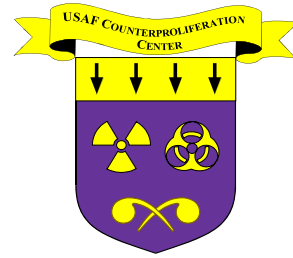


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Iraq Set To Open Sites Previously Off-Limits

By Rajiv Chandrasekaran

Washington Post Foreign Service

Wednesday, November 27, 2002; Page A01

BAGHDAD, Iraq, Nov. 27 (Wednesday) -- As U.N. arms experts began to hunt today for clues that President Saddam Hussein's government has or is developing weapons of mass destruction, the inspectors and the government both say they will be heading into previously out-of-bounds territory in a quest to avert a U.S. military attack. The inspectors set off early today in a convoy of nine white vehicles with U.N. logos and drove to a large military compound about 12 miles east of Baghdad. They were escorted by Iraqi officials and followed by about 50 cars carrying journalists, who were barred from entering the compound.

The inspectors, reinforced by a new Security Council resolution, say they finally will be able to visit any place in Iraq, including secret military research laboratories and Hussein's presidential palaces, without giving advance warning to Iraqi officials, a power that eluded their predecessors during more than seven years of inspections in the 1990s.

The Iraqi government, secretive and intensely nationalist, says it is willing under the resolution to open itself up to foreign officials in ways never before imaginable here. If it follows through on promises to cooperate, the government will be required to allow the U.N. inspection teams to walk through some of the country's most sensitive installations -- where not even many Iraqis penetrate -- and permit top scientists to be taken abroad for interviews. The degree of Iraqi compliance with the new inspection requirements, laid down Nov. 8 in a unanimous resolution, remains to be seen. It is also unknown whether Hussein's government is telling the truth when it claims that it no longer has weapons of mass destruction or programs to build them. But the government has vowed to abide by the new rules, and several signs point to a response that will be markedly different from the way Iraqi officials handled previous inspections from 1991 to 1998.

An adviser to Hussein said Tuesday that "every ministry, every site in the country that the inspectors might want to visit, has received instructions to cooperate fully."

"This is the first time the government has given this directive," he said. "They have been told, 'Prepare the keys. Prepare the person to accompany the inspectors. Prepare the gates to be opened 24 hours a day.'"

U.N. officials said they also were told by Iraqi officials that such orders have been issued. One of the inspection leaders, Mohamed ElBaradei, director of the International Atomic Energy Agency, has said the Iraqi government promised to provide the inspectors "full cooperation and full transparency."

Hans Blix, the chief U.N. inspector, told the Security Council Monday that Iraqi officials informed him during a visit to Baghdad last week that, despite the pledge of cooperation, inspections of sensitive laboratories and presidential sites cannot be as routine as those of more mundane sites. But he did not specify what conditions the Iraqi government might impose, and his lieutenants here put emphasis on the promises of cooperation.

"Things look different this time," said Demetrius Perricos, leader of an 11-member team from the U.N. Monitoring, Verification and Inspection Commission, Blix's organization charged with inspecting Iraq's chemical, biological and missile programs. Inspectors from the IAEA, who will work alongside those from the United Nations, will be responsible for nuclear issues.

U.S. officials are skeptical of Iraq's promises to cooperate, noting that Iraq has failed in the past to provide an honest accounting of weapons programs. They also contend that although Iraq might have destroyed much of its production capacity, it may also have hidden small caches of chemical and biological weapons that would be hard to find in a country of 168,000 square miles.

Many Iraqis, official and unofficial, expressed opposition to the demand to open up any building to the inspectors, calling it a violation of their sovereignty. But they said they were willing to put up with it if a war with the United States could be averted.

"Can you imagine inspectors going into the White House and searching everywhere without giving notice?" said Mohammed Akram, a Baghdad shopkeeper. "It's very difficult for us to imagine that people should be allowed to do that to us."

But, he said, if it might help prevent a U.S. attack, "we must swallow our pride and do this."

The Iraqi government also has indicated it will accommodate journalists who want to cover the inspections. The Information Ministry issued press passes Tuesday to about 100 foreign reporters and told them they would be free to follow the inspectors wherever they went. Usually, any visits to government buildings require advance permission and the presence of a government minder.

Government officials said they would be more than happy for journalists to witness the inspections in their entirety, filming the experts as they run their Geiger counters and scoop up soil samples. "We want the cameras inside," the

presidential adviser said. He said the government "wants to document the work of the inspectors, particularly if they try to create problems."

U.N. officials, however, nixed the presence of journalists at inspection sites, saying their Security Council mandate gives them the power to make places that are being searched "exclusion zones," where nobody can enter or leave.

"Our job is to be done in a quiet manner, away from the cameras," Perricos said.

With a clear Security Council mandate and the equivalent of nationwide backstage passes, the inspectors said they also plan to approach this round of searches differently. For starters, they have a clear game plan for inspections over the next few weeks, based on studying satellite photos and sifting through intelligence reports for the past four years, since the last group of inspectors withdrew.

"It is our first opportunity to go under the roofs to see what's there," Perricos said.

He refused to detail where they plan to visit first, but other U.N. officials said the initial searches almost certainly will occur at well-known sites long linked to Iraq's weapons programs, where the experts may install cameras and other surveillance equipment. Those visits, U.N. officials said, likely will result in little new evidence or confrontation, but will provide important practice for the newly arrived inspectors, many of whom have never worked in Iraq.

U.N. officials said they plan to pay close attention to Western intelligence reports that Iraq has shifted some of its chemical and biological weapons-related facilities underground and put others in mobile laboratories. The IAEA said it also intends to look into allegations that Iraq may be using recently imported aluminum tubes to enrich uranium compounds into weapons-grade material.

At a news conference Tuesday, the inspectors showed off some of the 20 tons of equipment they have flown into Baghdad in recent days, including ground-penetrating radar that can uncover underground facilities and radioactive isotope detectors. This round of searches will employ more advanced technology than inspectors have used in the past. Photographs, for instance, will be taken with digital cameras, allowing images to be sent to experts outside Iraq for their advice while inspectors are still examining a site, Perricos said.

<http://www.washingtonpost.com/wp-dyn/articles/A43564-2002Nov26.html>

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USA Today
November 27, 2002
Pg. 1

Bush Set To Order Shots For Smallpox

By Laurence McQuillan, USA Today

WASHINGTON — As early as Monday, President Bush is expected to order smallpox vaccinations for 500,000 U.S. military personnel and 510,000 civilian medical workers as a precaution against a biological attack by Iraqi agents or other terrorists, administration officials say.

Bush most likely will wait until next year before deciding whether the threat of a smallpox attack is serious enough to make the vaccine available immediately to all Americans, the officials say.

The limited approach lets Bush address a potential threat but delays the tough decision on whether to try to safeguard the public with a vaccine that could claim lives. The initial inoculations offer Bush a chance to get better advice from doctors studying the side effects of the vaccine.

Vaccinations were discontinued in 1972, when smallpox was declared eradicated in the USA.

The first stage of inoculations will take weeks or months, partly to screen out pregnant women and others who should not get the vaccine because of risks to their health — for example, anyone with a compromised immune system, such as a person with HIV.

Out of 1 million new vaccinations, at least 15 people would be likely to develop life-threatening complications, and one or two could die. But in a smallpox outbreak, 30% of those infected would die. The vaccination site on the skin requires special care for at least two weeks, because the vaccine is made with a live virus that can spread to other parts of the body or to other people.

The same risks existed when the vaccine was widely used, but the risk of smallpox infection was greater then. The last known case in the world was in 1977. Those previously vaccinated may no longer be fully protected, but their risk of side effects is less.

Whether to resume vaccinating Americans has been debated since the rise of the terrorist threat. Advisers see peril for Bush whatever he decides — if some people die after being vaccinated and there is no attack, or if he decides against vaccinations and then a deliberate release of smallpox kills Americans.

As a possible war with Iraq looms, Bush's military advisers, including Defense Secretary Donald Rumsfeld, have been pressing for the inoculations. Most of the 1.4 million men and women in the military were born after vaccinations ended 30 years ago.

Administration officials say the inoculations would cover about 100 workers at each of the nation's 5,000 hospitals. Additional vaccines for up to 10 million medical and emergency personnel would be ordered if Bush decided the threat warranted it, they say.

There is some uncertainty about the effectiveness of the vaccine, which works on the old form of the smallpox virus. However, government experts do not think Iraq possesses a newer, vaccine-resistant form developed in the old Soviet Union.

http://www.usatoday.com/news/health/2002-11-26-smallpox-vaccination-usat_x.htm

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Bloomberg.com

November 27, 2002

U.S. Army Searches Gas Mask Supply Worldwide For Leaky Gaskets

By Tony Capaccio

Washington -- The U.S. Army is searching its inventory of 1.5 million gas masks to weed out defective gaskets that may cause leaks, according to documents and service officials.

The Army has asked units to check supplies and maintenance records for 67,182 masks, or 4.5 percent of its total, that may have incorrectly designed gaskets, according to an Army statement issued in response to a query by Bloomberg News.

The gaskets will be replaced with equipment now being sent to troops, the Army's Soldier and Biological Chemical Command unit in Edgewood, Maryland, said in the statement.

This is the fourth time since the mid-1990s the Army has reported problems with its gas mask program. That raises concern the military is unprepared as it readies for a possible war with Iraq, said Representative Christopher Shays, chairman of the House National Security subcommittee.

