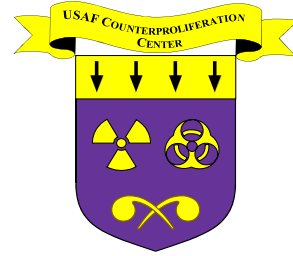


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CIA World Factbook 2002

In general, information available as of 1 January 2002 was used in the preparation of this edition.

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Washington Post
October 18, 2002
Pg. 1

U.S. Would Send Troops To Hit Scuds

Pledge Given Sharon to Keep Israel Out of War

By Vernon Loeb and Thomas E. Ricks, Washington Post Staff Writers

The Bush administration has told Israel that it would deploy Special Operations forces in the western Iraqi desert at the start of any war against Iraq to destroy facilities that could be used to launch missiles at Israel, senior U.S. and Israeli officials said yesterday.

The administration's pledge, which was conveyed during this week's visit to Washington by Israeli Prime Minister Ariel Sharon, follows an undisclosed reconnaissance mission in western Iraq this summer by Israeli special forces, according to a former U.S. defense official. The covert Israeli operation was aimed at determining whether Iraq had the capability to launch drone aircraft, in addition to Scud missiles, from its desert air bases.

The administration's decision to commit ground forces to destroy what military analysts say is a relatively small number of mobile Scuds in Baghdad's arsenal underscores the strong U.S. desire to keep Israel out of any war, as the first Bush administration succeeded in doing during the Persian Gulf War 11 years ago.

While U.S. military officials have long said that preventing Iraqi Scud attacks on Israel would be a top priority if and when a military campaign against Iraq begins, the administration's pledge to use ground forces to attack the missile sites as one of the opening steps of a war signals a radical departure from the Gulf War.

In that conflict, the Pentagon only belatedly involved Special Forces in the Scud hunt after more than 1,000 aircraft sorties failed to stop the Iraqis from firing 39 Scud missiles at Israel and others at U.S. forces in Saudi Arabia and other targets. The military's inability to destroy a single mobile Scud ranked as its single biggest failure during Operation Desert Storm.

As they did in 1991, U.S. officials fear that an Israeli entry into a war against Iraq could ignite a broader conflict in the Middle East. But many analysts believe that attacking Iraq's mobile Scuds is even more important than it was in the Gulf War because any invasion of Iraq would be aimed at removing Iraqi President Saddam Hussein from power, a factor that could make the Iraqi leader more likely to use chemical or biological weapons in any missile attack. Iraq used conventional warheads on its missiles in 1991.

In recent weeks, more than 1,000 U.S. Special Operations troops have been training in Jordan with troops from Jordan, Oman and Kuwait. The exercise, called Early Victor, focused on covert missions such as operating behind enemy lines.

Israeli military and political leaders have said that, unlike 1991, they will not be restrained from attacking Iraq if hit by Iraqi missiles. "I don't think Israel will be able to sit quietly if we are hit by ballistic missiles," one senior Israeli

official said here yesterday. "One of the lessons the United States has learned from the last war is to understand that Israel will not be able to sit as we were sitting 11 years ago."

But the official, speaking one day after Sharon met with President Bush at the White House, said the administration's planning for an invasion of Iraq would "be based on preventing an attack against Israel."

"I'm sure the United States will make every effort to avoid the need of Israel to act by taking care to destroy [Iraq's capabilities], or deploying its forces in areas where there is a danger," the official said. "The possibility that Israel will have to act is very low because this time the necessary steps have been taken."

One senior administration official said that U.S. forces "absolutely" would be deployed to western Iraq at the start of any invasion because Defense Secretary Donald H. Rumsfeld and other officials believe an Iraqi Scud attack on Israel is "at the top of the list of what could go wrong -- so let's take a look at that now and keep it from happening." Another administration official said that while the use of Special Operations forces in western Iraq would only be on a short-term basis, the Israelis are pushing for a permanent U.S. troop presence to maintain security in an area the Israelis believe will quickly fill up with refugees in event of a U.S. invasion. That type of long-term troop commitment, the official said, is only being considered at present by administration officials.

The western Iraqi desert contains, among other things, a complex of airfields known as "H-3," which was used to store chemical weapons during the Gulf War, according to GlobalSecurity.org, a defense consulting group.

Anthony H. Cordesman, a former Pentagon official who is a military and diplomatic analyst at the Center for Strategic and International Studies, said that the U.S. military will be conducting a major "Scud suppression mission from day one," not only to keep Iraq from attacking Israel but also to protect Turkey and U.S. forces in the region, which are most vulnerable as they assemble in the region before an attack.

Cordesman, who recently published a book on Iraqi military capabilities, said Baghdad is believed to have only 12 to 25 Scuds in its arsenal. "We're talking about a much different mission than we were during the Gulf War," he said. "We're not talking about the same kind of threat."

Cordesman said the Pentagon's Scud hunt would also involve manned and unmanned reconnaissance aircraft, fighters and attack helicopters. U.S. combat aircraft have been optimized since the Gulf War to fire precision weapons at targets designated by Special Operations forces on the ground, a tactic employed with success in the war in Afghanistan.

Global Hawk and Predator drones, which only became operational in the past few years, now give the U.S. military persistent reconnaissance over a battlefield not available to commanders a decade ago.

Eliminating western Iraq as a launching pad for Scud missile attacks also would enhance the ability of U.S. and Israeli anti-missile batteries to combat whatever missiles Iraq might still try to fire from farther east.

Staff writers Bradley Graham and Karen DeYoung contributed to this report.

<http://www.washingtonpost.com/wp-dyn/articles/A43598-2002Oct17.html>

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New York Times

October 18, 2002

Pg. 1

U.S. Says Pakistan Gave Technology To North Korea

By David E. Sanger and James Dao

WASHINGTON, Oct. 17 — American intelligence officials have concluded that Pakistan, a vital ally since last year's terrorist attacks, was a major supplier of critical equipment for North Korea's newly revealed clandestine nuclear weapons program, current and former senior American officials said today.

The equipment, which may include gas centrifuges used to create weapons-grade uranium, appears to have been part of a barter deal beginning in the late 1990's in which North Korea supplied Pakistan with missiles it could use to counter India's nuclear arsenal, the officials said.

"What you have here," said one official familiar with the intelligence, "is a perfect meeting of interests — the North had what the Pakistanis needed, and the Pakistanis had a way for Kim Jong Il to restart a nuclear program we had stopped." China and Russia were less prominent suppliers, officials said.

The White House said tonight that it would not discuss Pakistan's role or any other intelligence information. Nor would senior administration officials who briefed reporters today discuss exactly what intelligence they showed to North Korean officials two weeks ago, prompting the North's defiant declaration that it had secretly started a program to enrich uranium in violation of its past commitments.

A spokesman for the Pakistan Embassy said it was "absolutely incorrect" to accuse Pakistan of providing nuclear weapons technology to North Korea. "Pakistan has a very responsible and tight nuclear program," the spokesman, Asad Hayatuddin, said. "We have never had an accident or leak or any export of fissile material or nuclear technology or knowledge."

The suspected deal between Pakistan and North Korea underscores the enormous diplomatic complexity of the administration's task in trying to disarm North Korea, an effort that began in earnest today.

In Beijing, two American diplomats, James A. Kelly and John R. Bolton, pressed Chinese officials to use all their diplomatic and economic leverage to persuade North Korea to give up its nuclear weapons program. The subject is expected to dominate a meeting next week between President Bush — who a spokesman said today "believes this is troubling and sobering news" — and President Jiang Zemin of China, at Mr. Bush's ranch in Texas.

Mr. Bush did not address the North Korean revelation during appearances in Atlanta and Florida today. Secretary of Defense Donald H. Rumsfeld did talk about the disclosures at the Pentagon, but one official said the effort to play down the topic was part of an administration strategy of "avoiding a crisis atmosphere."

At the same time, White House and State Department officials argued that what they called North Korea's "belligerent" announcement to a visiting American delegation two weeks ago demonstrated the need to disarm Iraq before it enjoys similar success.

"Here's a case in North Korea where weapons have proliferated and put at risk our interests and the interests of two of our great allies," Japan and South Korea, Richard L. Armitage, the deputy secretary of state, said today. "It might make our case more strong in Iraq."

Some Democrats agreed, while opponents of a military strike against Iraq made the reverse argument, saying the administration's muted reaction to North Korea, and its announcement that it wanted to solve the problem peacefully, should apply equally to Baghdad.

There were conflicting explanations today about why the administration kept the North Korean admission quiet for 12 days.

The White House said it simply wanted time to consult with Japan, South Korea and other Asian nations, and with members of Congress, before deciding its next step. But some of the administration's critics suggested that the real reason was that the administration did not want to complicate the debate over Iraq in Congress and the United Nations.

On Capitol Hill, conservative Republicans argued that the 1994 accord that froze North Korea's nuclear program — an agreement the North Koreans now say is "nullified" — should be scrapped, and they talked about new efforts to isolate North Korea.

But within the Bush administration, it has been a matter of some controversy whether to abandon the Clinton-era accord. Hard-liners have argued that it should be scrapped.

But other officials, including some at the State Department and the National Security Council, are warning that walking away from the accord carries a major risk: it could free North Korea to remove from storage "canned" nuclear fuel rods with enough plutonium to produce upwards of five nuclear weapons.

American officials said their suspicions about North Korea's new nuclear program only came together this summer.

Mr. Bush fully briefed Prime Minister Junichiro Koizumi of Japan on American suspicions when the two leaders met in New York in September, according to Japanese and American officials. But it is unclear how strongly Mr. Koizumi raised the issue later with Kim Jong Il during his visit to North Korea.

Today, several of Mr. Bush's top aides argued that North Korea and Iraq were separate cases — and while North Korea might have more advanced weapons, it could be contained through diplomacy and the 37,000 American troops stationed in South Korea. Appearing on ABC's "Nightline" tonight, Condoleezza Rice, Mr. Bush's national security adviser, said that "Saddam Hussein is in a category by himself, as still the only leader to have actually used a weapon of mass destruction against his own people, against his neighbors." She said that Mr. Kim was also a dictatorial leader, and that North Korea had a record of exporting missiles and other weaponry around the world. But she said "we do believe that we have other ways to deal with North Korea."

While the action the United States would seek against North Korea was still being debated, one senior official said that Mr. Bush and his aides would ask Russia and China to exercise some "direct leverage" against North Korea by restricting trade with it.

The officials would not discuss the nature of their intelligence, but clearly much of the administration's evidence centered on Pakistan.

In 1998, Pakistan tested its version of a North Korean-designed missile called the Nodong, which has a range of more than 700 miles. But Clinton administration officials say they could not figure out how Pakistan, which was virtually broke at the time, could afford the purchases.

The Central Intelligence Agency suspected it knew the answer: Pakistan's nuclear arsenal employs weapons made of highly enriched uranium. That was of interest to North Korea, officials say, because the process of enriching uranium can be conducted underground, in a cave, without leaving traces that American spy satellites could detect. Exactly when North Korea received equipment from Pakistan is still unclear. But today American officials estimated that North Korea's highly enriched uranium project started sometime around 1997 or 1998 — roughly the same time Pakistan tested the missiles it received from North Korea.

<http://www.nytimes.com/2002/10/18/international/asia/18KORE.html>

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Wall Street Journal
October 18, 2002

North Korea Admits Existence Of Nuclear-Weapons Program

By Charles Hutzler, Sebastian Moffett, John Larkin and David Cloud, Staff Reporters of The Wall Street Journal
BEIJING -- A senior U.S. State Department official arrived here as the U.S. began hurried consultations with North Korea's neighbors to start building pressure on Pyongyang after its admission that it is developing nuclear weapons. Assistant Secretary of State James Kelly, whose tense meetings in Pyongyang earlier this month prompted the North Korean disclosure, will brief leading Chinese foreign-ministry officials Friday before traveling to Seoul and Tokyo over the weekend. His initial strategy is to unite the region's powers to persuade North Korea to abandon the program, said a Western diplomat in Beijing.

