the Chinese, who helped the North Koreans, who have helped the Iranians, Syrians and Libyans.

The Iranian Shahab-3 is closely modeled on the North Korean No Dong ballistic missile, which is itself a scaled-up version of the Soviet Scud, according to U.S. officials and independent experts. A liquid fuel missile designed by Soviet engineers in the late 1950s, the Scud originally had a range of less than 100 miles. Over the last three decades, the Scud has become the most widely proliferated missile in history. By scaling up Scuds, clustering them together, and stacking them on top of each other, engineers have been able to greatly extend the range of what remains a fairly primitive missile.

CIA analysts say that Iranian officials sought Russian assistance to build their own improved version of the No Dong, manufacturing their own sophisticated components rather than relying on systems imported from North Korea. Any assistance by Russia to the Iranian program would be a violation of its commitments under the 1987 Missile Technology Control Regime, an international agreement that restricts the sale of parts and expertise for any missile with a range of more than 300 kilometers, or 186 miles.

Just how much help Vorobei and his colleagues gave Iran is a matter of dispute. U.S. and Israeli experts say that Russian cooperation with Iran has been more extensive than Vorobei and his colleagues are willing to acknowledge. For example, they said they have evidence of Russian experts attending Iranian static engine tests, in which a missile engine is strapped to the ground and fired, prior to a full missile test.

Vorobei said the Russian contribution to the Iranian missile program has been limited by Iranian paranoia and secretiveness. "They wanted to receive information from us, but at the same time they were not willing to tell us everything they were doing," Vorobei said. "That made it difficult to help them."

For the most part, the Russian scientists who have traveled to Tehran appear to have been professors and academics like Vorobei rather than top-flight experts from missile design institutes, whose movements are much more tightly controlled by Russian security agencies.

"It's meat-and-potatoes stuff," said Steven Zaloga, a leading American expert on the Russian missile program.

"These guys are useful at the level of basic research, not advanced development."

While Vorobei and other Russians concede that they helped Iran build up its general scientific base -- the first step toward a successful missile program -- they insist they stopped well short of transferring secret information banned by international agreement. "It is one thing to learn rocketry in theory, and quite another to move to actual production," said Yevgeny Mishelov, dean of the Moscow Aviation Institute's metallurgy department.

Vorobei said he doubted U.S. projections that Iran could obtain an intercontinental ballistic missile within five or even 10 years. "Their progress is very slow," said Vorobei. "In order to build missiles, you need a strong resource base. You need steel, aluminum, not to mention composite materials, a machine tool industry. Iran has very little of this."

As an insight into the difficulties that Iran has encountered in its missile program, Vorobei cites the attempt to produce jet vanes for the Shahab-3. Located at the bottom of the engine, the movable vanes help steer the missile and are an essential part of its guidance system.

Vorobei explained that the vanes must be coated with a heat-resistant material to protect against super-hot gases from the engine exhaust. He said Iran was unable to acquire either reinforced carbon-carbon or tungsten, two materials often used to coat jet vanes, so they used graphite, a poor substitute. While graphite can be used for jet vanes -- Germany used it for that purpose during World War II for its V-2 missile -- it tends to crack under pressure. "They created an engine, but not a proper guidance system," Vorobei said, pointing to the failure of two out of three tests of the Shahab-3. "They don't have any real metallurgical industry of their own. Their only hope is to steal something from neighboring countries, but they can't steal everything."

By 1998, Vorobei said, there were signs that Iran was beginning to get "disillusioned" with the Russian involvement, and instituted a large-scale leadership shake-up in Sanam, the government agency responsible for recruiting dozens of Russian experts for work on the Shahab-3 and other programs.

Transfers Overstated

Prior to the publication of the Rumsfeld Commission report in 1998, CIA analysts testified that it would take Iran at least 10 or 15 years to develop an ICBM, even with maximum cooperation from the Russian government. "Ten years is when the Russians come in, build the plant, operate the plant, and build the missiles," the agency's top missile expert, David Osias, testified in 1996. Osias is now a senior analyst with the Defense Intelligence Agency.

While there has been leakage of missile technology from Russia to Iran, it has not been on the scale that Osias and others predicted would be necessary for Iran to develop an ICBM within 10 years. A detailed analysis of all allegations of missile component transfer between Russia and Iran over the past decade suggests that transfers have been sporadic, low-level, and largely confined to dual-use materials that can be used for missile construction rather than entire missile systems, or even sub-systems such as engines or guidance packages.