"The process for reporting and monitoring the readiness of chemical and biological defense equipment is flawed and does not provide sufficient assurance that defective equipment can be identified and quickly removed," Shays, a Connecticut Republican, said in a statement.

The subcommittee will investigate why the defective gaskets, which were made in mid-2000 and last February, weren't discovered until recently, Shays said.

United Nations inspectors today begin searching Iraq for weapons of mass destruction including biological and chemical weapons.

Faulty Design

The Army doesn't believe any of the faulty masks have been supplied to troops in the field, the chemical command unit said in its statement. Any officer familiar with masks can spot the defect, and it's "highly unlikely" the units are being used, the statement said.

"To assure no soldier is put at risk, a maintenance advisory message will be sent instructing field organizations to inspect every mask that has had gaskets replaced since April 2000," the Army said in the statement. The statement was provided by Miguel Morales, an Army spokesman.

The gaskets at issue are supposed to provide an airtight seal where a voice transmitter is installed on the mask. They were made by Pac-West Rubber Plastics LLC in San Marcos, California, and Hoosier Industrial Supply Inc. in Goshen, Indiana, the Army said.

The defect stemmed from a faulty design supplied to the companies, according to the statement. "Neither company is at fault as they made the parts in accordance with drawings provided," which were faulty, it said.

Pattern of Flaws

The drawing used in 2000 was corrected. The Defense Logistics Agency, which buys most of the soldiers' gear, "mistakenly used the faulty drawing rather than the corrected version, on the 2002 contract," the statement said.

The Army has sent messages worldwide to Army and special forces units that would likely participate in an Iraq invasion, including the 18th Airborne Corps and the Army Special Operations Command, Fort Bragg, North Carolina; 1st Cavalry Division, Fort Hood, Texas; 10th Mountain Division, Fort Drum, New York; and V Corps, the Army's primary force in Europe, based in Heidelberg, Germany. V Corps has sent planning personnel to Kuwait. "Please deliver to the lowest level of command," an Oct. 24 Army message said.

The hunt for faulty gaskets marks the fourth time in less than nine years that the Army has confronted flaws in its gas mask program.

The Pentagon Inspector General in 1994 audits reported "significant" problems in design, production, maintenance and testing during an audit that performed sample inspections of 753 masks. The audits were disclosed in congressional testimony in June 2000.

'Critical Defects'

In 1997 and 1998, the Army tested 3,468 masks and found that 2,154, or about 62 percent, "had critical defects that could have resulted in mask leakage," according to a November 2001 report by the Army Audit Agency, which disclosed the tests.

The audit said "most of the defects could have been prevented by better maintenance." The Army didn't alert commanders to this deficiency so "their level of emphasis on mask maintenance and the status of the majority of the Army's fielded masks remains unknown."

At the Inspector General's request, the Pentagon conducted a third survey in 1999. This one covered 19,218 gas masks in stock with the Army, Marines and Air Force and found "critical defects" in 10,322, or about 54 percent, according to an unclassified summary of the survey team's November 1999 report that was released two years later. "Most service members going into harm's way, especially with a chemical or biological threat looming, expect they will have the right gear, at the right time and right place to protect themselves," said Raymond Decker, an official with the U.S. General Accounting Office who is studying readiness.

"Unfortunately, concerns over the inventory management of individual protective equipment and condition of some masks continue to persist as the possibility of war increases," he said.

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USA Today
November 27, 2002
Pg. 25

Saddam Conceals Weapons Well

By Khidhir Hamza

When United Nations inspectors begin their first weapons searches in Iraq in almost four years today, they will be confronted with a very difficult assignment that may determine whether we go to war with Saddam Hussein. As the former head of Saddam's nuclear-weapons program, I am often asked what these inspectors should be looking for, where and what sorts of clever dodges they should expect.

What Hans Blix and his U.N. team will meet are Iraqi teams with a very sophisticated knowledge of how to cover their tracks. Their prowess in this regard could hamper the effectiveness of these inspections, as they did in the past. It amazes me to hear some of the inspectors talk about the incompetence of Iraq's scientists and engineers. These are people who rebuilt all of Iraq's services — ranging from power stations to refineries to bridges — after the Gulf War. They seem uninformed because of Saddam's instructions. Back in 1973, when I was head of the physics department, which was involved in the planning of the nuclear-weapons program, and Saddam had taken over as Atomic Energy chairman, his words to us in a meeting were clear: "Pretend that you are not as well informed or as bright as you really are. A bright Iraqi is perceived as a danger to our enemies, but a mediocre one is not." That meant telling inspectors: "I don't understand the question, and I have no idea what this means."

We also got a lot of inadvertent help from the International Atomic Energy Agency (IAEA), which is also participating in the latest inspections. The IAEA had formed the International Nuclear Fuel Cycle Evaluation (INFCE) group to tell the world how nuclear-weapons programs are concealed. Its massive report, published around 1980, had a volume specifically dedicated to the telltale signs of weapons. The INFCE volume was must-reading for all Iraqi department heads. It was translated into Arabic and distributed free to all who might need the information. It was a handy how-to guide for throwing inspectors off course.

The report said that if a country is enriching uranium, it is using a lot of power, so inspectors should look for a large number of power cables going into an undeclared facility. So at our Tarmia uranium-enrichment facility, we hid all of our power cables underground.

It also said to look for a lot of heavy traffic from large trucks going into different plants because of the large amount of supplies required to sustain a weapons program. So we ran our trucking operations only at night.

Surour Mirza, our agent at the IAEA, who fronted as our science attaché in the Iraqi Embassy in Vienna, used to send us messages warning that any underground digging would alert U.S. satellites to our secret activities. So, we canceled all underground planning for future facilities.

Of course, Saddam has not been sitting tight waiting for the U.N. to act this time, either. Most of Iraq's leading scientists, who have faced inspectors in the past, have been officially transferred out of weapons-of-mass-destruction programs. The transfers are only on paper, but the ploy gives Saddam the opportunity for denial.

"This scientist left the project long ago, and he is in the private sector. We really don't know his address anymore," was a familiar answer about many scientists in the weapons programs during the last inspections. By making the scientist unavailable, the inspectors were denied information about parts of the weapons program.

The word out from the Gulf media is that Saddam has ordered all families of WMD senior workers be resettled in three high-security compounds. Thus, measures are already in place to make it difficult to interview scientists without Iraqi minders. Also, with his family in confinement, a scientist will be in no position to talk to an inspection team, which might leak information to Iraqi authorities.

The only way around this problem is to remove, in bulk, a predetermined group of scientists along with their families from Iraq and then start debriefing them abroad. But Blix already has said that he has a problem with taking scientists out of the country or talking to them without Iraqi minders.

With the U.N. bureaucracy taking over these inspections rather than weapons-lab scientists, we are back to where we were before the Gulf War. Then we had none of the gung-ho attitude of the teams that came in after the Gulf War.

This time, these are gentleman inspectors with none of the abrasive behavior of past inspectors. They will be patient, polite and reluctant to take a strong stand. They represent more of the European sentiment than the U.S. one. With Iraq regarded by Europe as a prize to be kept away from the Americans rather than a strategic danger, the teams are not likely to be aggressive in implementing the latest U.N. resolution. In fact, this past weekend, Blix made clear that their initial inspections in Iraq would be non-confrontational.

Still, if the past is any guide, Iraqis will make their job difficult. If an inspector arrived at a building, he would be faced with locked doors to all but the rooms he was supposed to go into. Though an inspector had the right to go into any room in the building, we never were asked to open a locked door. Thus our work on uranium enrichment was carried out inside buildings that were covered by the inspections, but we never worried about being discovered. In the past, Iraqis have had to be very heavy-handed before inspectors would cry foul.

The real test will be Dec. 8. Iraq already has denied it has any weapons of mass destruction. It has two ways to go: either continue the denial or admit to a token stockpile. The admission can be downplayed in many ways, including by explaining the possibility that someone forgot to report this or that weapon. The Russians and Europeans will be very understanding and protective. You can't go to war, they will say, based on a mistake. The man is coming clean; what else do Americans want?

The only problem is that Saddam will never come clean.

Tariq Aziz, Iraq's deputy prime minister, has declared that the United States intends to disarm Iraq first and attack it later. So there will be no real disarmament. If the United States accepts the situation with incremental demands for disarmament, then the game is over, and Saddam has won.

If the United States refuses to accept an inconclusive or tepid inspection report and goes into Iraq anyway, then all of the rogue states of the world will take notice and mend their ways.

The types of conflict we will face in the future will be determined now. Are rogue dictators allowed to amass weapons of mass destruction and get away with it? Every one of them is watching what will happen to Saddam.

Khidhir Hamza is author with Jeff Stein of Saddam's Bombmaker.

http://www.usatoday.com/news/opinion/editorials/2002-11-26-oplede_x.htm

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U.N. Revisits Suspect Plant

Inspectors Spend 4 Hours At Largely Abandoned Lab

By Rajiv Chandrasekaran, Washington Post Foreign Service

AL-DAWRAH, Iraq, Nov. 28 -- After uncovering evidence in 1996 that a veterinary medicine laboratory here had been covertly producing strains of botulinum toxin, a deadly bacteriological warfare agent, U.N. weapons inspectors trashed the facility, slicing open fermentation tanks and chopping up metal piping. Much of the ventilation system was taken apart. Laboratory equipment was disabled or destroyed.

Today, a new team of U.N. experts, armed with clipboards and sophisticated testing gear, returned to the al-Dawrah Foot and Mouth Vaccine Production Laboratory to check whether military research had resumed. The inspectors did not say why they chose to visit the site on the second day of their resumed hunt for weapons of mass destruction in Iraq, but they might have been following up on a recent CIA report that the Iraqi government has plans to renovate the plant.