The nuclear controversy erupted late Wednesday when U.S. officials in Washington said North Korea had acknowledged it has a secret nuclear-weapons program. Senior U.S. officials said North Korea's deputy foreign minister, Kang Sok Joo, conceded his government had embarked several years ago on a program to develop a nuclear device using highly enriched uranium. That marks a violation of the commitment Pyongyang made in 1994 to halt its pursuit of nuclear weapons. U.S. officials said Mr. Kelly presented evidence pointing to the existence of the secret program, which North Korea initially disputed but then acknowledged.

The disclosure is certain at least temporarily to end a warming trend in North Korea's relations with Japan and South Korea, Washington's strongest allies in the region, and to strengthen the position of some Bush administration officials who favor a hard line toward Pyongyang. It also could complicate administration moves to confront Saddam Hussein as it deals with a nuclear program that appears further along than Iraq's efforts.

U.S. and South Korean officials called on North Korea to end the program and to submit to inspections. The White House said North Korea had given no indication during the Pyongyang meetings that it would do so. A senior U.S. official said Mr. Kang claimed North Korea "had a nuclear-weapon program and more" and appeared "assertive and aggressive" during the meetings. But North Korea's decision to disclose the program may also be a signal that Pyongyang is willing to strike a deal on ending the program in return for economic assistance and more normal relations with Washington.

A U.S. State Department spokesman, Richard Boucher, said that in the talks with Mr. Kelly, North Korean officials said they considered the 1994 agreement with Washington freezing Pyongyang's nuclear program "nullified." The statement also noted that Washington had been prepared this summer to improve relations, "provided the North were to dramatically alter its behavior" but that the U.S. "is now unable to pursue this approach."

U.S. officials said on Thursday they aren't sure how far the North Koreans have actually gotten with their program to create highly enriched uranium. One senior official said the U.S. got evidence this past summer that Pyongyang had acquired centrifuge technology from a third country but declined to say which one. That official also said that, so far, they had no evidence that the North Koreans were actually producing the fissile material.

Going forward, the disclosure could open a divide between the U.S. and South Korea and Japan, who may be inclined to see North Korea's admission as a positive sign and a continuation of an opening to the outside world. But U.S. officials are playing down the idea that North Korea's admissions were a further step to come clean and normalize their relations with the world.

They point out, first, that the U.S. had to confront Pyongyang with the evidence of their enrichment program before officials there would acknowledge it. And they said there is no sign yet that the North Koreans are willing to abandon the program.

Instead, U.S. officials suspect this as a repeat of the 1993 brinkmanship with the Clinton administration and a clear effort to blackmail the U.S., Japan and South Korea into providing more aid and recognition, while making few concessions of its own.

U.S. officials said they are eager to work with allies in the region to pressure the North Koreans to give up their program. And they were careful to say they are discussing possible sanctions, including a cutoff of fuel-oil deliveries and an end to all other nonhumanitarian support. "We aren't going to be belligerent," said a senior official. He added that U.S. officials believe that "everyone in the region shares our belief that a nuclear-armed North Korea is a bad thing for regional stability."

Some U.S. officials are fearful that the North Korean leader, Kim Jong Il, may follow up his hard line with the U.S. with even more concessions to Tokyo or Seoul in a bid to deepen the rift over North Korea that has been growing since President George W. Bush took office. In one nightmare scenario, the North Korean leader offers to visit Seoul, just as the U.S. is calling on the South Koreans to isolate the North to pressure it into dropping its nuclear program.

For the Bush administration, the disclosure is sure to raise questions about whether the U.S. should be concentrating on Iraq. Some analysts, however, said it argues for a similar approach to both countries, two of the three members of what President Bush labeled an "axis of evil," including Iran. "This shows that both Iraq and North Korea are nuclear cheaters. We need to close the contradiction there. We need to stop coddling the North Koreans on the expectation that they'll behave," said Henry Sokolski, executive director of the Nonproliferation Policy Education Center, a Washington think tank. He is a strong critic of North Korea.

The Bush administration wouldn't describe the intelligence that was presented to North Korea, except to say that it indicated that the goal appeared to be a weapon using enriched uranium. In previous assessments, the U.S. has said the North Korean reactor relied on plutonium, but the use of a second fuel signifies a more ambitious program. The U.S. wouldn't say how far along North Korea is in pursuit of a uranium weapon.

Pyongyang's admission raises the possibility that the U.S. and North Korea are headed for a repeat of the tense standoff they had in 1994 when North Korea announced it was pulling out of the Nuclear Non-Proliferation Treaty. After high-level talks, the U.S. agreed to the construction of two 1,000-megawatt light-water nuclear reactors in North Korea. In return, Pyongyang was supposed to freeze its nuclear weapons program.

Now, diplomats say, North Korea may be trying to provoke a new confrontation either to extract concessions or sow distrust of Washington's intentions among allies South Korea and Japan.

But in Japan and South Korea, government officials and diplomats haven't jumped to the conclusion that the North's admission was a threat. Rather, they suspect North Korea may be pioneering a bizarre tactic to make friends in the world: Confess to outrages.

North Korea's admission was hardly a shock; The U.S. has long believed in the existence of a North Korean nuclear program. The shock was that Pyongyang finally confessed to a nuclear program after years of refusing access to International Atomic Energy Agency inspectors, presumably knowing that they would find evidence for a nuclear program.

That makes a second outrageous confession in a month. At the Sept. 17 summit in Pyongyang with Japanese Prime Minister Junichiro Koizumi, Kim Jong Il admitted for the first time that North Korea had abducted Japanese citizens, after decades of denials from the North. The North Korean leader also apologized, blaming rogue elements in the country's military.

That led to a positive result for the North. The Japanese government had known about the abductions for several years, and the stumbling block to improving relations between the two countries had always been Pyongyang's refusal to admit to the kidnappings. At the Pyongyang summit, apparently as a reward for the North's new candor, Japan agreed to restart negotiations toward forming diplomatic ties for the first time since the country came into existence in 1948.

Some analysts think the latest confession is an attempt to pull off the same result with the U.S. After the latest announcement, Asian leaders expressed concern at the new revelations. But they didn't announce any repercussions. Instead of calling off the normalization talks it recently began with the North, Japan's top government spokesman, Yasuo Fukuda, said, "We will raise the issue in the normalization talks and seek a response."

Pyongyang's nuclear program might even make Japan even keener to advance bilateral relations.

In Seoul, Deputy Foreign Minister Lee Tae Sik called for continued dialogue, and said South Korea would raise the issue in a round of cabinet-level talks between the Koreas scheduled for Oct. 19-22 in Pyongyang.

The incident isn't likely to bring inter-Korean talks to a sudden halt, said Yoo Jay Kun, an MDP lawmaker in Seoul. Chinese officials said China hadn't known about the North Korean admission and that it hadn't come up during discussions this week between Chinese leaders and a visiting delegation of senior North Korean legislators.

In the best-case scenario, the Beijing diplomats and strategists believe that North Korea is trying to improve its bargaining position with the U.S., hoping to use the nuclear program to wrest more economic concessions, just as Pyongyang tried previously with its missile program.

Though its influence over Pyongyang has fluctuated, China has expended diplomatic capital and hundreds of millions of dollars in assistance to keep North Korea from economic collapse and nudge it toward reforms.

All that effort, the Chinese strategists say, could now unravel. A belligerent stand-off between North Korea and the U.S. could scuttle South Korea's already much criticized policy of engagement with Pyongyang and cause Japan to halt its only weeks-old diplomatic rapprochement. Even worse, the diplomatic retrenchment could cause North Korea to rollback fledgling economic reforms initiated this year, raising the specter of more misery and, for China, more refugees moving across its border.

-- Susan Lawrence in Beijing contributed to this article.

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U.S. Followed the Aluminum

Pyongyang's Effort to Buy Metal Was Tip to Plans

By Joby Warrick

Washington Post Staff Writer

Friday, October 18, 2002; Page A01

North Korea's surprise admission of a secret nuclear program was prompted by a U.S. intelligence discovery that the isolated state was trying to acquire large amounts of high-strength aluminum, which is used in equipment to enrich uranium for a bomb, weapons experts and officials familiar with the finding said yesterday.

The attempted acquisition of the aluminum helped U.S. analysts conclude that North Korea was constructing a facility to enrich uranium, which North Korean officials are reported to have confirmed in talks with a U.S. diplomat this month.

It is not known what progress North Korea has made toward enriching uranium, or which other countries or companies have helped its efforts to obtain the necessary technology, but the experts and officials say Pakistan may have played a role.

"Centrifuges are hard to build, and North Korea could not have done it without outside help," said David Albright, president of the Institute for Science and International Security in Washington. Albright, a physicist, has tracked North Korea's nuclear program since the late 1980s and was a weapons inspector for the International Atomic Energy Agency.

Rumors about a secret uranium-enrichment facility have circulated for years, but the discovery that North Korea was trying to acquire the aluminum was described as the first hard evidence that the country had an active nuclear program. Officials familiar with the discovery described the evidence as "convincing," but declined to discuss details, including where the aluminum originated or how much North Korea acquired.

Attempts to procure a specific metal or technology are regarded by nonproliferation specialists as important tip-offs that countries are attempting to build weapons, but lack the materials and know-how. Similar purchases have been cited as evidence that Iran and Iraq are also pursuing weapons of mass destruction and the technology to build ballistic missiles that could deliver the weapons.

In addition to tracking the aluminum, U.S. intelligence officials received reports of significant construction activity that appeared related to a uranium-enrichment facility, knowledgeable sources said.

U.S. officials have declined to reveal the location in question. Previously, speculation about enrichment plants had centered on three locations, including a suspected underground facility in Changang province known as Hagap, said Daniel Pinkston, a senior researcher at the Center for Nonproliferation Studies in Monterey, Calif.

Before that, suspicions about a North Korean nuclear program centered on a plutonium-based weapon. But further production of plutonium was banned under a 1994 agreement in which Pyongyang agreed to give up the pursuit of nuclear weapons in exchange for civilian nuclear reactors financed and built by an international consortium.

The apparent decision to pursue uranium-based weapons suggests that North Korea believed it could preserve and even expand its nuclear options, while revealing nothing of its intentions to the outside world, weapons experts said. Gas-centrifuge facilities, which is what the aluminum would be used in, "are not all that large, and conceivably you can build them above ground without being detected," said Jon Wolfsthal, deputy director of the Carnegie Endowment for International Peace's nonproliferation project. "There's nothing unique about them from the outside. And unlike nuclear reactors, they don't have large heat signatures."

Gas-centrifuge technology is one of several methods for producing enriched uranium for nuclear weapons. A typical enrichment plant consists of thousands of fast-spinning centrifuges, which extract fissile material from natural uranium. The centrifuges are built of specialized metals with a high tolerance for heat and pressure.

Despite more than four decades of experience with advanced weapons and nuclear engineering, North Korea lacks the specialized manufacturing capability and know-how to build a gas-centrifuge facility on its own, weapons experts agreed. Many analysts pointed to Pakistan as a possible source of supplies and expertise.

"Pakistan would be a possibility because it used gas centrifuges, and its own nuclear weapons initially used enriched uranium," said Robert Einhorn, former assistant secretary of state for nonproliferation and now a senior adviser at the Center for Strategic and International Studies in Washington.

"Also, North Korea and Pakistan have been known to engage in sensitive trade, including Pakistan's purchase of Nodong missiles from North Korea," Einhorn said. "U.S. officials were concerned at the time about what the quid pro quo might be."

The Bush administration has cited recent Iraqi attempts to acquire thousands of aluminum tubes as evidence of that country's continuing nuclear ambitions. A CIA report on Iraq last month said the type of aluminum sought by Iraq was highly suggestive of a nuclear program, although some analysts said they believed the tubes were intended for conventional arms programs, such as making artillery rockets.

<http://www.washingtonpost.com/wp-dyn/articles/A43632-2002Oct17.html>

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Washington Times

October 18, 2002

Pg. 18

China Issues Rules On Biological Agents

BEIJING — China yesterday said it had issued new rules improving controls on exports of dual-use biological agents that could be used in weapons of mass destruction.