Most if not all of the transfers have involved private companies, possibly with the complicity of well-placed Russian government officials. The most concrete allegations of Russian assistance to the Iranian missile program concern the 1997-98 period when the Clinton administration imposed sanctions on 10 Russian companies for cooperating with Iran. There have been no new sanctions on Russian companies since 1998, despite claims by top CIA officials that Russian transfers of missile technology and expertise to Iran remain "substantial."

U.S.-Russia Distrust

"Our American partners have not presented us with concrete facts [of proliferation]," said Sergei Yekimov, the Kremlin's chief enforcer of export controls. "Their allegations are usually based on emotions and suspicions rather than corroborated evidence."

U.S. officials said they have provided some information about alleged missile technology transfers to the Russian government, but refuse to go into greater detail for fear of compromising intelligence sources and methods. They said that Russian authorities often have appeared more interested in tracking down the source of the Western intelligence information than in cracking down on proliferators.

"It seems to me there has been a drop-off in the more egregious types of assistance," said Robert Gallucci, the Clinton administration's special envoy on nonproliferation issues. "This could mean that we did a good job. . . or it could mean that the character of assistance has moved to different areas that are harder to detect, and harder to control."

There is little doubt that Iran made a serious effort, beginning in the early 1990s, to acquire Russian missile technology. According to U.S. and Israeli officials, items sought by Iran have included turbopumps, used to pump fuel and oxygen into the combustion chamber; specialty steels to construct a lighter airframe, to reduce the missile's weight and extend its range; wind tunnels, to test the aerodynamics of missile parts; ablative materials, to protect the warhead from extreme heat; and furnaces to produce graphite and carbon-carbon, high grade ablatives.

How many of these items were actually delivered is another matter, however. At least two 1997 contracts for turbopumps and a gas furnace were canceled following U.S. complaints, according to U.S. and Russian officials.

Sometimes, intelligence information is misleading. The Austrian government, acting on tips from the CIA and Israeli intelligence, intercepted two tons of basalt fiber as it was being loaded onto an Iranair flight bound for Vienna from Tehran. The shipper was the Russian Grafit Research Institute. According to the CIA, the basalt fiber was a heat-resistant material that could be used to coat missile warheads.

After analyzing the fiber and impounding it for nearly a year, the Austrians concluded that the U.S. claim was "not plausible," and returned the shipment to Russia. U.S. officials continued insisting that the fiber could have been used as an insulating material for missiles.

"Intelligence information can sometimes be very good, but sometimes I truly wonder how they come up with such information," said Helmut Krehlik, head of the export control department of the Austrian Ministry of Trade, who investigated the basalt fiber shipment.

Accumulating evidence against proliferators is not analogous to being in "a court of law," countered Uzi Arad, a former director of intelligence for the Israeli Mossad, who investigated Russian arms sales to Iran in the mid-1990s.

"We have evidence that is sufficient to convince ourselves. We are not obligated to prove anything to the Russians. We do not act according to due process and rules of evidence in this business."

U.S. officials say they are at least as concerned about the exchange of know-how as the sale of technology. "The nature of proliferation has been changing over the last decade," says Robert Einhorn, senior adviser to the Center for Strategic and International Studies and the State Department official in charge of counter-proliferation from 1992 until last year.

"We used to think of proliferation as selling a missile system or building an enrichment plant," he said. "Today, it is more likely to mean exchanging know-how over a cup of coffee, a Russian specialist getting work with an Iranian who has been specially briefed to ask him questions about solving a particular problem. It is software rather than hardware."

North Korea's Role

There is less doubt about North Korean assistance to Iran. The relationship dates to 1985 when Iran's former president, Hashemi Rafsanjani, signed a \$500 million agreement with Pyongyang for the delivery of North Korean missiles based on Soviet Scud technology.

Since then, according to U.S. intelligence officials, North Korean assistance to Iran has ranged from entire missile systems to missile components and engines to transporter-launchers for its short-range Shahab-1 and Shahab-2 missiles. In return, Iran has shipped hundreds of thousands of barrels of crude oil to the energy-starved Asian nation. U.S. officials depict the Shahab-3 as an Iranian version of the North Korean No Dong. In addition to Iran, the CIA believes that North Korea also sold the No Dong to Pakistan, which renamed the missile the "Ghauri." These missiles are all "brothers and cousins" of the No Dong missile, said Robert Walpole, the CIA's national intelligence officer for strategic programs.