The inspectors would not detail what they found during their four-hour search. But after they departed, Iraqi officials, who insist there is no reconstruction work going on at the al-Dawrah center, permitted journalists to enter the site briefly. To the untrained eye, the site betrayed no signs of renovation -- but plenty of disrepair.

As weapons searches resume here after a four-year hiatus, U.N. experts and the Iraqi government appear after the first two days to have settled into a reasonably harmonious routine, at least for the initial phase of inspections. The lack of immediate problems has fueled optimism among some U.N. officials that this round of inspections finally may provide the world with a more accurate picture of Iraq's alleged weapons stockpiles and its capacity to develop nuclear, biological and chemical arms.

"It's a good start for the inspections," said Jacques Baute, an inspection leader from the International Atomic Energy Agency, which is coordinating the inspections with a special U.N. commission examining Iraq's biological, chemical and missile programs.

On both days, as soon as the inspectors pulled out of the U.N. compound in Baghdad, they were met by Iraqi officials who followed the white U.N. vehicles to the sites chosen for a visit. When the inspectors reached their destinations, there was no delay in admitting them. And when they sought to poke around, collect samples or pore through documents, there were no significant objections, according to U.N. officials.

Although the inspectors have not given Iraqi authorities advance warning of the sites they plan to search, they have commenced the inspections in a nonconfrontational way by visiting places that already were scoured by U.N. experts in the 1990s.

The inspectors have insisted that journalists be kept out of the sites during the searches. But so far, Iraqi officials have been willing to admit reporters after the experts depart, usually for brief photo opportunities, to show off what they say is their lack of banned weapons and their cooperation with the inspection process.

At each of the five sites that inspectors have visited, officials displayed equipment and operations that did not appear to violate U.N. restrictions. This suggests that if there is suspicious activity, it is taking place in other parts of the sites or in other locations.

The Iraqi government has not issued any statements about the inspections, but it has voiced none of the criticism that punctuated the U.N. inspection process in the 1990s. "Things appear to be working relatively well," a U.N. official said. "The Iraqi side appears to understand what we have to do, and we are respectful of them."

But, the official said, "it's still too early to tell if things will continue to be this smooth."

U.S. officials have expressed skepticism that the inspectors will receive the same level of cooperation if they attempt to search President Saddam Hussein's palaces or other sensitive sites. A U.N. Security Council resolution approved unanimously Nov. 8 calls for the inspectors to get access to any person or place in Iraq without having to seek permission or provide advance notice.

President Bush has threatened to force Iraq to disarm -- shorthand for a U.S. military invasion to destroy Hussein's government -- if it does not cooperate with the inspectors.

On Wednesday, the inspectors visited a large engineering center and a military-industrial complex on the outskirts of Baghdad that contains a missile-testing facility and a graphite-products factory. Today, they visited al-Dawrah, on the southern fringe of Baghdad, the capital, and the al-Nasr complex, about 25 miles north of Baghdad.

Factories at al-Nasr had produced bombs that were believed to hold chemical agents. They also had extended the range of Scud missiles imported from the former Soviet Union. Now, officials insisted, the factories make only light conventional ammunition and heavy civilian machinery.

During their visit to al-Nasr, the inspectors checked on sophisticated machine tools that can help manufacture gas centrifuges used to enrich uranium.

At the al-Dawrah site, journalists observed a half-dozen biological inspectors, wearing baby-blue U.N. hats and armbands, walking through the grounds with their clipboards, appearing to scribble notes and check off items. When they reached the back of the complex, one expert climbed to the top of a 20-foot metal storage tank to peer in. Others asked for a padlocked brick building to be opened, which prompted two Iraqi officials to scurry in search of keys.

The plant's director, Muntassar Omer, said the inspectors used cotton swabs to take samples from tanks and from the ventilation system. He said the inspectors also looked at cameras they had installed in the 1990s that no longer work. The facility was set up with the help of French experts in the 1980s as a production center for a food-and-mouth disease vaccine. Iraqi military researchers later installed a sophisticated biocontainment facility with an extensive air-handling and filtering system suitable for the production of lethal biological agents.

Before the 1991 Persian Gulf War, Iraq admitted that al-Dawrah had been used to develop biological agents, but the government insisted it had engaged only in "small-scale, defensive" research. It was not until 1995 that U.N. arms experts concluded that the facility had been used to develop significant quantities of botulinum toxin. U.S. and British intelligence agencies also suspect that the plant was used to manufacture anthrax.

In an unclassified report issued last month, the CIA noted that Iraq announced in 2001 that it would begin renovating al-Dawrah to once again produce a foot-and-mouth vaccine. But today's visit suggested that work has not begun.

Stacks of dusty, years-old veterinary journals lined the main hallway. Trash covered the floor and the overhead lighting was broken. Laboratory workbenches were piled high with grimy glass bottles, beakers and pipettes, but there was little in the way of equipment that appeared to work. In one large production room, strewn with bolts and mangled pieces of metal, signs of the earlier U.N. pipe-cutting and tank-busting were apparent.

"Everything is destroyed here," Omer said. "No one can do anything here."

<http://www.washingtonpost.com/wp-dyn/articles/A52069-2002Nov28.html>

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USA Today
November 29, 2002
Pg. 4

Little Resistance To Smallpox Shots Expected

World has changed since revolt against anthrax vaccine

By Dave Moniz, USA Today

WASHINGTON — When the Pentagon begins inoculating troops with smallpox vaccine in the next few weeks, it is unlikely to encounter the resistance that erupted when the services administered anthrax vaccinations, military analysts say.

Facing an uncertain threat from the deadly smallpox virus, sources in the White House say Bush soon will announce plans to vaccinate 500,000 military personnel and 510,000 civilian medical workers.

Troops considered at highest risk are those who could be assigned to the Middle East in the event of war with Iraq, which is suspected of maintaining stocks of the smallpox virus. The initial vaccination plan also would cover troops in key homeland security roles.

"I think it would be a very small percentage of folks who would not want to take the shots," says Jim Martin, a retired Army colonel who teaches courses on military culture at Bryn Mawr College in Pennsylvania. "Most troops at this stage would consider this a natural consequence of military service."

Smallpox vaccine is administered in one injection. For every 1 million people vaccinated, 1,000 have adverse reactions that are not life-threatening; one or two die.

Earlier this month, Defense Secretary Donald Rumsfeld recommended that up to 500,000 U.S. troops be vaccinated for smallpox.

The Pentagon's experience administering anthrax vaccine to troops beginning in 1998 was mixed. The overwhelming majority of those ordered to take the vaccine did so and suffered no health problems, but the Defense Department's policy created a miniature revolt in the National Guard and Reserves.

Dozens of Air Force Reserve members and a handful of active-duty troops refused to take the vaccine, which is given in a series of six shots. Those refusing to take the anthrax vaccine claimed it had never been properly tested and could have adverse side effects.

Critics said as many as 400 Guard and Reserve officers refused to take the vaccine. Instead of protesting publicly, many quietly left the service rather than re-enlist. Two years ago, amid a congressional inquiry and controversy over plans to inoculate all 1.4 million active-duty troops, the Pentagon began to run out of vaccine and suspended the program. Inoculations resumed this year for a number of troops headed overseas.

Defense analysts and former military officers anticipate no revolt with the smallpox vaccine, for several reasons: "We know that Saddam Hussein has ordered a bunch of antibiotics and huge quantities of Atropine, so biological and chemical weapons are a real threat," says David Grange, a retired Army general who served in the Persian Gulf War in 1991. "If I was going to be deployed over there, I'd want the smallpox shot."

Atropine and the antibiotic Cipro are recommended treatments for exposure to chemical and biological weapons, including anthrax. Iraq's large-scale purchase of antidotes to chemical and biological weapons has heightened fears that Saddam is willing to use such terror weapons against U.S. troops.

There is no cure for smallpox, a pathogen that kills about 30% of those infected. There have been no cases of smallpox since the late 1970s, but a handful of countries, including Iraq, are believed to have developed strains of the disease as a biological weapon.

http://www.usatoday.com/news/washington/2002-11-28-smallpox-usat_x.htm

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Washington Post
November 28, 2002
Pg. 1

Nuclear Terrorism Focus Shifting To Research Facilities

By Joby Warrick, Washington Post Staff Writer

KHARKIV, Ukraine -- In 1994, a senior Ukrainian nuclear scientist offered U.S. officials a chance to buy a cache of weapons-grade uranium held by an obscure defense laboratory in this city. It was a significant cache -- 165 pounds, enough for three nuclear bombs -- and the scientist said Ukraine might be willing to give it up.

"It's lightly guarded," the scientist said, according to two Clinton administration officials present at the meeting, "and I'm worried about it." The deal never happened.

Eight years later, with new concerns about nuclear terrorism, the U.S. government would like nothing better than to buy Ukraine's uranium. But the opportunity appears to be slipping away.

Relations with Ukraine recently have taken a confrontational turn, and the laboratory, the Kharkiv Institute of Physics and Technology, now insists the material is urgently needed for civilian research. Meanwhile, despite elaborate physical protections for the uranium, U.S. weapons experts see new reasons to worry about its safety: The lab is facing extreme financial pressure at a time when Iraqi officials have been openly pursuing trade deals with local companies and paying visits to Kharkiv's Soviet-era weapons factories and research centers, including the institution where the uranium is kept. Iraq two years ago appointed an "honorary consul" in Kharkiv, a Ukrainian exporter who keeps an office not far from the institute -- and openly displays an Iraqi flag on the front door.