A licensing system will be set up to ensure biological exports do not wind up in unsafe hands, according to the rules, which will take effect in December, Xinhua news agency said.

The rules have "a significant bearing on fulfilling China's international nonproliferation obligations and normal development of foreign trade," Xinhua quoted Foreign Ministry spokeswoman Zhang Qiyue as saying.

The Chinese announcement came ahead of a visit by President Jiang Zemin to the United States scheduled for Tuesday through Oct. 25.

<http://www.washtimes.com/world/20021018-96551044.htm>

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Christian Science Monitor

October 18, 2002

Pg. 1

Difficulties For Bush

By Howard LaFranchi, Staff writer of The Christian Science Monitor

WASHINGTON - The acknowledgment of North Korea's nuclear-arms program may lend fresh credence to President Bush's characterization of Iraq, Iran, and the Korean dictatorship as an "axis of evil," but it also profoundly complicates the American response to the mass-weapons problem.

For all the diplomatic and security knots the Iraq crisis is tying, dealing with Saddam Hussein may turn out to be much less complicated than the challenges posed by the prospect of nuclear, chemical, and biological weapons on the Korean peninsula.

Some observers say the administration will learn now that it was a grave mistake for Bush to equate North Korea and Iraq in his "axis" portrayal: The different approaches to the two challenges will expose the US to more charges of warmongering (in the case of Iraq) and of contradictory action.

Yet while the administration struggles to balance two confrontations with weapons-wielding pariah regimes at once, analysts say there are valid reasons to treat Baghdad and Pyongyang differently – as the Bush administration appears to be doing so far. But the way forward is also rife with pitfalls.

"This [the North Korean issue] is a diplomatically trickier problem than what we have going with Iraq – and we're seeing that's tricky enough," says William Clark, a former assistant secretary of state for Near East affairs.

Certainly some of the hard-line influences in the administration will be arguing for a tough, even threatening, line with a government that admits secretly violating the intent of a 1994 agreement aimed at stopping North Korea from acquiring nuclear arms. Administration sources say the immediate response of some policymakers was that this was a "material breach" of the 1994 accord. Its wording the US has tried to include in a UN resolution dealing with Iraq, and which the US believes constitutes grounds for use of force.

But the differences between Iraq and North Korea are many, and other circumstances make it harder for the US to threaten the use of force on the Korean peninsula as well, analysts say.

To start with, North Korea has a much larger army than Iraq's, and it is deployed against a key US ally, South Korea, where 37,000 US soldiers are stationed. North Korea also has large stores of chemical and biological weapons that could wreak havoc on the peninsula. Whether the North already has weaponized nuclear arms apparently remains a mystery.

"It's not so easy [for the US] to threaten the use of force in this case," says David Albright, president of the Institute for Science and International Security in Washington. He notes that North Korea has enough artillery arrayed to "ruin Seoul [South Korea's capital]... tons of chemical and biological weapons too horrible to contemplate," and what he considers a "50-50 chance they already have some nuclear weapon." Mr. Albright adds, "This is a much harder nut [than Iraq] to crack."

Another factor is that even though the US now knows – as the North Koreans have confirmed – that the North has an advanced nuclear-weapons program, it doesn't appear to know where the research and development is taking place. (The US appears to have determined the North has a nuclear-weapons program based on procurement intelligence, not satellite imaging.) That would rule out an attack to take out a site.

But there are other reasons North Korea may be more reasonable than its belligerent armor indicates and can still be dealt with diplomatically. Steve Montagne, a North Korea expert at the Center for Arms Control and Non-Proliferation in Washington, says the US should consider that Pyongyang has never resorted to using the chemical and biological weapons – unlike Saddam Hussein. And, he says, recent conciliatory gestures to Japan and South Korea suggest the North is open to negotiations.

"I'd expect any hard-line opponents of North Korea to push the parallels between Iraq and the North and to argue for some action down the road, maybe after Iraq's weapons are dealt with," says Mr. Montagne. "But I think that would be unwise. The openings the North Koreans are making in the region suggest there's room to explore another way out of this crisis."

One way forward for the US could be to declare that economic ties with North Korea, which it appears eager for, remain on hold until Pyongyang agrees to dismantle its weapons and accept inspections. "That won't be easy to negotiate, but it might be a way out," says Albright.

Still, pressing negotiations now with North Korea will likely add to criticism around the world about US belligerence towards Iraq. How do you explain to the international community, says Albright, that you're going to war with one country that is developing nuclear weapons, but you're willing to negotiate with another country that already has them?

<http://www.csmonitor.com/2002/1018/p01s03-uspo.html>

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Israeli intelligence: Bin Laden is dead, heir has been chosen

SPECIAL TO WORLD TRIBUNE.COM

Wednesday, October 16, 2002

TEL AVIV — Osama Bin Laden appears to be dead but his colleagues have decided that Al Qaida and its insurgency campaign against the United States will continue, Israeli intelligence sources said.

Al Qaida terrorists have launched a new campaign of economic warfare and are targeting shipping in the Middle East, according to U.S. intelligence officials.

The Israeli sources said Israel and the United States assess that Bin Laden probably died in the U.S. military campaign in Afghanistan in December. They said the emergence of new messages by Bin Laden are probably fabrications, Middle East Newline reported.

But Bin Laden's heir has been chosen and his colleagues have decided to resume Al Qaida's offensive against the United States and Western allies, the sources said.

They said the organization regards the United States as the main target followed by Israel.

"In this case, it doesn't matter whether Bin Laden is alive or not," a senior Israeli intelligence source said. "The organization goes on with help from key people."

The sources said Al Qaida has already determined Bin Laden's heir. They said the heir has not been identified, but is probably not Bin Laden's son, Saad. Saad is said to be in his 20s and ranked within the top 20 members of Al Qaida. Earlier this week, Bin Laden's deputy, Ayman Zawahiri, was said to have released a videotape in which he claims that the Al Qaida leader is alive and functioning. Bin Laden's voice was not heard on the tape.

A senior Bush administration economic official said last week that another major Al Qaida attack anywhere in the world could have devastating economic repercussions.

The FBI warned last week that Al Qaida may be preparing for a major attack. The warning followed the release of an audio tape featuring the voice of Zawahiri.

Bombings in Bali aimed at tourists, an attack on U.S. soldiers training in Kuwait and the bombing of a French tanker in Yemen are signs of the new campaign, [Geostrategy-Direct.com reported in its Oct. 22 edition](#).

The first attack was carried out last week with the Al Qaida terrorist attack on the French tanker Limburg, a 157,000-ton ultra large crude oil carrier, that was bombed as it picked up a pilot before mooring at the Yemeni port of al Shihri.

One crew member was killed and others were injured in the blast.

According to intelligence officials, a small boat approached at high speed from the starboard side of the ship and detonated a large explosive device.

A week earlier, the Office of Naval Intelligence issued an alert to ships in the Middle East to be alert for Al Qaida terrorist attacks.

http://216.26.163.62/2002/me_terrorism_10_16.html

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Artificial antibody might thwart smallpox

Researchers say agent could work post-infection

Jeff Nesmith - Cox Washington Bureau

Thursday, October 17, 2002

Washington --- Tests on laboratory animals in Atlanta will soon help determine whether injections of artificial antibodies could quell a smallpox epidemic after a bioterror attack.

Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, said Wednesday that Harvard University scientists have discovered an antibody designed to attack a specific spot on the surface of smallpox virus and destroy the germ.

Unlike a vaccine, which must be given in advance to immunize potential victims of a disease, the antibodies would be administered after a person was infected, Fauci said at a conference of government scientists. Fauci called the antibody research "one of the most exciting things happening" in the National Institutes of Health's response to the Sept. 11 terror attacks and the anthrax attacks that followed the next month.

Fauci said Ellis Reinherz, an immunologist at the Dana Farber Cancer Institute at Harvard, screened the smallpox genome to find a gene that could be disrupted by the specially designed antibodies.

Then using smallpox genes provided by the Centers for Disease Control and Prevention in Atlanta, Reinherz engineered the antibodies.

"This antibody is now in Atlanta to be tested in animal models," Fauci said. Scientists said the tests likely would be done at CDC.

Fauci said the research was funded by NIH, which last year awarded more than \$16.7 billion in research grants to nearly 50,000 scientists around the country.

In addition to treating active cases of smallpox, the antibody might be effective in treating the reactions to smallpox vaccine, he said.

Speaking at the opening session of a three-day "research festival," at which NIH-funded scientists display their work, Fauci said biodefense is becoming a new mission for the agency.

"We are exploring ways to improve vaccines that we already have and to develop new ones against microbes for which there are no vaccines," Fauci said.

http://www.accessatlanta.com/ajc/epaper/editions/thursday/news_d3ead513c4c331f00075.html

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(Editor's Note: Hyperlink for referenced GAO report follows article.)

U.S. Borders Lack Radiation Detectors

By **THE ASSOCIATED PRESS**

Filed at 7:53 p.m. ET

WASHINGTON (AP) -- It may be several years before border checkpoints will have the equipment needed to detect nuclear material being smuggled into the country, government auditors told a congressional hearing Thursday. One lawmaker called the program to beef up border checkpoints "ineffective and plodding."

The General Accounting Office said that while the federal government in recent years has spent more than \$11.2 million to install portal radiation monitors in Russia, only one U.S. border point has them more than a year after the Sept. 11 terrorist attacks -- and that is part of a pilot project to test the equipment.

More than 4,200 radiation "pagers" that have been given to border patrol agents and are designed to hang from their belts "have limited range and are not designed to detect weapons-usable nuclear material," the GAO said. It said the devices "may be inappropriate for the task" because of their limitations.

Customs officials said the pagers have been shown to detect radiation that could be used for making a dirty bomb. Unlike the pagers, the portal monitors are designed to scan individuals and vehicles for nuclear material as they pass through checkpoints on the nation's borders or at other entry points such as airports.

U.S. Customs Commissioner Robert Bonner said the agency has bought 172 of the radiation devices, with 40 of them expected to arrive soon. More are being ordered.

"These systems are being and will be deployed as rapidly as the manufacturers build them," Bonner told a House Energy and Commerce investigations subcommittee.

But deployment of the portal detectors also has been complicated because the technology is so sensitive, Customs officials said. It detects the smallest levels of radiation from a shipment of bananas or a cargo of TV sets as easily as hidden plutonium or uranium, Customs spokesman Dennis Murphy said in an interview.

To deal with that, the agency is buying devices that can identify different isotopes to work in tandem with the portal monitors, said Murphy. "One of our concerns is jamming up the borders with too many (false) hits. You could really create some backups that we don't need."

The GAO report to the subcommittee said Customs hopes to have 400 of the portal radiation monitors a year from now, but that it will probably take several more years to evaluate the equipment, get it working properly and train users.

Still, lawmakers were not impressed with the progress so far.

The government is spending \$8.3 billion on a missile defense shield and a war with Iraq will cost billions and cost American lives, said Rep. James Greenwood, R-Pa., the subcommittee's chairman. "Given these stark facts, there is simply no explanation for the federal government's diffuse, ineffective and plodding effort to secure this nation's ports and borders from nuclear terrorism."

"Our ports and borders are not significantly more secure against nuclear smuggling than before the (September 11) attacks," added Rep. Billy Tauzin, R-La., chairman of the full Energy and Commerce committee.

Bonner said that 200 X-ray vans with radiation detection units have been deployed to examine individual packages coming through checkpoints. And 96 large-scale X-ray systems that can detect gamma radiation are being used to screen samples of cargo containers coming into the U.S. ports.

The portal monitors have been effective in Russia.

Linton Brooks, acting administrator of the Energy Department's National Nuclear Security Administration, said that over the last five years 250 of the devices have been deployed in Russia under a DOE program.

"The protection of U.S. borders," he said, "really begins thousands of miles from our shores."

Bonner and other administration officials testified that their effort is focused on detecting nuclear, chemical or biological material before it reaches U.S. ports and -- as Bonner put it -- "pushing our zone of security outward so American borders are the last line of defense, not the first."