Unlike Pakistan, which merely repainted the fuselage of the No Dong, Iran attempted to independently produce the main components of the missile and improve on the North Korean original. Iranian officials have complained about the low quality of North Korean missile components, and the sometimes exorbitant prices charged by Pyongyang for its services.

"The Persians were indignant with the North Koreans," said Vorobei. "They complained that the Koreans were selling their technology very expensively. The Iranians would take it to pieces, and then reassemble it."

Engine Failure

While Iran has succeeded in independently producing some of the components for the Shahab-3 missile, it also has experienced significant setbacks. The biggest, according to U.S., Israeli, and Russian officials, was its apparent inability to perfect its own version of the Shahab-3 engine that it sought to build, rather than relying on the original North Korean engine.

So far, there have been three flight tests of the Shahab-3; in July 1998, February 2000, and September 2000. The first and third tests ended in failure, apparently due to problems with the domestically produced engines, according to U.S. and Israeli experts. The second test, in February 2000, appears to have been relatively successful, but only because Iran replaced its own engine with an engine produced in North Korea.

The experts said that the new engine appeared to be one of a batch of a dozen missile engines that were detected by U.S. spy satellites in November 1999 being loaded onto an Iranian cargo plane at an airport near the North Korean capital, Pyongyang. "You don't buy a dozen engines unless you are in deep trouble," said an Israeli government expert.

Despite the setbacks, most experts agree that Iran will perfect and eventually deploy the Shahab-3 missile, enabling it to reach targets in Israel and the eastern Mediterranean.

The big question is whether Iran will attempt to build a new generation of missiles capable of traveling much longer distances. Evidence that Tehran is interested in longer range missiles rests mainly on statements by Iranian officials referring to a Shahab-4 and Shahab-5, as follow-ups to the Shahab-3.

Recent statements from Iranian officials, along with evidence from Iranian missile tests, suggest that Iran is now shifting its emphasis from long-range liquid fuel missiles, such as the Shahab, to short-range solid-fuel missiles. This would parallel Iran's overall threat analysis, which highlights regional threats from countries such as Iraq and Israel, as well as U.S. forces in the Persian Gulf, over a potential long-range threat from the United States or Europe. "There is a big difference between Iranians trying to cover the region, and developing a system that will allow them to attack the U.S.," said Gary Samore, a senior fellow at the International Institute for Strategic Studies in London and former White House senior director for nonproliferation for the Clinton administration. "I don't think the Iranians have yet made a fundamental decision about developing an ICBM capability."

Other analysts say that, while Iran's long-range missile programs may have faltered recently, the country is systematically laying the foundation to become a world-class missile power. Iran is proceeding in a much more structured way than North Korea, which is more willing to take risks and short-cuts, according to Clyde Walker, director of the Defense Department's Missile and Space Intelligence Center in Huntsville, Ala.

"Iran went into this business because they got clobbered by Iraq [in the 1980-88 war]," he said. "They are laying down the infrastructure [and] will continue until they have world-class systems."

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Washington Post

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Collapse Of Soviet Union Proved Boon To Iranian Missile Program

By Michael Dobbs, Washington Post Foreign Service

At the very time that Russian weapons designers found themselves adrift following the collapse of communism in the early 1990s, Iran was desperately in search of technological know-how to become a major missile power.

As a member of the Soviet Union's technical elite, Vadim Vorobei enjoyed a wide number of privileges under communism, including paid vacations, a heavily subsidized apartment, access to special stores, free medical care and a dacha. When the Communist system fell apart, all that disappeared. Suddenly, almost overnight, he and thousands of other highly-trained missile engineers found themselves pitched from the ranks of the well-off into the ranks of the destitute.

"Everything collapsed," recalled Vorobei, whose salary as head of the faculty of engine production at the Moscow Aviation Institute, one of Russia's leading rocketry schools, is just \$90 a month. "Our only hope was abroad. Iran, Pakistan, Guinea. Anybody who was interested in us."

Iranian students began showing up at the Moscow Aviation Institute in the mid-1990s, at a time when the institute was desperate to raise money to compensate for reduced state subsidies. By 1996, there were 16 Iranian undergraduate students studying engineering and rocketry, along with several postgraduates in more specialized fields such as aerodynamics.