"We would be far better off today if we had just gotten rid of the stuff," said Matthew Bunn, a former White House nonproliferation policy adviser, who argued unsuccessfully for a U.S. purchase of the uranium eight years ago.

"Insecure nuclear material anywhere is a threat to people everywhere."

The highly enriched uranium at Kharkiv is emblematic of a global proliferation threat that has now become a top priority for the United States: the vulnerability to theft or misuse of weapons-grade uranium kept in scientific institutions, such as research reactors. An estimated 20 tons of highly enriched uranium currently is stored at such locations in about 40 countries, from Russia and other former Soviet republics to Libya and Congo.

In the last decade, efforts to protect against the theft of nuclear materials largely focused on military installations.

But weapons experts say that the research facilities are lightly guarded in comparison with military stockpiles. Some terrorism experts regard them as the most vulnerable repositories of nuclear material in the world.

"We are talking about the raw material of nuclear terrorism, stored in hundreds of facilities in dozens of nations," former senator Sam Nunn (D-Ga.), a longtime arms control advocate, told a conference of nuclear terrorism experts this month. "Some of it is secured by nothing more than an underpaid guard sitting inside a chain-link fence."

In August, the Bush administration achieved a dramatic breakthrough when it persuaded Yugoslavia to give up 100 pounds of highly enriched uranium from the Vinca Institute of Nuclear Sciences near Belgrade. But the deal required more than a year of complicated negotiations involving Yugoslavia, Russia and the State Department. As a

clinch, the United States pledged \$5 million to be paid to the institute by the Nuclear Threat Initiative, a nonprofit group co-founded by Nunn and billionaire entrepreneur Ted Turner.

Afterward, the State Department announced it had targeted two dozen other research institutions as "priority sites," most of them in Eastern Europe and the former Soviet Union. But while progress has been made in the negotiations, several countries have balked, refusing to give up what they see as a powerful bargaining chip that could be used to extract money, technology or other concessions, according to administration officials and weapons experts familiar with the talks.

Two of the countries most opposed to giving up uranium -- Ukraine and Belarus -- also happen to own some of the largest stocks of the metal. Both countries are under increased scrutiny by U.S. intelligence officials because of alleged attempts by local businesses to sell weapons or military supplies to Iraq or Iran.

"They were once willing to help us, but they may not be so willing anymore," said Bunn, now a senior researcher for Harvard University's Project on Managing the Atom. "We can only hope that someone eventually can put together a package that will change the answer from 'nyet' to 'da.' "

A Dangerous Asset

The gravest nuclear threat in Ukraine is housed in a crumbling institution that struggles in most years to pay its heating bills. Two-thirds of its staff has been laid off, and the remaining workers scrape by on the equivalent of about \$150 a month. Scientists with two PhDs spend their days in freezing-cold buildings, sometimes as caretakers for such technological dinosaurs as the institute's 40-year-old linear accelerator, once the world's largest, but now permanently idled in a building that is kept dark to save on electricity bills.

By almost every measure, the Kharkiv Institute of Physics and Technology, or KIPT as it is known, bears scant resemblance to the bustling weapons lab that existed here in Soviet times. Before the breakup of the Soviet Union, the lab had 6,000 workers and a mission to develop special materials for the most advanced weapons in the Soviet arsenal -- from nuclear warheads to the missiles that carried them. The institute's two campuses were part of a larger weapons-research complex in Kharkiv that collectively employed 50,000 scientists, giving this otherwise dreary city of 2.5 million the distinction of having one of the greatest concentrations of weapons expertise in the world.

Exactly how the institute came to acquire 165 pounds of highly enriched uranium is unclear. The lab has never owned a nuclear reactor and was never directly involved in weapons fabrication. In contrast with similar labs in other former Soviet republics, the Kharkiv institute has clung to a tradition of secrecy about many aspects of its past, and will not even discuss the amount of uranium it has.

This much is clear: More than a decade after the institute was converted to civilian research, the uranium remains one of the lab's most significant and dangerous assets.

"The uranium at Kharkiv has at best little relevance to Ukraine's peaceful nuclear energy needs, and has been untouched for over a decade," said William Potter, director of the Center for Nonproliferation Studies, a Monterey, Calif., weapons think tank that has studied the lab and its holdings. "It represents a major terrorist and proliferation target, and also poses a residual 'breakout' threat, should Ukraine ever seek to repudiate its commitments" renouncing nuclear weapons.

Energy Department officials apparently shared those concerns, agreeing in 1995 to help the U.N.-chartered International Atomic Energy Agency build a multimillion-dollar security system for the uranium. In 1999, the agency completed work on a double vault -- an outer shell of concrete, an inner shell of hardened steel -- and installed security cameras and fences to guard against intrusion. Once a month, IAEA inspectors check the uranium to ensure none is missing.

Today, officials at the institute cite security concerns in refusing to allow visits to the storage facility, even by Ukrainian government ministers. They boast of a fail-proof system equal to the finest in Europe and North America.

"It is not possible to remove from our institute even one single milligram," deputy director Alexei Yegorev said in an interview at the lab's main administration building, an office tower in a suburb of Kharkiv.

Energy officials familiar with the upgrades agree -- to a point. But they assert that there is no reliable defense against a future government decision to thwart the safeguards.

"It's just like the bank manager who turns off the alarm and takes the money," said an official of the Energy Department's National Nuclear Security Administration. "There's no system in the world that can protect against that."

The Iraq Connection

From the start of Iraq's quest for a nuclear bomb in the 1970s until the present, the main obstacle has been the lack of fissile material -- enriched uranium or plutonium needed for a nuclear explosion. Western intelligence agencies estimate that if President Saddam Hussein could buy or steal a quantity of fissile material one-third the size of Kharkiv's 165 pounds of uranium, Iraq could become a nuclear power in less than a year.

The possibility that Iraq might try to cut a deal for the uranium partly explains the intense U.S. interest in recent Iraqi trade missions to this city. Encouraged by Kharkiv businessmen, Iraq opened a consular office in this city in December 2000 and dispatched at least three official delegations since 1998 to explore trade opportunities. At least one of the delegations toured the institute, laboratory officials confirmed.

"The Iraqis were interested only in an overview -- they made no requests," said Yegorev, the institute deputy director.

Yegorev said there were no other official contacts with the Iraqis, although individual scientists recalled being approached by Middle Eastern businessmen who claimed to represent Iraq or Iran.

Concerns about possible Iraqi overtures to the institute first arose in the early 1990s, when documents obtained by U.N. weapons inspectors in Iraq pointed to alleged trafficking of weapons materials between Kharkiv and Baghdad. The key Ukrainian figure in the documents was Yuri Orshansky, a businessman with a PhD in electrical engineering. At the time, Orshansky was the head of a loose confederation of Ukrainian businesses called Montelegt that included several of the KIPT's sister institutions in Kharkiv. Documents found in Iraq included an agreement signed by Orshansky and Iraqi Brig. Gen. Naim Bakr Ali, then one of the leaders of Iraq's ballistic missile program, to provide Iraq with guidance systems and parts for advanced missiles, according to Timothy V. McCarthy, a former U.N. weapons inspector who investigated Iraq's Ukrainian connections in the mid-1990s. A third party to the protocol was a Kharkiv company, Khartron, a neighbor of the KIPT and an institution best known for designing Soviet ballistic missiles.

"We found a copy of Orshansky's passport in Baghdad with the documents describing the deal," said McCarthy, now the director of the Proliferation Research and Assessment Program at the Center for Nonproliferation Studies. "The Iraqis basically gave him up."

McCarthy said U.N. inspectors never were able to determine whether missile parts actually were delivered -- nor could the inspectors directly link Orshansky to any other technology sales to Iraq. The chances of finding hard evidence linking any foreign supplier to Iraq are always small, he noted, because Iraqi officials often use middlemen and obscure delivery routes to mask smuggling.

"Getting the goods into Iraq is never the problem," McCarthy said.

Meanwhile, Orshansky's continuing efforts to build ties between Iraq and Kharkiv businesses earned him two years ago the special title of "honorary consul" of Iraq in Kharkiv. In an interview last year with the Ukrainian defense news service, Defense Express, Orshansky boasted of making 40 trips to Baghdad since 1993, and said he had embarked on a "constant study of Iraq's needs in all areas," working within the boundaries of Ukraine's export laws.

"On some issues we have begun to work with Iraq in order to create conditions so that orders are placed with Ukraine," Orshansky was quoted as saying. "Even if they want to create a nuclear bomb, we will study this."

In the months following U.S. allegations of illegal sales of Ukrainian air defense radars to Iraq, Orshansky has kept a lower profile. Contacted at his Kharkiv office last month, he declined to meet with a Washington Post reporter or discuss any aspect of his business ties with Iraq. "If you've come to talk about Montelegt, I have nothing to say," he said, referring to the Ukrainian business confederation.

Orshansky's choice of office decor, however, was itself a bold statement. In the place of a sign announcing the name of his company, Orshansky displayed a large tricolor Iraqi flag with the familiar stars and the words "God is Great" written in Arabic. Above the door was an Iraqi eagle, the preferred symbol for Saddam Hussein's Baathist government.