A key element of the strategy involves targeting high-risk containers and other shipments by closely examining shipping manifests before a cargo leaves the foreign port. Any high-risk containers would then be screened by available radiation detection technology.

Seven countries, representing 11 of the largest 20 ports that ship to the United States, have agreed to the screening and inspection programs. But Bonner acknowledged the success of the program largely depends on accurate cargo manifest information.

And the program is focused on the more than 5.7 million cargo containers that are shipped into the United States annually, and not finding nuclear material that might be carried by an individual or a single vehicle, crossing a border checkpoint.

<http://www.nytimes.com/aponline/national/AP-Nuclear-Smuggling.html>

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Customs Service: Acquisition and Deployment of Radiation Detection Equipment,

by (Ms.) Gary L. Jones, director, natural resources and environment issues, and Laurie Ekstrand, director, tax and administration of justice issues, before the Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce.

GAO-03-235T, October 17.

<http://www.gao.gov/cgi-bin/getrpt?GAO-03-235T>

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USA Today

October 21, 2002

Pg. 1

U.S. Quits Arms Deal With N. Korea

By Bill Nichols, USA Today

WASHINGTON — Administration officials said Sunday that they consider a 1994 U.S.-North Korea arms deal void and are urging U.S. allies in Asia to step up diplomatic and economic pressure on Pyongyang to end its nuclear program.

As reverberations continued from last week's surprise U.S. announcement that North Korea has been pursuing a secret nuclear weapons program, Secretary of State Colin Powell warned of dangerous consequences if Pyongyang tries to remove weapons-grade nuclear material from a reactor closed under the pact.

"I think this would create an extremely grave situation, and I think everybody understands this," Powell said on ABC's This Week.

The practical impact of the collapse of the U.S. role in the multi-nations arms deal is minimal. U.S. officials said the administration is likely to stop sending 500,000 tons of heating oil to North Korea annually, which Washington agreed to do in exchange for North Korea's pledge to end its nuclear program. The U.S. shipment is less than 5% of North Korea's yearly energy needs.

Instead, the administration wants to signal that it will push for more punishing economic sanctions from U.S. allies such as China, Japan and South Korea.

"The North Koreans have blown a huge hole in this political agreement," national security advisor Condoleezza Rice said on CBS' Face the Nation.

Rice and other officials made clear, however, that the administration has no current plans to use military force against North Korea.

Unlike Iraq, which the administration views as a hostile and committed supporter of terrorism, North Korea is seen privately as less of a threat by U.S. officials and much more open to diplomatic overtures, given its dire economic conditions.

The United States also is constrained in its response by the concerns of its chief Asian allies. "This is not just a U.S.-North Korean issue, it's a U.S.-Japanese issue, a U.S.-South Korean issue, U.S.-Chinese, U.S.-Russian and many other nations," Powell said on NBC's Meet the Press.

U.S. allies in Asia fear the instability any attack on North Korea could bring, as well as the likelihood that Pyongyang would strike Seoul in response, devastating South Korea's capital city and endangering 37,000 U.S. soldiers stationed in the region.

<http://www.usatoday.com/usatoday/20021021/4550520s.htm>

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New York Times
October 21, 2002

News Analysis

North Korea's Confession: Why?

By Howard W. French

TOKYO, Oct. 20 — When the United States announced last week that North Korean officials had acknowledged the existence of a secret nuclear weapons program in violation of a 1994 accord, a simple question could be heard echoing around the world: What were the North Koreans thinking?

With a tightly controlled, highly secretive country that is home to the world's only Communist dynasty, the temptation of outsiders to write off North Korea's leaders as crackpot Machiavellis or scarily unpredictable weirdoes is sometimes irresistible.

Many close watchers of North Korean affairs, however, say that for all of the leadership's eccentricities, the decisions are seldom outright irrational. Experts who disagree on many other matters concerning North Korea say decision making in the country whose future holds the key to peace and stability in northeast Asia is driven by an impulse for survival amid ever constricting options.

"A lot of people have interpreted the announcement by North Korea of its uranium enrichment program as a sudden tactical move, perhaps trying to take advantage of the fact that the United States is preoccupied with Iraq," said Victor D. Cha, a Korea expert at Georgetown University in Washington, D.C. "But that's not the case at all. This was a case where Washington simply had the goods on them, and Pyongyang just didn't see any other way out." For years, North Korea has perfected a kind of bloodcurdling official polemics used by the national radio and newspapers to denounce the United States, South Korea and Japan, and to warn its enemies that they will suffer humiliating defeat if they dare attack.

In fact, North Korea experts say, the tone has grown harsher in almost direct proportion to the country's underlying insecurity. Since the early 1980's, when it was still at rough economic parity with its capitalist rival, South Korea, North Korea's situation has grown steadily more precarious.

The late 1980's opened an era of disasters, from the disappearance of the Soviet bloc, whose countries were North Korea's main economic partners, to a series of catastrophic famines brought on by crop failures, droughts and flooding.

Against this backdrop, the United States, the North's great historical enemy, has emerged as the world's sole superpower, and one increasingly willing to move against nations it sees as threats. In another nightmare come true, South Korea, meanwhile, has become vastly richer.

Even China, long the ever dependable ally, has taken more distance from North Korea lately, as witnessed last month by Beijing's arrest of a Chinese investor who had just been handpicked by Pyongyang to oversee a newly announced capitalist enterprise zone.

Lacking in generous friends at a time when the economy is crumbling, the country's leader, Kim Jong Il, is facing a moment of unusual vulnerability. He has already introduced major reforms aimed at opening the economy, but he appears increasingly unable to resist pressures for more far-reaching changes. Among those changes, some experts say, may be the recent trend toward diplomacy by confession.

Faced with the urgent need to fend off economic collapse, Mr. Kim's confession of a uranium-based nuclear weapons program appears to many experts to have been a pragmatic, if ultimately misguided response to an insurmountable obstacle: a Bush Administration that had little interest in engagement.

Admission of the nuclear program rather than denial, appears to have been intended to "persuade the world that Kim Jong Il is a new kind of leader, and his leadership does not resort to terrorist means, or secrecy," said Han S. Park, director of the Center for the Study of Global Issues at the University of Georgia.

Mr. Kim tried the same approach last month, when he was host for a meeting with Prime Minister Junichiro Koizumi of Japan. Faced with Japanese demands for an explanation of the disappearance of 11 of its citizens in the late 1970's, the North Korean leader bluntly reversed a long tradition of angry denial, and apologized for what he acknowledged were official kidnappings.

Initially, the admission seemed to propel North Korean-Japanese relations strongly forward, with widespread expectations of rapidly normalized ties and large-scale aid from Japan. As the sordid details of the kidnappings have sunk in here, though, Mr. Koizumi has been forced by sensitive public opinion to be far more cautious.

North Korea desperately needs better relations with the Japan and the United States because the former has long promised to provide heavy development assistance once relations are normalized, while the latter controls many of the international financial institutions, whose cooperation is indispensable to North Korea's re-entry into the global economy.

Looking at his confessions, Mr. Kim appears to have focused on the issues most important to each of those two nations: the emotive question of the fate of its citizens for Japan, and weapons of mass destruction for the United States.

"North Korea has always wanted to pursue normalization with the United States, and however awkwardly, now they are bargaining," said Selig S. Harrison, director of the National Security Program at the Center for International Policy in Washington. "What they are saying is that they are prepared to negotiate an end to all nuclear activity and allow inspections, if we agree to two things: not to threaten them militarily and to pursue normalized relations."

Mr. Harrison, who is the author of "Korean Endgame: A Strategy for Reunification and U.S. Disengagement," said Pyongyang's position was spelled out to him this week by the country's representative to the United Nations.

Whether or not North Korea seeks to negotiate with Washington along these lines, its acknowledgment of a nuclear weapons program has inflicted faster and far graver setbacks than the missing persons issue with Japan.

"This is not a crisis yet, but it may be the last stage before a crisis," Mr. Cha said. "This administration is not going to pay to go inspect another hole in the ground, and whatever happens, it is not going to be framed as an exchange, where everyone gives up something to obtain Pyongyang's cooperation."

<http://www.nytimes.com/2002/10/21/international/asia/21STRA.html>

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Christian Science Monitor

October 21, 2002

Pg. 1

For Army, A New Primer In Chemical War

In high-tech gear, soldiers prep for weapons that could be merely irksome – or incapacitating.

By Ann Scott Tyson, Special Correspondent of The Christian Science Monitor

HINESVILLE, GEORGIA - Staff Sgt. Edgar Rodriguez barks out orders, and dozens of infantrymen hastily pull on gas masks attached to olive-green hoods.

"You will be asked to hold your breath, break the seal, and then clear the mask," Sergeant Rodriguez instructs. "If you get a whiff of CS [tear gas] when you do that – it could be nerve gas in a combat situation – understood?"

"Hoo-ah!" reply the troops as they march single file toward the "chamber" – a cement-floored cabin filled with tear gas.

Here in the sprawling backwoods of Fort Stewart, Georgia, the Army's 3rd Infantry Division is preparing for a possible war against Iraq – including what the Pentagon considers a very real risk of Iraqi chemical or weapons attacks. For the division's heavy infantry troops, some 2,000 of whom are deploying to Kuwait in coming weeks, war-fighting drills have taken on a complex new dimension that could spell the difference between fighting through deadly agents and being stopped in their tracks.

From narrowed vision, heat exhaustion, and mental stress for troops, to the massive logistics of decontamination, to the potential for panic among civilians, US commanders admit that lethal toxins would seriously impact the prosecution of a war.

"Does it [better US protection] mean that this is still not going to be a horrific event, that we're going to have to fight our way through?" asks Gen. Richard Myers, chairman of the Joint Chiefs of Staff. "Is it going to slow us down? Probably. Will it cause us maybe to change our plans in a localized area? It could possibly."

Despite advances in US military protective gear, sensors, and decontamination equipment since the 1991 Gulf War, senior defense and military officials say the threat of Saddam Hussein's weapons of mass destruction (WMD) programs has also grown: The Iraqi regime is developing more potent chemical and biological agents, they say, as well as pilotless aircraft, sprayers, artillery shells, and longer-range missiles with which to deliver them.

As a result, US commanders say they are planning for a worst-case scenario, in which a WMD attack would, at minimum, slow ground troops, and could paralyze an entire base or contingent.

At Fort Stewart, troops trained by Nuclear-Biological-Chemical (NBC) experts such as Rodriguez must pass tests aimed at ensuring they can protect themselves – and carry out their missions – amid lethal agents. Training can be an ordeal. Minutes after Rodriguez orders troops into the gas-filled chamber, the door bursts open and the young men dash out, whooping and spitting. "Wooooooh! It's strong!" yells Pfc. Anthony Young, his eyes watering and nose running.

In fact, the gas masks worked. The soldiers found out just how effective the masks were by taking them off – part of a dare to see how long they could stand the tear gas. "It's a confidence booster," says Second Lieutenant William Muraski, a battalion-level chemical weapons expert.

US forces in Iraq or nearby are most likely to face two types of WMD threats from Mr. Hussein's regime, with some weapons deployable within 45 minutes of an order to use them, according to military officials and Western intelligence estimates.

Biological weapons, which take days or weeks to act, would target concentrations of troops in fixed positions such as bases and ports, officials say. Iraq's known biological agents include anthrax, botulism toxin, and possibly smallpox. US sensors can detect biological agents about 15 to 45 minutes after exposure, soon enough to give doctors time to treat troops. In addition, the Pentagon resumed anthrax vaccinations in September and is considering a plan to begin smallpox inoculations next month for troops most likely to be exposed.

In contrast, chemical weapons, which can kill within minutes, would likely be used in an effort to stop advancing US troops. Iraq's stockpiles include chemicals such as the potent nerve gasses VX, sarin, and cyclosarin, as well as blister agents such as mustard gas. US forces have an armored scout vehicle that can detect 18 chemical agents at once from a distance of three miles; working in seconds, it gives ample warning for troops to don protective gear. Troops also carry an M-22 Acada alarm system that detects chemicals at a 300-yard perimeter, and smaller portable detection kits.