The postgraduate students soon began cultivating the Russian professors, and invited them to Tehran to give lectures. Vorobei said that he was among an initial group of five Russian missile experts who traveled to Tehran in 1996. Eventually, dozens of Russian missile scientists went to Iran, including specialists in guidance systems, metallurgy, and aerodynamics. The visits were kept secret and Russia publicly denied that its scientists were helping Iran.

While the pay was meager by Western standards -- between \$50 and \$100 a lecture plus expenses -- it was much more than the missile scientists could earn in Russia.

A powerfully built man in his late sixties, Vorobei said he traveled to Iran about a dozen times between 1996 and 2000, often in the company of an even older friend, Vassily Loginov. They would usually go for a week or two at a time, sometimes staying in the Iranian Foreign Ministry guesthouse, sometimes in hotels.

At first, Vorobei's role was limited to giving lectures at a technical college in Tehran. He is an expert in the use of composite materials in rocket production, and has co-authored a university textbook on the subject. After the lectures, the Iranians would pepper him with questions about different aspects of missile production. Sometimes, they would arrive with blueprints of a missile part, and ask whether it had been designed "in a good or a bad way." "I would make suggestions to them," he recalled.

Russian professors willing to cooperate more extensively with Iran were offered more lucrative work, sometimes earning as much as \$100,000 a contract, according to Vorobei. He and Loginov, a specialist in turbo engines, worked with the Iranian Energy Ministry on several projects, such as designing high-tech joints, methods of producing turbine-based machines, and a study of various types of springs.

While the Iranians did their best to be hospitable, Vorobei said he never felt at home in Tehran, and would have much preferred to be working with Americans or Europeans. Like most Russians, he chafed against the stringent alcohol restrictions. Some scientists tried to smuggle vodka into the country, only to see it confiscated at the airport. "It was depressing. There was nothing to do in our free time," he complained, describing a limited television diet of politics on one channel, clerics on the second channel, and sports on the third.

He suspected early on that both the U.S. and Israeli intelligence services were breaking into his computers and tapping his telephone conversations. "As soon as we went to Tehran, they found out straight away." U.S. and Israeli officials confirm that they were familiar with Vorobei's activities in Iran.

When Vorobei first began traveling to Tehran in 1996, he faced few obstacles. Indeed, he is at pains to point out that he went with the approval of his superiors. Passports were arranged officially through the Foreign Ministry and the state security service, the FSB.

According to Yevgenia Albats, a prominent Moscow journalist who has studied Russian missile proliferation, FSB officials routinely took commissions from Iranian procurement agents in return for facilitating the travel arrangements of Russian experts. Some Western intelligence officials believe this indicated high-level Kremlin approval for missile cooperation with Iran; others take a more benign view, arguing that it reflected the anything-goes atmosphere of the Yeltsin years, when even FSB agents could be bought.

It was not until 1998 that Vorobei began getting different signals from Russian authorities, in response to vociferous complaints from U.S. and Israeli officials. According to Moscow Aviation Institute's director, Alexander Matveyenko, the Russian security services began complaining about Vorobei's activities. "The Americans were putting pressure on them, and they were putting pressure on us," he said.

A row broke out within the institute after the United States canceled \$1 million in research contracts because of the Iranian connection. The professors who had been receiving U.S. grants blamed Vorobei and Loginov for their troubles. Matveyenko sided with the anti-Iranian group.

Vorobei and his supporters sought to disguise their activities by establishing a private business outside the institute. The business concluded an agreement with the Iranian Ministry of Energy, which U.S. officials said has long been used as a front for missile procurement efforts by Tehran. "Officially, we stopped work [with Iran] but in fact we continued," says Vorobei.

U.S. and Israeli intelligence soon heard of the new arrangement, and insisted that it too be halted. Finally, in the summer of 2000, Matveyenko called Vorobei to his office and gave him an ultimatum: Stop working for Iran or cut

off all ties with the institute. Reluctantly, Vorobei complied. He said the Iranians were so offended that they refused to pay him what they already owed him.

In addition to prohibiting professors from traveling to Iran, Matveyenko also stopped Iranian students from taking courses at his institute. The last six Iranians -- out of a total of 29 -- graduated from the institute last year. Despite these steps, U.S. sanctions against the institute are still in force. "There is a program for imposing sanctions, but not for removing them," Matveyenko complained.

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