In 1994, a chance to eliminate the risks posed by the Kharkiv institute's enriched uranium was briefly dangled before Clinton administration officials, some of whom had never heard of the facility. The possibility of a sale grew out of a meeting in Washington with a visiting Ukrainian nuclear scientist who mentioned the KIPT's supply of weapons-grade nuclear material in a discussion of problems facing Ukraine's nuclear industry. Security for the enriched uranium was a big worry, the Ukrainian scientist said, according to those who heard him. "But your people already know this."

Bunn, then an adviser on nuclear terrorism in the Clinton White House's Office of Science and Technology Policy, made a few phone calls and learned that Energy Department officials had indeed visited the facility and had agreed to an IAEA plan that called for securing the material, not removing it. The notion of a deal to purchase the uranium was initially welcomed by State Department officials but ultimately went nowhere. At the time, Bunn explained, the administration was more concerned about removing the Soviet nuclear warheads still on Ukrainian soil.

"The wheels of bureaucracy failed to turn," Bunn said.

Today, much has changed. The former Soviet republics outside Russia have given up their nuclear warheads and delivery systems. The United States is spending billions of dollars to help Russia dismantle nuclear weapons. Now, fresh attention is being devoted to new threats, such as the fissile material in Kharkiv. The United States favors removing enriched uranium from dozens of research reactors around the world, using a combination of money,

technology transfers and political pressure as leverage. Energy Secretary Spencer Abraham said in a speech Nov. 14 that a major factor in the new approach is that Russia has agreed to accept nuclear fuel returned from Soviet-designed reactors around the world.

"This fuel needs to be repatriated to Russia, where it will be safer from the risk of theft or diversion," Abraham said. So far, such arguments have failed to sway the keepers of Kharkiv's uranium. Top managers of the Kharkiv institute said there is no interest in selling the uranium because it is vital to the institute's plans to develop a new line of commercial fuel for nuclear power.

"It is not possible for us to sell it," said Yegorev, the deputy director. "You would not only need a special order of the Ukraine government but special permission of the IAEA, because it is under their control. Without this we can do nothing."

U.S. officials aren't convinced that this is the final word. Although relations occasionally have been rocky, Ukraine's leaders have almost always sided with the United States and NATO in deciding whether to scrap weapons systems that are deemed proliferation threats. Earlier this month, senior Ukrainian officials stood with their U.S. counterparts to watch the destruction of the first of Ukraine's 225 Soviet-built Kh-22 missiles, medium-range weapons that potentially can carry nuclear, biological or chemical warheads.

"You'll hear mumbling now and then from the military, but ultimately the cooperation is always fairly good," said a U.S. official. "Ukraine doesn't need these weapons anymore. And as the leaders know, if you let something lay around long enough, eventually it will disappear."

<http://www.washingtonpost.com/wp-dyn/articles/A48663-2002Nov27.html>

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U.N. Team Searches Possible Bioweapons Site

By Rajiv Chandrasekaran

Washington Post Foreign Service

Monday, December 2, 2002; Page A15

KHAN BANI SAAD, Iraq, Dec. 1 -- In the late 1980s, according to U.N. arms experts, military researchers at this sleepy airfield north of Baghdad tested the Zubaidy device, a helicopter-mounted contraption that could disperse deadly bacteriological agents from the air.

U.N. inspectors who scoured Iraq in the 1990s for weapons of mass destruction believe a dozen Zubaidy devices were built. But unlike thousands of other pieces of equipment affiliated with Iraq's programs to develop banned arms, the spraying units never were confirmed to have been destroyed. The inspectors wrote in their last report that "the final, tested devices were unaccounted for."

Today, a new contingent of U.N. inspectors returned to the airfield, presumably to search for information about the devices and to examine whether Iraq has been conducting biological or chemical weapons research. They spent almost five hours at the site, walking inside three large camouflage-painted hangars and looking at a collection of rusty Soviet-made helicopters, chemical tanks and spraying nozzles scattered on the tarmac. The airfield's director said the inspectors also took samples from inside the tanks and downloaded files from computers in his office.

As the inspectors searched the airfield, Iraqi officials said, Western warplanes bombed an oil company office building in the southern port city of Basra, killing four people and wounding 27 others. An Iraqi military spokesman said two rockets hit the offices of the Southern Oil Co. this morning. The company supervises the country's oil exports under a U.N. program that allows Iraq to sell oil for food and humanitarian supplies.

U.S. officials confirmed an attack occurred, but they said U.S. and British planes, which police "no-fly" zones in southern and northern Iraq, hit air-defense facilities near Basra in response to Iraqi antiaircraft artillery fire.

Iraqi officials did not say who fired first. An Iraqi military spokesman said coalition planes staged 62 "armed sorties" over southern Iraq this morning. "Iraqi missile batteries and ground defenses confronted the warplanes, forcing them to flee to their bases in Kuwait," the spokesman was quoted as saying by the official Iraqi News Agency.

U.S. officials have accused Iraq of placing air-defense installations and radar equipment close to civilian installations.

The no-fly zones were established after the 1991 Persian Gulf War to protect a Kurdish enclave in the north and Shiite Muslims in the south from attack by President Saddam Hussein's military. U.S. officials have said American and British aircraft have been targeted more frequently by Iraqi antiaircraft gunners in recent months.

At the Khan Bani Saad airfield, the director, Montadhar Radeef Mohammed, who said he has been at the post since 1998, said he knew nothing about the Zubaidy devices or other biological weapons testing at the site.

He said the tanks, nozzles and helicopters are used to spray pesticides on crops.

"We have only civilian functions," he said. "These systems are for plants."

He said the inspectors found no prohibited material during their search. The inspectors, who have completed four days of searches, did not comment about the visit here. They have said they will reveal their conclusions only to their superiors in New York and Vienna, who in turn must report to the U.N. Security Council.

The airfield, surrounded by a sea of yellow corn scattered by local farmers making cattle feed, is run by the Ministry of Agriculture. Mohammed said no pesticides or other chemicals are kept on the site. Instead, he said, the helicopters fly to farms, where the side-mounted tanks are filled before pilots commence spraying operations. The facility has about 25 aging Soviet Mi-2 helicopters, but only about nine work, he said. The rest need spare parts whose import has been blocked by a U.N. committee enforcing economic sanctions imposed after Iraq's 1990 invasion of Kuwait. The import of aviation parts has typically been restricted because of concerns they could be used for military purposes.

After the inspectors left, Iraqi officials allowed journalists to enter the facility and walk across the airfield. Several dozen torpedo-shaped tanks and spraying nozzles, which had U.N. identification tags affixed by earlier groups of inspectors, were lined up on the tarmac.

The inspectors returned to Iraq last month, after the Security Council unanimously passed a resolution threatening "serious consequences" for Iraq if it did not allow international arms experts access to any person or place in Iraq without the inspectors having to seek permission or provide advance notice.

The previous groups of U.N. inspectors, who first arrived in Iraq in 1991, destroyed tons of chemical and biological weapons and have been credited with dismantling the country's nuclear weapons program. But the monitoring ended in 1998 as disputes arose over the inspectors' access to sites and Iraqi objections that the United States used some inspectors as spies.

The inspectors have not told the Iraqi government in advance which sites they plan to search, but they have begun their inspections at places that already were scoured by U.N. experts in the 1990s. That strategy is expected to continue at least until Dec. 8, when an additional 35 inspectors are scheduled to augment the 17 already on the ground.

<http://www.washingtonpost.com/wp-dyn/articles/A61351-2002Dec1.html>

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Washington Post
November 30, 2002
Pg. 1

Troops Lack Protective Gear, Say Lawmakers

Safety Against Chemical, Biological Arms Doubted

By Vernon Loeb, Washington Post Staff Writer

As the Pentagon girds for possible military action against Iraq, it is having problems providing U.S. troops with state-of-the-art protective gear against chemical and biological attacks, lawmakers from both parties said this week. The lawmakers' worries have been buttressed by the General Accounting Office, which recently reported "continuing concerns" about equipment, training and research. The GAO said that for six years, "we have identified many problems in the Defense Department's capabilities to defend against chemical and biological weapons and sustain operations in the midst of their use."

Rep. Christopher Shays (R-Conn.), chairman of the Government Reform Committee's national security subcommittee, said the latest problem Pentagon officials uncovered involves gas masks that have the wrong gaskets and will require extensive inspections to ensure that they are functioning properly.

Shays said he is also concerned about the Defense Department's inability to manage millions of protective suits so that units likely to deploy to the Persian Gulf receive the highest-quality gear, with 250,000 defective suits unaccounted for in the Pentagon inventory.

"I visited the troops in Europe, who I believe will be first responders in Iraq, and they did not have the best equipment we have, and that is a concern to me," Shays said. "We don't know where some of our best suits are -- they are God knows where. And in some cases, we've mixed bad inventory with good."

Raymond J. Decker, the GAO's director of defense capabilities and management, said he was not convinced that the Pentagon had enough new, highly protective, lightweight suits to equip all forces likely to fight a war in Iraq.

With the new suits in relatively short supply, Decker said, the Pentagon must rely on millions of older suits manufactured since 1989. But the quality of those charcoal-lined garments, he said, diminishes with age. A Capitol Hill source, who asked not to be named, said recent Pentagon tests had revealed that the older suits are good for only a day or two after they are removed from their protective packaging. If additional testing turns up similar results, the source said, "they've got a big problem."

The GAO told Shays's subcommittee in October that the Pentagon could not locate 250,000 defective suits manufactured since 1989 by a New York company called Isratex, whose officers have been convicted of intentionally providing the military with defective garments. An additional 530,000 defective suits produced by the firm have been located and removed from military stocks.