In Fort Stewart's mechanized infantry, soldiers focus on responding to chemical strikes, largely because of tactical implications. Once a chemical attack is discovered, troops immediately go to the highest stage of protection, known as MOPP (Mission Oriented Protective Posture) 4, putting on masks, gloves, overboots, and suits filled with activated charcoal. Tanks and other armored vehicles such as Bradleys are sealed up with hatches closed, forcing drivers to use periscopes. Night vision goggles can be worn over the gear.

The protections, while effective for 24 hours at a time, are cumbersome, stressful, and slow operations, soldiers and commanders say. "It's almost like putting on blinders," says Maj. Frank McLary, an operations officer. "You really have to rely on your wing man [in an armored vehicle formation] to tell you what is happening when you are buttoned up and wearing a ... mask."

Masks contain built-in microphones, but they muffle voices. The newest chemical suits, while longer-lasting and lighter than the older battledress overgarments, are still heavy (5.6 pounds), hot, and uncomfortable. "The first time out, you'll have heat casualties if you're fighting in summer," says Major McLary.

While wearing full MOPP gear in a contaminated area, basic tasks grow complex. Manuals list 17 steps for drinking water through fitted straws. Using the latrine takes 23 steps.

After exposure, decontamination procedures keep troops and vehicles out of the battle for at least several hours, experts say.

To prevent such attacks, US commanders say they would attempt to strike Iraqi WMD capabilities early in a conflict. Failing that, they warn that any Iraqi officers following orders to deploy chemical or biological weapons will face prosecution.

Soldiers such as Rodriguez are issuing a warning of their own. "Our goal is to continue the mission," he says. "If they expect us to stop, they're wrong."

<http://www.csmonitor.com/2002/1021/p01s03-usmi.html>

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Washington Post
October 21, 2002
Pg. 25

Inspections Are The Key

By Mohamed El Baradei

As the chief nuclear inspector for ensuring Iraq's disarmament, I believe it is critical at this defining moment to make clear the purpose and value of weapons inspections in Iraq. Inspections by an impartial, credible third party

have been a cornerstone of international nuclear arms control agreements for decades. Where the intent exists to develop a clandestine nuclear weapons program, inspections serve effectively as a means of both detection and deterrence.

From 1991 through 1998, the International Atomic Energy Agency, empowered by the U.N. Security Council with broad rights of inspection, succeeded in thwarting Iraq's efforts to develop nuclear weapons -- the most lethal weapons of mass destruction. As President Bush stated in Cincinnati on Oct. 7: "Before being barred from Iraq in 1998, the International Atomic Energy Agency dismantled extensive nuclear weapons-related facilities."

We neutralized Iraq's nuclear program. We confiscated its weapon-usable material. We destroyed, removed or rendered harmless all its facilities and equipment relevant to nuclear weapons production. And while we did not claim absolute certainty, we were confident that we had not missed any significant component of Iraq's nuclear program.

The problem arose in 1998, when all inspections were brought to a halt, with a military strike imminent. While satellite monitoring and analytical work have continued since then, no remote analysis can replace inspections, nor can it enable us to reach conclusions about what has occurred in relation to nuclear weapons development in Iraq in the intervening four years. The best way to establish the facts is through the return of inspectors to Iraq.

After four years, the door to inspections has finally reopened, and we should be taking advantage of that opportunity. The success of inspections in Iraq -- in eliminating not only nuclear weapons, but also biological and chemical ones -- will depend on five interrelated prerequisites:

1. Full and explicit authority for inspection, which means immediate and unfettered access to any location in Iraq -- including presidential sites -- and practical working arrangements for communication, transportation and other logistics to ensure that inspectors can operate safely and effectively.
2. Ready access to all sources of information, including the freedom to interview relevant Iraqi personnel without intimidation or threat of retribution to those individuals, and access to information from other states as well as information gained through aerial monitoring and other inspection activity.
3. Unified and robust support from the U.N. Security Council, with the affirmed resolve to deal promptly and energetically with any noncompliance or lack of cooperation on the part of Iraq. This is the best deterrence to ensure Iraq's compliance.
4. Preservation of integrity and objectivity in the inspection process. There must be a fair and impartial inspection regime, free of outside interference, to ensure that our conclusions are accepted as credible by all parties.
5. Active cooperation by Iraq, including a sustained demonstration by the government of its stated willingness to be transparent and to allow inspectors full access to carry out their mission. This effort could be further facilitated (and the inspection process shortened) if Iraq were to take the initiative -- not only with passive compliance, but also with active cooperation -- by, for example, coming forward with a full and "final" declaration of its weapons-related equipment and activities.

Concurrent with the inspections in Iraq, strong action should be taken worldwide to ensure the physical protection of nuclear material, with effective control of weapons-relevant exports and vigilant border monitoring to detect any attempts at illicit smuggling.

Regardless of how events unfold in the near future, inspections will be the key, over the long haul, to ensuring that clandestine efforts to develop nuclear weapons in Iraq or elsewhere are detected and thwarted.

I would make a twofold appeal: to the government of Iraq, to provide the absolute cooperation that the world is demanding; and to the international community, to give inspections a chance before resorting to other alternatives.

The writer is director general of the International Atomic Energy Agency.

<http://www.washingtonpost.com/wp-dyn/articles/A57558-2002Oct21.html>

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Honolulu Advertiser

October 18, 2002

Story Of Atoll's Radioactive Past About To Be Closed

By Jan TenBruggencate, Advertiser Science Writer

Defense Department crews have buried radioactive material within an existing excavation on Johnston Island and are awaiting radiation tests before sealing the landfill.

They hope the action will mark the final chapter in the military's toxic relationship with one of the world's most isolated atolls, located 717 nautical miles southwest of Honolulu. The Army is closing the Johnston Atoll Chemical

Agent Disposal System now that the nerve gas and blistering agent munitions once stored on the island have been destroyed.

It has been four decades since a series of nuclear rocket failures drenched the island in radioactive contaminants. Ironically, Johnston has been a national wildlife refuge since 1926. It is a nesting ground for threatened green sea turtles and more than a dozen species of sea birds and migratory birds, and its waters are home to 300 species of fish.

The Navy took over the atoll in 1934, and the Air Force subsequently assumed control in 1948. The site was used for high-altitude nuclear tests in the 1950s and 1960s before it was maintained as a storage and disposal site for chemical weapons until 2000.

On June 20, 1962, Starfish, a Thor missile with a nuclear warhead, was blown up directly over Johnston when it failed one minute after launch. Metal parts and debris fell back onto the island. A month later, on July 25, a launch dubbed Bluegill Prime was destroyed on the launch pad, scattering radioactive material.

Neither explosion was a nuclear detonation, but the radioactive material in the warheads was widely distributed. Divers picked up the debris they found on the lagoon floor and the contaminated runway was torn up and piled near the launch site. Some material was hauled down a ramp made of contaminated coral, loaded into landing craft, and taken out to the channel to be dumped in the deep ocean. Special equipment was used to identify and collect particularly "hot" particles and separate them for special treatment.

After a series of studies and public hearings in Hawai'i earlier this year, the Defense Threat Reduction Agency concluded that the best alternative was simply to bury the most radioactive material and cover it with coral debris of relatively low radioactivity. That work started this summer and is nearly complete.

"The contaminated metal and concrete debris, and coral that did not meet the cleanup standard, were buried in the Radiological Control Area under a cap of clean coral soil that is a minimum of 2 feet thick," said Cindy McGovern, public affairs specialist for the Defense Threat Reduction Agency, which is overseeing the cleanup.

She said the agency is now conducting a radiological survey to be sure the site meets requirements set by the Environmental Protection Agency.

An estimated 45,000 cubic meters of now-buried coral has an average radioactivity of 200 picocuries per gram. Under EPA rules, material with that level of contamination must be sealed from exposure to the environment. The 240 tons of radioactive metal and 200 cubic meters of concrete debris has not been tested, but they are assumed to be contaminated.

All that material was covered with a 2-foot-thick cap of coral that has a far lower level of radioactivity — an average of 7.7 picocuries per gram. That level does not require special treatment under EPA rules.

The EPA set the Johnston Atoll cleanup standard at a radioactivity level of 13.5 picocuries per gram. At that level, the radiation risk for people on the island for one year is slightly less than the radiation dose an airline passenger receives flying coast to coast, federal officials said. Some types of home smoke detectors contain materials with levels of radioactivity several times higher.

The anticipated human exposure from the rocket explosion debris on Johnston is considered to be a fraction of the "average annual radiation dose to the U.S. public from all sources (natural and man-made)," according to a fact sheet on the project prepared by the Defense Threat Reduction Agency.

The contaminated landfill will be compacted and its surface shaped to shed rainwater, although tests suggest radioactive materials are not soluble in Johnston's coral soils, and are not leaching into the waters at the atoll.

Once the project is complete, the Defense Threat Reduction Agency intends to regularly monitor the landfill site for five years.

"If any radiological contamination is found after landfill monitoring is completed, the contamination will be evaluated by the DTRA health physics staff and appropriate action taken," McGovern said.

"We are confident that the EPA-recommended cleanup standard will have been met atoll-wide," she said.

The Maui-based Earth Foundation said yesterday it continues to be skeptical of the safety of the landfill method, and feels the radioactive material should be removed from the atoll and hauled to an approved nuclear waste storage site like the one at Yucca Mountain, Nev.

"The problem is plutonium has a half life of 24,000 years and is life-threatening for that entire time. There are places on the mainland that are better-equipped to contain radioactive nuclear waste than an atoll vulnerable to hurricanes and erosion from the ocean," said a statement from the group.

One issue brought up during public hearings in March is the level of threat from erosion due to hurricanes or tsunamis.

The Defense Threat Reduction Agency's corrective measures study, published in June, assumes that the seawall surrounding Johnston eventually will fail, and calculated the threat to the environment if the radioactive landfill is washed into the lagoon.

It concluded that the amount of radioactivity added to the material already in the ocean would increase the radioactivity threat by only about 1 percent — a level it decided was so low that it does not justify the expense of maintaining the seawall.

Biological studies prepared by the military for Johnston suggest the threat from radioactivity to wildlife is very low. The Hawaiian monk seal, which occasionally visits the atoll, would potentially accumulate the most radioactivity, by eating fish that feed around the most radioactive sediments in the lagoon.

Even if a seal fed year-round only on bottom-feeding fish from the most contaminated area of the lagoon, it would reach just 10 percent of the radiation exposure limit set by the International Atomic Energy Commission, said the corrective measures study.

<http://the.honoluluadvertiser.com/article/2002/Oct/18/In/In07a.html>

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Atlanta Journal and Constitution

October 18, 2002

Report Chides U.S. On Anthrax Preparations

By George Edmonson, Staff

Washington --- The United States has not done enough to prepare for another anthrax attack since the first assault occurred a year ago, according to a report released Thursday.

"Anthrax is an immediate threat, both overseas and at home," said retired Marine Corps Gen. Randall West, who served as special adviser for chemical and biological protection to the deputy secretary of defense.

The report was commissioned by BioPort Corp., the sole licensed maker of an anthrax vaccine, and compiled by a panel of four doctors and two retired military officers.

"While there exists a clear strategy for protecting at-risk military personnel, there is no such strategy to protect civilian population against another anthrax attack," said Robert Kramer, president and chief operating officer of BioPort of Lansing, Mich. Kramer and several panel members released the report at a Washington news conference. Dr. Gilbert Ross, who serves as executive director and medical director of the American Council on Science and Health, said the emphasis has been on smallpox rather than anthrax. But some countries are known to possess anthrax, and it is easy to develop, he said.

New anthrax strains also are being developed that are resistant to antibiotics, he said, adding that "From a public health perspective, this is terrifying news."

One difficulty is a lack of initiative in the public health system for planning for another anthrax attack, Ross said.

"Nobody wants to take the responsibility," he said. "There is no discussion in the public forum about anthrax and anthrax bioterrorism preparedness. . . . We should have more discussion about this."

The anthrax attacks began a few weeks after terrorists struck the World Trade Center and the Pentagon last year.