In a letter sent Wednesday to Defense Secretary Donald H. Rumsfeld, a member of Shays's subcommittee, Rep. Janice D. Schakowsky (D-Ill.), cited "extremely troubling" testimony by his subordinates on chemical and biological preparedness, particularly with regard to the 250,000 defective suits still missing.

In the letter, Schakowsky asked Rumsfeld to certify that all troops deployed to the Gulf for any possible military action against Iraq "have been provided with equipment to protect against chemical and biological attacks in quantities sufficient to meet minimum required levels previously established by the Department of Defense." The threat to U.S. forces is particularly acute as the Bush administration puts the finishing touches on invasion plans to topple Iraqi President Saddam Hussein if his government does not relinquish its nuclear, chemical and biological weapons and fully cooperate with U.N. weapons inspectors.

The CIA says Iraq most likely has stockpiled "a few hundred metric tons of chemical warfare agents," including the nerve agents VX, sarin, cyclosarin and mustard gas, and also possesses anthrax and other lethal biological agents that could be weaponized.

Iraq did not use chemical or biological weapons against U.S. forces during the Gulf War, even though Hussein ordered commanders to fill Scud missile warheads, bombs and artillery shells with chemical agents. But many analysts say Hussein and his most loyal commanders will not hesitate to use them in another war, because this new military campaign would be for the explicit purpose of toppling Hussein's government.

Anna Johnson-Winegar, the Defense Department's deputy assistant secretary for chemical and biological defense, said she believed the Pentagon would be able to reach a "goal" for providing all troops sent to the Gulf with the new protective suits, officially named the Joint Service Lightweight Integrated Suit Technology, or JSLIST, suits. Johnson-Winegar also said recent tests had given defense officials "complete confidence" in the protective capabilities of the JSLIST suits and the older garments.

Retired Army Gen. Barry McCaffrey, who commanded the 24th Infantry Division during the Gulf War and is under Pentagon contract to brief the commanders of units likely to deploy on what to expect in any military action against Iraq, said he believed that U.S. forces were well prepared for chemical or biological attacks.

"Every fighter wing, every Navy ship at sea, every Army battalion is fully equipped to fight in a chemical environment," McCaffrey said. He underscored the threat last month when he told commanders of the 3rd Infantry Division at Fort Stewart, Ga., that they should expect to be attacked with chemical weapons.

Lt. Col. Stephen M. Twitty, commander of the 3rd Infantry Division's 2nd Brigade, deployed in Kuwait, said his unit was well equipped and well trained to withstand chemical or biological attacks, having trained in offensive and defensive operations for as long as seven hours in full protective gear.

"During these training maneuvers, we tested our soldiers' ability to fight, test for agents [and] decontaminate themselves and their equipment," he said. "Additionally, we have conducted foot marches in [full protective gear] over long distances."

The U.S. military's preparedness for chemical and biological warfare has greatly improved since the Gulf War, when 100,000 troops were exposed to trace levels of sarin nerve gas when engineers blew up sarin-filled rockets at a munitions dump in Khamisiyah in March 1991.

In addition to the new protective suits and masks, U.S. forces are equipped with armored M-93 Fox vehicles that detect mustard gas and nerve agents on the battlefield in less than a second, sounding alarms that give soldiers time to climb into protective suits, masks, boots and gloves. Military units also surround their bases with M8 alarms to detect the presence of nerve agents.

The Pentagon has also recently installed 52 stationary biological sensors called Portal Shield in Qatar, Saudi Arabia, Oman, the United Arab Emirates and Bahrain to complement a mobile biological sensing system towed by a Humvee that is designed to patrol the battlefield and provide early warning of a biological attack.

But unlike chemical sensors, biological sensors take as long as 20 minutes to detect the presence of germ weapons, greatly increasing the risk that soldiers would be exposed to biological agents before donning their protective gear. Even the Pentagon's new JSLIST garment and M40 silicone rubber gas mask cannot stop some biological agents and a powdered version of VX nerve agent called "Dusty VX."

One difficulty in assessing the Pentagon's readiness in the chemical and biological arena is that much information about the protective qualities of the new equipment remains classified. Johnson-Winegar declined to discuss whether the military's protective suits would be effective against Dusty VX. "It's classified information," she said, "and it's an operational security concern."

Correction

This article incorrectly said that retired Army Gen. Barry McCaffrey is under contract to brief units likely to deploy to the Persian Gulf for a possible invasion of Iraq. McCaffrey lectures on combat leadership to units throughout the Army at the invitation of commanders.

<http://www.washingtonpost.com/wp-dyn/articles/A55369-2002Nov29.html>

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Global Security Newswire (nti.org)

November 27, 2002

Pentagon Distributes Modeling Software For WMD Attacks

By Bryan Bender, Global Security Newswire

WASHINGTON — The U.S. Defense Department has licensed to a few select nongovernmental organizations previously unavailable software that can model the effects of releases of nuclear, chemical, biological or radiological weapons and materials.

The Heritage Foundation, Natural Resources Defense Council, Stanford University and other institutions have recently gained access to the computer modeling programs (see GSN, June 5). The goal is to educate political leaders and the public about the potential consequences of weapons of mass destruction whether they are used by terrorists or by a state in conflict with the United States. Furthermore, defense officials have said that they benefit from the independent analysis by nongovernmental organizations.

The modeling programs — the Hazard Prediction and Assessment Capability (HPAC) and the Consequences Assessment Tool Set (CATS) — are both capable of calculating the outcome of thousands of possible scenarios involving a variety of weapons and materials. The models can determine the human medical effects, toxicity levels, contaminated areas, population exposure, hazard areas and casualties should WMD materials be unleashed in an attack or dispersed in a military strike or by accident (see GSN, Feb. 12)

Both programs were developed under the auspices of the Defense Threat Reduction Agency after the 1991 Gulf War, in which "predictions of the collateral effects of potential weapons of mass destruction use were inefficient and untimely," according to the agency.

HPAC and CATS can predict the dispersal and effects of nuclear, biological, chemical and radiological hazards. The sophistication of the predictions is derived in part from the software's ability to consider different levels of purity for a variety of deadly materials. For example, a WMD agent can be modeled as having 0.001 percent purity up to 100 percent purity — for materials ranging from VX nerve gas to anthrax.

HPAC "provides the means to accurately predict the effects of hazardous material releases into the atmosphere and its impact on civilian and military populations," according to DTRA. "It models nuclear, biological, chemical, radiological and high explosive collateral effects resulting from the conventional weapon strikes against enemy weapons of mass destruction production and storage facilities."

"The HPAC system also predicts downwind hazard areas resulting from a nuclear weapon strike or reactor accident and has the capability to model nuclear, chemical and biological weapon strikes or accidental releases," the agency states in a project summary. HPAC can also predict missile intercepts and the consequences for the people and environment near the interception point.

The simulations rely on historical weather data, forecast weather, current observations and particle transport predictions, according to a recent briefing by Navy Cmdr. Julia Spinelli, HPAC meteorologist at DTRA. She cautioned, however, that "prediction uncertainty" remains no matter how accurate the data used by the software.

CATS, meanwhile, is tailored for scenarios in North America. It "assesses the consequences of technological and natural disasters to population, resources and infrastructure," according to Science Applications International Corp., which designed the system for DTRA.

Officials who know about the software have said CATS more commonly predicts domestic terror threats such as environmental damage from WMD materials released near U.S. borders or a chemical or nuclear plant attacked by terrorists.

An Educational Tool

As the military has distributed the programs to military bases around the world as well as to local and state law enforcement, emergency response, environmental and other relevant agencies, it has decided that the academic community would also benefit.

"HPAC is available by license from the Defense Threat Reduction Agency to the U.S. government, government contractors and educational institutions for noncommercial research," according to DTRA's Web site. "Approval will be granted on a case by case basis," the site says.

Officials said a government sponsor is required for an organization to receive the software models — the U.S. Senate sponsored Heritage — which include not only the software, but also a computer link into the DTRA network, which provides much of the modeling data.

"I ask 'what are you going to do with this, why do you need this and we go from there,'" Lt. Col. Todd Hann, HPAC program manager at DTRA, told Global Security Newswire. "We scrutinize it," he said, adding that the government is selective about releasing the software because of its sensitivity and the government's desire to benefit from the academic institution's work.

A primary rationale for releasing it to academic institutions is for educational purposes, by expanding the public policy debate over the threat of weapons of mass destruction through the introduction of more science — while also demystifying the subject for some.

"Education is a big part of it," said Dexter Ingram, threat assessment specialist at the Heritage Foundation and a former naval flight officer who prepared nuclear contingency plans. "It is easy for people to be scared and not want to go to populated events. We want to make the sure the terrorists aren't winning and people are educated about the threat."

One example, Ingram said, of where the modeling tools have proven helpful is to infuse realism into the debate over radiological dispersal devices, or dirty bombs. Heritage has briefed lawmakers and others on the dirty bomb threat, concluding that in most scenarios the damage inflicted would be minimal, he said.

"So it's not all doom and gloom," Ingram said. "We're not looking to scare people," but to provide them with more of the facts, he added.

The HPAC code is "used for doing independent study of incidents in which a decision maker will need to know some information to make an educated decision," Hann said.

At the same time, he added that "we usually we get something back from [releasing it]. We benefit from some of the analysis."

Some Scenarios

The software has its roots in the Gulf War, where the threat of chemical and biological weapons — as well as the environmental hazard posed by oil fires — were much on the minds of U.S. military planners. According to DTRA, "Operation Desert Storm illustrated the need for an automated hazard prediction tool."

The HPAC software has been widely used by the military in the subsequent decade, at the 1996 Summer Olympic Games, the 2001 presidential inauguration, the 1997 Group of Eight Summit and in the aftermath of the Sept. 11 terrorist attacks in New York and Washington.

It is currently being used to model a possible war with Iraq and the likely dire consequences if weapons of mass destruction were used in the region.

Matthew McKinzie, a physicist with the Natural Resources Defense Council, has used HPAC to model the effects of chemical-filled Iraqi artillery shells being fired on advancing U.S. troops.

In the course of a U.S. bombardment of suspected Iraqi biological weapons facilities, he has simulated the release of biological agents into the atmosphere. Depending on the location of the facility and the weather pattern, such a release could lead to numerous civilian casualties, he found.

Meanwhile, he concluded that there is a looming risk that Israel could retaliate with nuclear weapons if attacked by Iraq with a weapon of mass destruction.

Ingram has used HPAC to predict that if a 450-kilogram missile tipped with VX nerve gas were launched by Iraq at Tel Aviv under normal conditions, it would kill 43,000 people and injure 38,000. He also found that if an Iraqi al-Hussein missile was intercepted by Israel it would probably fall on the territory of Jordan.

As for other scenarios, Ingram said HPAC has been used to model the potential consequences of a nuclear exchange between India and Pakistan. Most of the fallout comes back over India.

http://www.nti.org/d_newswire/issues/newswires/2002_11_27.html#3

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Jane's Defence Weekly
December 4, 2002

US Air Force Set To Acquire Chem-Bio 'Agent Defeat' Weapons Soon

By Michael Sirak, JDW Staff Reporter, Washington, DC

The US Air Force (USAF) may have at its disposal by the end of this year a limited number of 'agent defeat' weapons that are designed to neutralise stores of chemical and biological (chem-bio) weapons agents that countries like Iraq are believed to possess (*Jane's Defence Weekly* 18 September).

"We should be fielding the weapon early next year in the February or March timeframe," said USAF Col Bob Grosvenor, aircraft division chief at the service's Air Combat Command, on 20 November. "A few of them may be delivered before the end of this year."

The weapon, Col Grosvenor said, uses "a [Wind-Corrected Munitions] Dispenser that has a series of almost 4,000 penetrating rods of titanium".

Like other 'agent defeat' weapons under development, he said the goal of the weapon is to neutralise the chem-bio agents *in situ* without dispersing them into the atmosphere where they could endanger friendly forces and civilian populations. Overall, Col Grosvenor said, the USAF expects to procure 250 units of the weapon "over a very short acquisition programme".

The USAF is pursuing three 'agent defeat' concepts overall, he said, declining to elaborate.

The US Defense Threat Reduction Agency and US Navy are also involved in an advanced concept technology demonstration of an 'agent defeat' weapon that uses a high-temperature incendiary 'thermo-corrosive' filling, along with penetrating rods.

They intend to produce eight weapons by Fiscal Year 2004 for flight tests and validation and produce an additional 20 for operational use.

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Chicago Tribune
December 1, 2002

Senator Sets Sights On Old Russia Arms

Lugar Wants Focus On Disposal Effort

By Stephen J. Hedges, Washington Bureau

With his return as the chairman of the Senate Foreign Relations Committee, Indiana Republican Richard Lugar plans to redirect attention to a \$1 billion-a-year program to help Russia secure and dispose of huge quantities of Cold War nuclear, chemical and biological weapons.

During his second tenure, Lugar will have an important voice in the debate over how the nation fights terrorism and on a future conflict with Iraq. The focus on Russia's decaying nuclear arsenal will be a significant area in the effort to keep terrorists from acquiring mass-murder weapons.

"The greatest crisis is terrorists getting their hands on weapons of mass destruction," said Lugar, an independent-minded Republican who also chaired the committee from 1985-86.

"We ought to identify which countries have weapons of mass destruction, and as an international community, we ought to make sure that these countries have the means to make this material secure."

Known colloquially as Nunn-Lugar, after Lugar and former Sen. Sam Nunn (D-Ga.), the effort to secure and destroy a large share of Russia's weapons has been hobbled in recent years by cost overruns, critical government audits and doubts from powerful conservatives, including some within the Bush administration.

Critics argue that the initiative, carried out largely during the presidency of Bill Clinton, simply modernizes and does not reduce Russia's weapons capability. Influential voices within the administration have questioned the wisdom of the aid to Russia.

"We need to be aware of the fact that Russia, in particular, claims to lack the financial resources to eliminate weapons of mass destruction but continues to invest scarce resources in the development of newer, more sophisticated [intercontinental ballistic missiles] and other weapons," said Defense Secretary Donald Rumsfeld.

Even the Sept. 11 attacks, which underscored the potential danger if terrorists obtained nuclear weapons or uranium for a radioactive "dirty" bomb, did not fully revive concerns over Russia's aging stockpiles, according to proliferation and foreign policy experts.

Power of the chair

To that end, they view Lugar's new committee chairmanship as a chance to bring new pressure to bear on the administration on this issue.

"He will serve as both a partner and a critic of the president," said Lee Hamilton, director of the Woodrow Wilson International Center for Scholars and a former Indiana congressman. "He will try to be helpful and constructive in advancing the president's foreign policy agenda. But the role he will play, as the role he has played in Congress, is to not hesitate to be critical of the president when he thinks he can be helpful."

Lugar, 70, was first elected to the Senate in 1976 and has become one of its steadying voices, though not always one that toes the party line. He made an unsuccessful bid for the Republican presidential nomination in 1996, but he survived that defeat no worse for wear in the Senate.

While conservative on many issues, Lugar has broken with the party on environmental issues and gun control. He revealed himself as an activist Foreign Relations Committee chairman during his first tenure, pressing for the Philippine elections that would mark an end to the rule of dictator Ferdinand Marcos, a longtime U.S. ally. He also helped usher in a Senate vote on an end to apartheid rule in South Africa. And he played central roles in Senate ratification of the START 1, START 2 and INF Treaties, as well as the Chemical Weapons Convention and the expansion of NATO.

But he is best-known for the program he and Nunn pressed through Congress in 1991.

That act created the Pentagon's Office of Cooperative Threat Reduction, the foundation for an array of efforts within the Defense and Energy Departments to help Russia dismantle its nuclear weapons; dispose of, store or blend down uranium and plutonium; and destroy the missiles, submarines and bombers that could deliver the deadly weapons.

Nuclear arms scattered widely

The collapse of the Soviet Union left nearly 30,000 nuclear weapons spread mostly across the four nations of Russia, Ukraine, Kazakhstan and Belarus. U.S. diplomacy and money persuaded Kazakhstan, Belarus and Ukraine to ship hundreds of missiles and warheads back to Russia, where they could be disposed of more readily.

Controversial from the start, the program won congressional backing chiefly because Lugar and Nunn were viewed as respected, moderate voices in the Senate.

Bipartisan lectern-pounding

The senators argued that it was essential to offer Russia help when it was most likely to accept it, just as the Soviet Union was crumbling and lacked the financial and scientific means to maintain its nuclear inventories.

Nunn and Lugar, as well as a number of proliferation experts, also feared that Russian black market or mob opportunists might acquire and then peddle nuclear material to any and all comers, a possibility the Sept. 11 attacks drove home.

"I don't think it [Sept. 11] increased the threat," said Nunn, who has become chief executive officer of the Nuclear Threat Initiative, a non-proliferation group.

"I think it made millions of people and lots of policymakers aware of a threat that had been there for a number of years and had been growing."

In 10 years, the U.S. has helped Russia dismantle more than 5,990 nuclear weapons, more than 1,200 missiles, 97 bombers, and a number of launchers and other arms. The overall aid effort also has expanded to include the conversion of Russian nuclear sites to peaceful uses, retraining an estimated 7,000 scientists and tightening security around hundreds of often poorly guarded facilities.

By 2007, the Nunn-Lugar initiative calls for the elimination of nearly 9,900 nuclear warheads, more than 2,000 missiles, 1,400 launchers and silos, 131 bombers, and 41 nuclear submarines.

Some programs, such as the construction of a plutonium storage center at Mayak, a central Russian city in the Ural Mountains, have wildly exceeded their budgets. Mayak originally was estimated to cost \$500million, with the U.S. and Russia each paying half. Today, the cost is expected to top \$1 billion, and Russia has paid just a fraction of its share.

Price of safety

Lugar acknowledges those overruns and the criticism they have drawn. But he argues that there is nothing simple or cheap about protecting plutonium in a remote corner of Russia.

"This is not an easy place to build secure storage for up to 6,000 warheads' worth of plutonium," he said. "The hazards of simply getting the plutonium there--the safety of the rail car and the trestles--is no mean feat.

"On the other hand, the failure to do that creates just what I'm talking about: the potential for proliferation."

When President Bush took office, he ordered a review of Nunn-Lugar and other Russian nuclear assistance programs. Before the review even was complete, the White House had identified \$100 million in aid that it wanted to cut. However, after Sept. 11, the administration added about \$300 million to the program, bringing its cost to more than \$1 billion a year.

Sept. 11 opens eyes

"Sept. 11 came along, and all of a sudden the light dawned on [the administration] that this was a significant counterterrorism effort," said Rose Gottemoeller, who helped direct the Russian security work during the Clinton years. "For that reason, they began to change their views rather quickly."

Lugar said he recently discussed the programs with Bush and received waivers to allow funding the clean-up at the Shchuchye chemical weapons facility, which contains 1.9 million shells and warheads. Such waivers, he said, are a sign that the administration's backing of Nunn-Lugar is growing.