Several people died, more than a dozen became ill and some buildings were shut down. No one has been arrested in the case.

Some of the steps called for in the report are to:

- * Determine who is at greatest risk in an attack, such as emergency crews, law enforcement officers, firefighters, medical personnel and postal workers. West called it the single most important step.
- * Increase capacity to make and stockpile the vaccine.
- * Step up research and preparation for new antibiotic-resistant anthrax.
- * Urge the Centers for Disease Control and Prevention in Atlanta to "place a top priority on completing its study" of whether the current vaccine can be effective with fewer than the six doses now required. If a cut in dosage is possible, the number of people who could be protected with currently available stocks could rise dramatically, Kramer said.

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Wall Street Journal

October 21, 2002

Pg.1

Ugly Side Effects Of Vaccine For Smallpox Color Planning

Bioterror Plans Must Weigh Vaccine's Dangers; White House Weighs Fund to Compensate Victims

By Marilyn Chase and Greg Hitt, Staff Reporters of The Wall Street Journal

Gasps erupted from an audience of microbiologists as one of the government's top smallpox experts displayed slides of children covered with disfiguring pockmarks at a meeting in San Diego last month.

The topic of his talk was bioterror, but the unsettling show-and-tell wasn't focused on the threat of smallpox: it addressed the serious risks of the vaccine meant to prevent it. "These are things the American public needs to understand," said the speaker, Anthony S. Fauci, director of the National Institute of Allergy and Infectious Diseases.

Life-Threatening Reactions

As President Bush struggles to figure out just who should get the smallpox vaccine -- a possibly vital tool in the war on bioterror -- he faces an excruciating dilemma because the vaccine itself is dangerous. It causes life-threatening reactions in 15 of every million people vaccinated, killing one or two of them. As many as 50 million Americans, including babies, pregnant women, people with the common skin rash eczema, as well as those with weakened immune systems, may be vulnerable to the vaccine's risks.

"There is no vaccine with comparable risks," says Paul Offit, chief of the infectious-diseases section of the Children's Hospital of Philadelphia. He is also a member of an advisory committee to the Centers for Disease Control and Prevention, which has posted decades-old photos on its Web site of babies and children with inflamed skin lesions (<http://phil.cdc.gov/Phil/search.asp>). "I would never give that vaccine to my children because right now there is no disease out there," he says.

Last year's anthrax attacks exposed weaknesses in U.S. defenses against bioterrorism attacks and raised alarms that smallpox -- the once-deadly disease believed to have been eradicated world-wide since 1980 -- could be used as a weapon. U.S. officials fear that Iraq, which has attempted to stockpile chemical and biological arms, may have obtained samples of the highly contagious virus. With the possibility of military conflict looming, they worry that Iraqi leader Saddam Hussein might use smallpox against U.S. troops or even against civilians on U.S. soil.

One possibility now under discussion at the White House is an extraordinary proposal to compensate victims injured by the vaccine. "The president on down -- everybody -- recognizes in this life-and-death decision that the president has to make, there will be some families that endure losses and others that endure permanent injury," said Tom Ridge, the White House's homeland security director, in a recent interview. "There has to be some way to compensate them."

Liability Concerns

Details are still very much up in the air, but the proposed payments are a feature of a larger plan to address liability concerns arising from a vaccination initiative. The goal would be to provide protections against lawsuits for health-care workers enlisted to carry out a federally sponsored inoculation program.

The program favored by federal health officials would offer smallpox vaccination to about 500,000 hospital workers viewed as being the most likely to come into contact with victims of a domestic bioterrorism attack. After that, firefighters, police and paramedics -- so-called first responders -- would be offered the vaccine, bringing the total of those inoculated to about 10.5 million people. Availability to the general public would follow sometime in 2004.

The vaccinations would be voluntary, federal officials say, and accompanied by a public education campaign. Smallpox is an ancient scourge that killed hundreds of millions of people throughout its recorded 3,000-year history. Its earliest known victim was Pharaoh Ramses V in 1157 BC. The disease begins with fever, aches and nausea, and later develops into a rash that forms blisters. The virus kills through overwhelming toxemia, or blood poisoning, and plunging blood pressure. There is no known cure. The U.S. stopped vaccinating the public in 1972, leaving people under 30 years old vulnerable and vaccinated older Americans with waning immunity.

Still, many doctors shudder at the possibility of harm to their patients should Mr. Bush give the go-ahead for a vaccination plan. "When one-half million medical first-responders get vaccinated, there's a chance someone will die," says Kaiser's vaccine center co-director Steven Black. "That's going to sober people's enthusiasm."

Brutal Mishap

Dr. Black can't shake the memory of a brutal vaccination mishap he witnessed during his medical training at the University of California at San Francisco in 1975, when doctors were experimenting with the vaccination for ailments other than smallpox. A Bay Area man had received the vaccine in an attempt to control his herpes. Unbeknownst to the researchers, he also had leukemia, which compromised his immune system. "It was horrible," Dr. Black recalls. "Ten days later he was dead."

Little about the smallpox vaccine has changed since it was developed in the 18th century. It contains a live pox virus called vaccinia, which is harvested from infected calf skin. The vaccine is particularly dangerous because unlike most live vaccines, it uses virus that hasn't been weakened. In most people, vaccinia causes a mild infection that triggers lasting immunity. But in some people, the virus runs amok, and several hundred people would be expected to die if a mass vaccination took place. Even people with minor reactions to the vaccine can spread the vaccinia virus to others. Such risks were deemed acceptable when smallpox was active and killing 30% of those it infected. But today, the risks might not be so universally accepted, and some of the vaccine's casualties and their families likely would file lawsuits. Mr. Ridge, bemoaning "this litigious world in which we live," said "well meaning" professionals shouldn't face liability for administering "a vaccine that the entire world knows will have, can have, some complications." He said the administration could structure the compensation payments and liability protections using Mr. Bush's authority under, for example, the Federal Tort Claims Act.

Meanwhile, on Capitol Hill, lawmakers have begun to anticipate the need for legislation to solve the liability problem. Congress could set up a compensation fund similar to the one created in 1986 for those injured by mandatory childhood immunizations. Another option would be for smallpox personal-injury lawsuits to be brought only in federal court, before a judge and not a jury. Also, punitive damages could be limited in such cases.

The liability question was one topic discussed at a Sept. 3 meeting in the Oval Office, attended by Mr. Bush, Mr. Ridge, Health and Human Services Secretary Tommy Thompson and Vice President Dick Cheney. It was the second meeting at which officials briefed Mr. Bush on a broad range of smallpox vaccine questions, including availability of the vaccine and the size of the population to be inoculated.

More than a month later, Mr. Bush's advisers still are struggling with the decision and gathering information for the president. Some officials describe a near-constant back-and-forth between the White House and the government's health and security experts.

Mr. Cheney supports immunization of all U.S. troops headed to the Middle East. He has kept private his advice to the president on possible home-front efforts but has pushed analysts for "worst-case scenarios," in an effort to weigh the pros and cons of widespread vaccination.

Accelerating the urgency of the public-health debate is the imminent availability of enough vaccine to more than cover the entire U.S. population of about 280 million people. One year ago, only 15 million doses of Wyeth's Dryvax were on hand. Now, tests show that it's possible to dilute those doses fivefold. Dr. Fauci predicts success in stretching to over 300 million doses a batch of 75 million doses found in a freezer at Aventis Pasteur of Swiftwater, Pa., the vaccine unit of Aventis SA of Strasbourg, France. Augmenting those doses, made by the calf-extraction method, federal contractors Acambis PLC of London and Baxter International Inc. are readying more than 200 million doses made by cell-culture methods.

Other companies are trying to develop more benign vaccines using milder strains of the virus, modified vaccinia Ankara (MVA) and Lister clone 16m8, but they are years away. "Two shots [of MVA] might offer protection with none of the side effects," says Dr. Offit of Philadelphia. "That would be the best of both worlds. The question is, can you wait?"

Volunteers Weigh Risks

Currently, only volunteers in clinical trials face the disturbing calculus of risks versus benefits of the vaccine. Under those tightly controlled conditions, doctors are going to extraordinary lengths to avoid the vaccine's side effects and make sure patients know what they're getting into. Of 1,400 volunteers screened at a recent trial conducted by Kaiser Permanente Vaccine Study Center in Oakland, Calif., all but 47 dropped out because of disqualifying medical conditions or concerns after they learned about the vaccine's risks. Only minor side effects have been seen so far. As part of a new Kaiser trial, Theodore Stroll, a 46-year-old staff attorney for the California Supreme Court, underwent a 40-minute telephone briefing, which probably wouldn't be possible under emergency conditions in the event of a bioterrorism attack. A nurse explained the risks of the experiment, which is testing three different strengths of Dryvax vaccine as part of a study sponsored by the National Institutes of Health.

Along with routine blood work and a physical exam, Mr. Stroll was tested for the HIV virus and Hepatitis B and C. He read and signed a 10-page document, in which everything that could go wrong was spelled out. He verified he doesn't live with anyone who is pregnant, has eczema, suffers from impaired immunity, or is under one year old. Last Wednesday, Mr. Stroll was inoculated, after more tests and counseling. Inserting the needle into a vial of vaccinia virus, nurse Joy Fournier gently spread a droplet of vaccine on his upper arm, adjacent to an old smallpox vaccine scar. Then she punctured a dime-sized area of the skin with about 15 needle pricks. She sealed the site with a special dressing to keep the virus from spreading to other people and presented Mr. Stroll with a diary so he could record common symptoms such as fever, nausea, aches or fatigue. She also told him not to take a bath or swim until the scab fell off in several weeks.

Mr. Stroll had been vaccinated for smallpox three times in childhood with no problems. "I'm convinced we face a threat of biowarfare," he said, adding it's better to be vaccinated now "than in a [subway] station under emergency conditions."

Scared by last year's anthrax attack, many people are demanding the vaccine at clinical trial sites, putting pressure on officials to make it available. Greg Poland, director of the Mayo Clinic Vaccine Research Group in Rochester, Minn., says that his continuing trial can enroll only 120 people, but "our lab gets a call every two minutes." He says he has moved vaccine stocks offsite because of security concerns.

"My lab is the only one locked and secured at this institution because people want this vaccine," he says. "We've had people hack into our computer to find out where to get it." Dr. Poland also worries volunteers may lie to get the vaccine.

How far to go in explaining the risks to people who want the vaccination has sparked considerable debate among medical professionals. Dr. Poland says he considered showing pictures of people with bad reactions to trial volunteers. "My initial feeling was, let's show them," he says. But he bowed to a co-worker's protest that the pictures were too emotionally charged. Instead, he says he'll direct volunteers to CDC's Web site.

But graphics can also hamper decision-making, says Robert Belshe, a vaccine researcher at Saint Louis University Medical School in St. Louis, Mo. "The key element of informed consent is providing a fair and balanced picture of risks and benefits," he says. If you show an emotionally charged photo of a baby with disfiguring pock marks "you're introducing a bias that may not be fair. One just as easily could go the other way, and show stacks of bodies of people who died because they didn't get vaccinated."

One problem facing doctors is how to manage the millions of Americans with a history of eczema if vaccines are made available before an actual smallpox outbreak. According to trial guidelines, the common rash is a bar to receiving the vaccine, which can fuel a flare of eczema vaccinatum, an oozing swath of viral lesions. "It itches like mad. You scratch the lesion. You touch yourself, or somebody else," says Dr. Poland.

Allergists estimate up to 20% of the population has suffered from eczema. "Part of the problem is that historically eczema was a 'wastebasket diagnosis' -- lots of kids got labeled that don't fit the diagnosis," says Dr. Poland. "But what do I do when I see in someone's chart that an urgent care doctor once made that diagnosis in the 1970s?"

For now, the nearly one million Americans with HIV/AIDS are barred from smallpox vaccination as well because their immune systems are compromised. Many Americans with HIV don't know they are infected. This makes wider HIV testing particularly important, according to vaccine experts.

Of course, in the case of an actual bioterror attack, all bets are off. In a briefing last week, Walt Orenstein, director of CDC's national immunization program said that in the event of a smallpox outbreak or bioterror attack, people with eczema or HIV who had been in contact with a smallpox patient likely would be vaccinated.

Health officials also have laid plans for a rapid response to any direct attack. They've prepared a strategy, relying on states for distribution, to inoculate every American within five to seven days of an outbreak.

-- Sarah Lueck contributed to this article.

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Jane's Defence Weekly
October 23, 2002

High-Altitude Nuclear Explosions: Blind, Deaf And Dumb

A new threat based on Cold War nuclear knowledge has US defence analysts concerned. If a high-altitude nuclear explosion were launched by a rogue state, most satellites in low earth orbit would cease to function within weeks. Ian Steer weighs up this asymmetric threat

If stable states and rational dictators can be deterred from using nuclear weapons, as current wisdom has it, then the main nuclear threats are from terrorists with suitcase bombs and lunatic autocrats with missiles. This is based on a limited idea of what one can do with a small nuclear weapon.

However, blowing up targets on the Earth's surface is only part of the story. According to Dr Dennis Papadopoulos, from the Department of Physics, University of Maryland: "If someone were to explode a 10kT nuclear weapon at a high enough altitude over their own territory, 90% of the world's low earth orbit [LEO] satellites would be lost within a month."

In addition to the electromagnetic pulse (EMP) phenomenon, generally understood, satellites are vulnerable to the 'Christofilos Effect'.

When a high-altitude nuclear explosion (HANE) is detonated at about 100km altitude, the Earth's magnetic field accelerates the large cloud of electrons and protons released by the blast. The radiation particles speed up, spread out, all the while accelerating, circling the globe until racing around it at speeds approaching the speed of light. This effect is named after Dr Nicholas Christofilos, who predicted this phenomenon.

The detonation "produces an artificial radiation belt that, within weeks to at most months, delivers a 'lethal' dose of radiation to [LEO] satellites," said Dr Papadopoulos, who worked with Dr Christofilos at what is now the Lawrence Livermore National Laboratory.

The superpowers conducted six scheduled nuclear explosions in space during the Cuban Missile Crisis. These HANEs damaged or destroyed all seven satellites then in orbit. These tests, conducted before the 1963 Atmospheric Test Ban Treaty, provided the only experimental data on the vulnerability of satellites to nuclear detonation.

Today, the implications of a HANE are far greater, as millions use the 250-plus satellites in LEO. "As for the military satellites, it is likely they have been hardened well enough to survive the duration of any war," said John Pike, president of the GlobalSecurity Organisation, a beltway-based think-tank with an anti-proliferation agenda. "But it's certainly too great a risk to ignore because of the increasing reliance of the military on civilian systems, which are not hardened."

"We don't see it as a high-probability threat, but the effect would be so devastating we have to take it seriously and be prepared to act," said Dr Papadopoulos.

Armed forces have long relied largely on civilian satellites to relay military communications, navigation, weather forecasting and imaging information. Satellite telephone systems, for example, are essential for peacekeepers who operate regularly in remote areas or in locations where infrastructure has been damaged or destroyed. The US military has also relied on National Aeronautics and Space Administration (NASA) civilian satellites to help plan for its continuing operations in Afghanistan and present and possibly future operations in Iraq.

The International Atomic Energy Agency (IAEA) also uses civilian imaging satellites to monitor states' compliance with the Non-Proliferation Treaty (NPT).

By using a HANE, a country does not need an intercontinental ballistic missile (ICBM) to launch a strategic attack on a distant country, nor does it need to invite annihilation by targeting population centres. A HANE would damage and/ or destroy a country's national investment in space.

According to the US Department of Defense (DoD) Threat Reduction Agency's (DTRA's) HALEOS (HANEs against Low Earth Orbit Satellites) study published in 2001, it would cost more than \$100 billion to replace civilian satellites operating in LEO. This includes around \$30 billion for the International Space Station, \$10 billion for the Hubble Space Telescope and another \$10 billion for space shuttles and other astronomy and research satellites. Every individual and business that relies on basic communications technology would be affected. A more sinister consequence of HANEs is that they amplify the Earth's Van Allen radiation belt to levels that remain high enough to damage satellites for up to two years. So, a HANE would affect many people and systems while they waited for the radiation level to fall to a point when new satellites can be launched.

A HANE would directly affect military operations both in and out of theatre. Traditionally US soldiers fight far from home. But now, if Iraq or North Korea, for example, launched a HANE above their respective countries, it would cause collateral damage on home soil. Although a HANE launched overhead in Iraq or North Korea during operations in the area might not stop the US military in its tracks, it would cause serious damage and confusion. In the case of Iraq, US Central Command's core headquarters is based in Tampa, Florida, USA. Its forward-deployed headquarters is in Qatar. Similarly, the US core headquarters for North Korea is based in the USA. Its forward-deployed headquarters is in South Korea. In both cases, a HANE would make communications via civilian satellite impossible. If a HANE occurred over a military theatre, much would come to a halt. HANEs release a high-altitude electromagnetic pulse (HEMP) which is deadly to electronics within line-of-sight of the blast.

"When the lights went out in Hawaii after one of the 1962 nuclear tests, scientists began to make a connection between nuclear weapons and EMP," said Dr Robert Norris of the US global watch organisation the Natural Resources Defense Council. "Theoretically, one nuclear weapon detonated high over the central USA would fry a vast amount of computers and communications equipment, including all radio and television over a wide area." Any aircraft, civil or military, caught within the line-of-sight of a HANE could lose all electronics. The effect depends on range and if the aircraft is hardened. The US Air Force's E-8C Joint Surveillance and Target Attack Radar System, a key element to the USA's current battlefield reconnaissance architecture would likely fall victim to this. Based on an old Boeing 707 airframe, it is unlikely it is protected against such eventualities. Other tactical communications linkages such as air-to-ground tactical radios would also be affected.

Any nuclear-armed state capable of launching a satellite could detonate a HANE. For a state to launch a HANE it must, however, have both intent as well as capability.

The 2001 HALEOS studies considered various threat scenarios. The primary concern was that HANEs could be launched as a warning shot. A nuclear-armed state facing military defeat could, for example, detonate a HANE in LEO as a demonstration of capability and resolve.

Another scenario involves an accident. A country like North Korea might launch a nuclear-tipped Taepo Dong missile at a ground target like Seoul only to have it intercepted by a US anti-ballistic missile (ABM). It might then, either accidentally or due to salvage fusing, detonate as a HANE at an altitude of between 120km and 150km. Given a plausible scenario, which players have the capability; missiles and fissile material; but no satellites of their own to lose?

North Korea demonstrated its missile prowess two years ago when it launched its Taepo Dong intermediate-range ballistic missile (IRBM) over Japan. Iran and Iraq are developing longer-range, higher-payload IRBMs of which at least some flyable examples likely already exist.

All three states have or have had newer, improved model 'Scud-C' short-range ballistic missiles (SRBMs) with a range of 500km and 500kg payloads. This raises the idea that even SRBMs could be a future threat.

The amount of 90% pure plutonium (Pu239) required to make one 20kT nuclear bomb, known as a "bare" critical mass, is known to be 10kg. The most basic plutonium-based atom bombs, however, surround the plutonium sphere with a beryllium neutron reflector to enhance the nuclear reaction. As a result, they can use less Pu239.

Because the design is so basic and beryllium is so easy to acquire, most defence analysts now use the reflected critical mass figure, 5kg, as the minimum reaction mass in a nuclear device.

The same is true for a uranium device. It takes 52kg of pure U235 to make one 20kT atom bomb. The reflected critical mass surrounded by beryllium is only around a third as much, or 15kg.

"US intelligence agencies now believe North Korea may well have one or two nuclear explosives already," said Matthew Bunn, senior research associate in the Project on Managing the Atom at the Belfer Center for Science and International Affairs at Harvard University's John F Kennedy School of Government.

Corey Hinderstein, assistant director of the Institute for Science and International Security (ISIS), estimates that "North Korea could have between 30kg and 40kg of weapons-grade plutonium". The ISIS estimate credits North Korea with enough plutonium to make six or eight atom bombs. Most of the material is under IAEA safeguards, but one or two atom bombs-worth is not. Following a 1994 agreement with Washington to comply with IAEA and NPT requirements, IAEA inspections in North Korea are to begin in 2004.

Current estimates indicate that Iraq has no fissile materials. But as IAEA inspectors have been expelled since November 1998, it will be some time before the real situation in Iraq can be verified.

Assuming a country has the materials, can it quickly turn them into nuclear weapons? In the past it was generally believed this would be difficult. Now that nuclear proliferation has spread beyond the five main nuclear powers - China, France, Russia, the UK and the USA - the 'know-how' hurdle does not look so high.

The most obvious solution to HANEs is to harden civilian satellites. In fact, this is not an option with current technology. More shielding means more weight.

There are two methods to prevent HANEs: military or political. Israel demonstrated the military option in 1982 by destroying Iraq's Osirak nuclear reactor. The USA employed the same technique in 1991 against other weapons of mass destruction sites in Iraq. The alternative route is to stiffen the NPT. Certain 'research' reactors and nuclear facilities, like uranium enrichment plants, are not subject to IAEA safeguards. "The greatest danger facing the NPT is new technologies not envisioned when the treaty was signed," as Colin Hunt of the Canadian Nuclear Association told Jane's Intelligence Review in 1998. "It is now possible to make certain kinds of weapons proliferation extremely difficult to detect and prevent."

If agreements like the one the USA has with North Korea and Russia with Iran are indicative, the answer may lie in co-operation. It is safer to have such nations producing even more plutonium under IAEA inspection than less plutonium without monitors: it is easier inside than outside a country to keep track of nuclear programmes.

Three weeks ago, Turkish officials allegedly seized 15kg of "weapons-grade uranium". Immediately after the seizure, Bunn said: "Typically, as has been the case in most such seizures in the past, such claims are false, so when the tests on that material are released I'm betting they'll show it wasn't weapons-grade and it probably wasn't that much." In fact, as predicted by Bunn, the contraband was 0.12kg.

With at least 12 IAEA-recognised cases of black-market nuclear weapons materials, could a country simply buy them off the shelf? Estimates of the total amount of weapons-grade plutonium and highly enriched uranium seized during the 1990s amount to less than 15kg; much of it not even weapons-grade. Based on drug interdiction, which catches an estimated 10% of the total traffic, a worst-case upper estimate for the total traffic worldwide in black-market fissile materials (mostly involving enriched uranium) might be around 15kg or enough for one nuclear bomb

per year. "The only solution is to have strict controls, monitoring, compliance and enforcement of the NPT," said Bunn.

Proliferation on the black market of already assembled nuclear weapons, including missing Russian 'suitcase' nuclear bombs, is a threat. Unrecognised is the additional proliferation route open thanks to the more than two dozen fully assembled nuclear weapons lost at sea to date. How long will it be before the civilian ocean robots used to find the Titanic 3km deep are able to recover one or more of these 'lost nukes'?

If a HANE were launched today, there would be no way of dealing with it. Instead of focusing on strategic anti-ICBM defences, like the Strategic Defense Initiative, almost the entire thrust of ballistic missile defence spending is devoted to tactical, anti-IRBM missiles, precisely because these are the most immediate foreseeable threat.

First out of the gate to demonstrate limited IRBM interception capabilities and achieve operational status is the Israel Aircraft Industries' Arrow anti-tactical ballistic missile (ATBM) in 2000. Next may well be the US Navy's (USN's) new improved Standard SM-3 surface-to-air missile/ABM missile interceptor, now in flight-tests. Capable of 8km/s or 29,000km/h, this ABM would fire from vessels that could be stationed near Iraq or North Korea.

Few if any of the other continuing programmes seem this close to 'launching'. There is one that could break out of development quickly. Known as the USAF YAL-1A Airborne Laser aircraft, the platform is a modified Boeing 747-400F which will be armed with a high-energy chemical oxygen iodine laser (COIL), and a sophisticated beam-control system. It will be capable of shooting down IRBMs.

The test aircraft is expected to fly within months, but it is unlikely to fly with the COIL and beam-control systems until early 2004 as they are still under development (Jane's Defence Weekly 5 June).

According to the satellite vulnerability study, it might be possible to reverse the Christofilos Effect. "We discovered that if you can produce kilohertz waves and transmit them into space, they cause the radiation which otherwise would remain aloft for years to precipitate or rain out of orbit much more quickly," said Dr Papadopoulos, referring to research supported by Advanced Power Technology, Inc.

The largest radio transmitters in the world are envisaged to lead the project. The USN operates two extremely low-frequency transmitters in Michigan and about 10 very low-frequency transmitters around the world expressly to allow signals anywhere in the world to any vessel, especially submerged USN submarines. "At first, our studies indicated it would take thousands of such stations to return the radiation belt to normal but we discovered an amplification technique that improves this method by a factor of almost 100. So, with only 10 times the number of existing transmitters it might be possible to get the belt to safe levels in a much shorter time, say in a few months," he said.

According to Dr Richard Garwin of the US Council on Foreign Relations, a HANE attack is deterrable. "We do not believe it is something another country would be likely to do, knowing that if they did, their launch would be detected and that if it hurt US interests they would be subject to our retaliatory nuclear attack."

Deterrence in this case, however, is not so clear-cut. Retaliation against people is not necessarily an appropriate response to losing hardware. While it is plausible to suggest that the USA would use a B-61 tactical nuclear weapon to take out the offending missile launch site, that sort of belated counterforce would be small comfort in a world without pagers or CNN. Of those 10 countries with the capability, China, France, Russia, the UK and the USA are the least likely to launch a HANE because they have the most to lose. In the cases of Iran, Iraq or North Korea, a remote launch site may well be a chess piece that a state is willing to sacrifice.

Additional reporting: Melanie Bright, JDW Features Editor, London

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London Times
October 21, 2002

Living Martyrs' Crippled By Saddam's Mustard Gas

From Michael Theodoulou in Tehran

HAMID DEGHAN had just begun to tell his harrowing story when his tiny frame was racked by a violent coughing fit.

"I heard the explosion. A big circle in the battle area became white. It was like sugar and there was a smell of rotten fish," he gasped after drawing deeply on an inhaler, his eyes still watering.

"It was four hours before we realised we'd come under chemical weapons attack."

Blisters erupted on his skin. "Then we were coughing blood and I collapsed. I felt like I had passed to the other world and was unconscious for three days."

Mr Dehghan was a 20-year-old Iranian soldier on the front line when his unit came under Iraqi mustard gas attack in 1985, a weapon rarely deployed in battle since the First World War. His two best friends died within hours. He still coughs blood and passes it in his urine. His fertility was also impaired.

Mr Dehghan is what Iran calls a "living martyr", one of thousands of Iranian victims of Iraqi chemical weapons attacks from the eight-year Iran-Iraq War. Their plight, with that of the 5,000 Iraqi Kurdish civilians massacred by chemical bombing at Halabja in 1988, is now being invoked by those in Washington and London pressing for military action against President Saddam Hussein's regime.

As President Bush reminded the United Nations General Assembly recently, the Iraqi dictator "attacked Iran in 1980" and he has "gassed many Iranians".

Such belated expressions of concern anger Iran's "living martyrs". They accuse Mr Bush of hypocrisy for using their suffering to help to justify an attack on Iraq.

At the time, international condemnation of Iraq's use of chemical weapons against Iran was muted. Washington had quietly supported Saddam's war effort against Iran, whose Islamic Revolution the United States saw at the time as the greater threat to the stability of the oil-rich Gulf.

American support to Baghdad included the provision of satellite photography to help the Iraqis to understand how Iranian forces were deployed against them.

"If the US or the Europeans wanted to stop Saddam from using chemical weapons, they could have done it at the beginning of the war," Hamid Sohrab-Pour, a pioneer in treating Iranian victims of Iraqi chemical weapons, told The Times. "Bush doesn't have sympathy. He is using Iranian people as a tool."

Tehran estimates that 100,000 Iranian soldiers and civilians were exposed to Iraqi chemical weapons, mostly mustard and nerve gases, during the war with Iraq. Iranian doctors say that between 2,000 and 3,000 of Saddam's victims are still under medical surveillance, with about 1,000 severely injured with chronic lung diseases.

Grim experience has made Dr Sohrab-Pour, a softly spoken professor who studied for several years in the United States, a world expert on chemical weapons victims. He has treated about 10,000 since 1983, he said. He estimates that about 10 per cent of the victims died shortly after chemical exposure. The mortality rate among those exposed to nerve gas, which paralyses the muscles and respiratory system, was much higher than among those who suffered mustard gas attacks, which produces blisters first on the skin and then inside the lungs.

"Nerve gas either kills the patient or, if they are cured, they are cured for good," Dr Sohrab-Pour said. "Mustard gas has long-term effects, most importantly chronic lung disease." Many exposed to mustard gas, the main agent used by Iraq in the war, also suffer from impotence, infertility, badly impaired sight and devastating psychological problems. Parvin Karimi-Vahed, an Iranian Kurdish mother of two, looks ten years older than her 36 years. In the summer of 1987, married just a month, she was visiting relations 15km (nine miles) from the Iraqi border when an Iraqi aircraft dropped a bomb on the house as she was taking a bath. It shot through the building, but miraculously missed everyone inside. "We were even laughing with relief," she said.

Then came the smell of garlic and with it the terrifying realisation that they were engulfed by mustard gas. She was blind and unconscious by the time she reached hospital two hours later. It was three months before she regained her sight, which is still badly impaired, a further three months before she left hospital. Within 17 days, 11 members of her family, including her mother, sister and two brothers, were dead.

"Seventy per cent of my lungs are ruined. Eighty-five per cent of my skin was burnt," she said. She still spends eight months a year in hospital.

She regards Washington's expressions of concern now as no more than crocodile tears. "Bush is insincere. If he really thought about us, he could have helped us before."

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Nuclear Program Not Negotiable, U.S. Told N. Korea

By Doug Struck, Washington Post Foreign Service

SEOUL, Oct. 19 -- North Korea proposed earlier this month to begin negotiations on ending its nuclear weapons program, but the United States rejected the overture, demanding instead a complete dismantling of the effort, the top State Department official who met with the North Koreans disclosed today.

James A. Kelly, the envoy who confronted North Korea this month with evidence that it had a clandestine uranium-enrichment program, said the United States told the North Koreans that there must be a total and "visible dismantling," and that to negotiate without that happening first "in my view, got it upside down."

Kelly, an assistant secretary of state, spoke about the contacts with the North Koreans at a news conference here today. He and John R. Bolton, undersecretary of state for arms control and international security, are traveling to capitals in Asia and Europe this weekend, trying to organize a unified diplomatic front to pressure North Korea into giving up its program to produce fissionable material for a nuclear weapon.

Kelly said North Korean officials acknowledged in meetings Oct. 3 to 5 that they had a hidden uranium-enrichment effort in violation of a 1994 pact with the United States in which North Korea promised to end its nuclear program. North Korea has not yet commented on its disclosure, made public this week by Bush administration officials.

Kelly said that after admitting to the program, North Korea's first vice foreign minister, Kang Sok Ju, suggested that Pyongyang might be willing to give it up. Kelly confirmed, in general, reports that Kang wanted a guarantee that the United States would not attack the country, would sign a peace treaty with it and would accept its government.

"They did suggest after this harsh and -- personally, to me -- surprising admission, suggest that there were measures that might be taken that were generally along those lines," Kelly said in response to a question. But he said he rejected the offer.

Kelly also confirmed that he had begun the meeting with North Korean officials in Pyongyang by telling them there would be no negotiations on improved U.S. ties because of the evidence of the uranium-enrichment program.

"This is not a replay of 1993 and 1994," he said, referring to the agreement made with the Clinton administration that Pyongyang has now admitted violating. "When I went to North Korea, I wanted them to understand just how important we believe this violation of the past agreements is."

The Bush administration has taken pains to assert that Iraq and North Korea differ in their nuclear potentials. Iraq is suspected of trying to revive a nuclear weapons program but has barred U.N. inspectors. North Korea has now admitted that it has a program to build the key nuclear elements for a weapon, although its progress has not been determined. While continuing to threaten the use of force against Iraq, the administration is aggressively seeking to marshal a diplomatic offensive against North Korea.

Although the administration has dismissed the military option -- any war could bring an immediate rain of North Korean missiles on Seoul, a city of 10 million -- Kelly repeated that Bush has "not yet decided" what leverage might be used.

The most drastic nonmilitary measures might be aimed at aggravating North Korea's most critical shortages: those of energy and food. The Bush administration could stop the supply of 500,000 gallons of heavy fuel oil that the United States has been providing North Korea each year since North Korea abandoned its Soviet-era nuclear power plants under the 1994 agreement. Or the United States could cut the food aid that provides North Korea with more than half its World Food Program assistance.

The United States has long said that its humanitarian aid is independent of political considerations.

Similarly, stopping the fuel oil deliveries could plunge the impoverished country into an even worse economic crisis. Already, factories are stilled and even hospitals are unheated for lack of electricity.

At the news conference today, Kelly declined to say that the United States believes the 1994 agreement, under which the fuel oil is shipped, is dead. Some in the Bush administration have long wanted to break the agreement, under which two light-water reactors are being built by a U.S.-led consortium to provide North Korea with power.

"We haven't made any decisions," he said. Kelly has said that North Korean officials told him they "considered the [1994] Agreed Framework to be nullified." But South Korea and Japan are quietly urging the United States not to accept that conclusion, and to try to build a new agreement from it.

Kelly also insisted that the United States was not pressuring Japan and South Korea to give up their dialogue with North Korea, which recently has resulted in improved relations. A South Korean minister, Jeong Se Hyun, flew to Pyongyang today for three days of scheduled talks, and Japan is set to begin formal negotiations Oct. 29 over normalizing ties with Pyongyang.

"These are all existing programs we are happy to support," Kelly said. "At the same time, a covert nuclear weapons program is something that is important to the United States and our allies. We very much hope our friends will make this point to the North Koreans."

Jeong promised to do just that. "I will have straight talk about the nuclear issue," he said before flying to North Korea.

In Japan, Prime Minister Junichiro Koizumi added his harsh criticism. "It is outrageous that North Korea would have nuclear arms and weapons of mass destruction when its people are starving," he said while campaigning for a candidate of his party.

Both here and in Tokyo, analysts said that North Korea might be seeking to use the uranium-enrichment program as a bargaining chip. They note that North Korea could not have expected to hide indefinitely a uranium-enrichment program, which requires a major industrial effort and considerable energy.

The analysts also note the government's long pattern of brinkmanship, trying to build up a threat -- such as its missile program or a nuclear research project -- to then be used to win concessions in negotiations. The Bush administration has said it would not participate in such bargaining, noting that North Korea has admitted it violated the 1994 agreement.

Kelly would not flatly rule out negotiating with Pyongyang, but he insisted, "The best way to start negotiations is to end their covert nuclear weapons program."

"That said, we continue to have channels of communication should North Korea wish to give us information," referring to North Korea's delegation at the United Nations in New York. With no diplomatic relations between the United States and North Korea, Pyongyang does not have an embassy in Washington.

Kelly said the administration hopes to bring "maximum international pressure" on North Korea, but "we are just beginning the process."

Kelly and Bolton started their campaign in Beijing Thursday. China is North Korea's closest ally, but is not eager to see its unpredictable neighbor develop nuclear weapons. "We had two lengthy meetings in which we went through the information in great detail" with the Chinese, Kelly said. "They made it very clear they strongly opposed any nuclear weapons in the Korean peninsula."

In 1994, a similar crisis over North Korea's suspected development of nuclear weapons brought the United States very close to war with the country, according to accounts that emerged later from insiders. President Bill Clinton had ordered the U.S. military to prepare plans for an attack on North Korea, when former president Jimmy Carter seized the initiative and flew to Pyongyang to defuse the crisis.

<http://www.washingtonpost.com/wp-dyn/articles/A53655-2002Oct19.html>

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