"No doubt about it," Lugar maintained, "the administration has become very, very strongly supportive."

<http://www.chicagotribune.com/news/nationworld/chi-0212010472dec01.story>

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Newsweek

December 9, 2002

The Secrets Of Dr. Germ

U.N. inspectors have begun searching Iraqi weapons sites. But what happens when they investigate the scientists? The 'human factor' could be a trigger to war

By Christopher Dickey and Colin Soloway

The machines were rusting, the laboratory equipment broken or missing, the offices empty. The Al Dawrah Foot and Mouth Disease Vaccine Production Laboratory, which used to brew quantities of deadly Botulinum toxin, was among the United Nations inspectors' first stops when they fanned out last week in search of Saddam Hussein's secret weapons. And the plant's former director, Mantasser Omar Abdel-Aziz, exulted in its emptiness. "Nobody can do anything here," he said, inviting reporters to tour the defunct facility. No sign of weapons, so no need for the Bush administration to make good on its threat of war to disarm Iraq. "It is very good cooperation," said Abdel-Aziz.

But as the United States continues deploying its combat-ready forces to the region, there's very little hope—or expectation—that sort of cooperation will last. And there is a widespread belief among Western intelligence and diplomatic sources that the showdown will come soon, when inspectors shift their focus away from meticulously abandoned factories to go after not just hardware or weapons or even "presidential sites," but the human factor: the brains behind the weapons. That's when Saddam is most likely to balk, according to U.S. and other intelligence sources, thus triggering war. "The real disarmament is removing the people who can reconstitute the programs," explains Khidir Hamza, formerly a leading nuclear scientist in Iraq and .who is now in exile. "What he cannot replace is a scientist who leaves." And Saddam knows it. "The fear is that if [the United Nations] asks them out, they are all going to defect," Hamza told NEWSWEEK.

Already there are unconfirmed reports that some scientists or their families are interned in special camps. The reputed founder of Iraq's bioweapons program, Abdul Nasser Hindawi, was jailed in 1998 for allegedly trying to defect. And the most famous of all, the woman known as Dr. Germ, Rihab Taha, is supposed to have retired. But the human shell game Saddam has played with his scientists in the past is his most complex gambit. Former inspectors know he created a complex web of lies and fictional relationships to deceive them.

For the moment, inspection chief Hans Blix is handling the human factor as delicately as possible. Paragraph 5 of the U.N. resolution specifically orders Saddam to give the inspectors "immediate, unimpeded, unrestricted, and private access to all officials and other persons [they] wish to interview in the mode or location of [their] choice." The resolution says inspectors can conduct those interviews outside Iraq, and they're explicitly authorized to help the people they want to question—and their families—to leave the country. Blix downplayed such possibilities in an interview with CNN last week. "What if the Iraqis stop it? We cannot force it," he said. "We are not an army." But the hundreds of thousands of American soldiers beginning to assemble on Iraq's periphery certainly are.

The biological-weapons program has always been Saddam's most closely guarded secret. Germs like anthrax and smallpox, and toxins such as Botulinum, provide the perfect portable weapons of mass destruction—just the kinds of

devices the Bush administration fears could be given to terrorists. Iraq has admitted to having produced 30 tons of germs and toxins that it never turned over to the United Nations. One key figure in the program and a potential source of vital information, even if she is sitting at home today, is Taha. A stern-faced 46-year-old microbiologist with salt-and-pepper hair, she's remembered as a less-than-brilliant student by her professors at the British university where she did graduate work. But Taha has achieved a kind of mythical status in the realms of literature written about Saddam's weapons. Inspectors called her Dr. Germ. Fleet Street has dubbed her Dr. Death, even Toxic Taha.

"I first met her in New York in late 1992 or early 1993," says Rolf Ekeus, who headed the U.N. inspection effort until 1997. Several Iraqi officials had been invited to explain their research efforts, and Taha was among them. "She was very, very smart," Ekeus recalls. "She made a big show on a blackboard of how much she could have produced with what she had, and it was only a few grams."

So persuasive was Taha, in fact, and so thin was the available evidence, that Ekeus says he was "quite skeptical about the existence of a biological program." Then the U.N. scientists crunched Taha's numbers, and confronted her with their findings at the next meeting in Baghdad. "She made a big scene, crying and slamming down her fists and running out the door and slamming it," the courtly Swedish diplomat recalls. "The other Iraqis looked at us like we were not gentlemen."

One inspector in particular was sure that Taha was lying. A French lawyer named Annick Paul-Henriot had come onboard in late 1993. "She was fantastic," Ekeus remembers. "Annick was insistent. She gave me no peace."

Though not a scientist, Paul-Henriot organized some of the best, among them former U.S. Army bioweapons expert Richard Spertzel as chief biologist. They developed a methodical program to expose Taha's lies.

The key was "growth media," much the same as agar used in the petri dishes of a high-school biology class. Placed in fermenters with a culture of anthrax, it can be used to create massive quantities of one of the deadliest substances on earth. Israeli intelligence had provided specific data on how much Iraq had acquired, and Paul-Henriot insisted every bit of it be accounted for. The invoices provided by Iraq's Health Ministry were at least 10 times the actual need for hospitals and conventional labs. But when Ekeus confronted Deputy Prime Minister Tariq Aziz over the issue, Aziz smoothly suggested an inept civil servant had made the mistake of ordering too much. "Annick understood they were hiding something," said Ekeus, and she kept up the pressure. But the hard-driving Frenchwoman wore a pacemaker and was in much more fragile health than any of her colleagues realized. "She died suddenly," said Ekeus. "It was a terrible shock."

By then, however, Paul-Henriot's team was dogging Taha's steps. Another inspector, a German bioweapons expert named Gabrielle Kraatz-Wadsack, toured the seven-square-kilometer Al Hakam facility south of Baghdad where Taha was supposed to be in charge. The ostensible purpose of the plant was to grow single-cell proteins as additives for chicken feed. Kraatz-Wadsack spotted only three chickens (where there ought to have been hundreds), noticed military guards and a double-thick fence, realized that the fermenters were much too small for their supposed purpose—and concluded that the facility would be just perfect for growing biological weapons.

In April 1995, Ekeus reported to the U.N. Security Council that Iraq had developed a biological-weapons program. In August 1995, Saddam's son-in-law Hussein Kamel, who oversaw all of Iraq's weapons programs, suddenly defected to Jordan. Over the next several weeks, until Kamel made the fatal mistake of returning to Iraq, inspectors debriefed him extensively. Now—they had all the proof they needed that the weapons program existed.

Kraatz-Wadsack visited Al Hakam again and listened as Taha, this time, explained matter-of-factly how she had supervised the production of more than 8,000 liters (2,000 gallons) of anthrax spores, and 19,000 liters (9,500 gallons) of Botulinum toxin for the Iraqi weapons program—enough deadly germs to kill millions of people. "It was a strange feeling when she was admitting she did all the production," recalled Kraatz-Wadsack. "She was smiling, a nice person. You had the sense she was proud that she had done what no one imagined she could do. She was just as pleasant telling us how she did all this, where things were stored, as she was when she was lying to us about the single-cell proteins."

But is Rihab Taha the banal genius of evil behind the biological-weapons program? Or was there someone else? Former inspectors interviewed by NEWSWEEK said they thought she was a front. "I always had the impression we never met the person who was really in charge," said chief biologist Spertzel. No inspector was sure who that was—or is. But they look to Taha's superiors and most intimate colleagues as possible candidates.

One is Abdul Nasser Hindawi, who may have recruited Taha even before she was sent to England to study in 1979. Hindawi supposedly authored a paper that persuaded Saddam to invest heavily in bioweapons development. Among his arguments: the relatively low cost of wiping out Israel. Although Hindawi's information would not be up to date (he was jailed four years ago), he could be a source of vital history if inspectors can find him, and if he is still alive. Spertzel thinks another scientist may be very important now. Huda Amash, dean of the University of Baghdad's College of Science, is the only female named to the inner circle of Saddam's political elite, the Revolutionary

Command Council. Former inspectors vividly remember trying to chase her down in 1997. Amash was “never where she was supposed to be,” says Spertzel. During one visit to the College of Science, an inspector spotted a “student” dressed in lab coat and goggles who looked suspiciously like Amash—and was. After an extensive search of the lab, the inspectors found equipment and reagents that Amash had brought back from her travels abroad. The man who headed the virus program in 1990, Hazem Ali, may also be of central importance now, says Spertzel. In March 1997, Ali left his position at the Razi Research Institute. He said he was taking a position as an instructor at Baghdad University’s College of Veterinary Medicine, but when inspectors went to interview him there, employees at one point said he wasn’t on the faculty, Spertzel recalls. Then the Iraqi government told inspectors that Ali had taken a teaching post at the university’s College of Medicine. Another lie. Other suspected masterminds may be hiding in plain sight. A key supervisor of Taha’s at one point was Amer Saadi, a London University-trained engineer who later rose to become a major general and head of the Military Industrialization Commission, which oversees all of Iraq’s weapons programs. Saadi is now one of the senior Iraqi officials in charge of relations with U.N. weapons inspectors. In 1993, the head of the MIC was Gen. Amer Rashid, who led the delegation to New York that included Taha. Although married with a 6-year-old son at the time, Rashid began an affair with Dr. Germ while at the United Nations for meetings with Ekeus. Taha became pregnant, and when her daughter Huda was born in 1994, the couple married. Rashid went on to become Iraq’s minister of Oil, and may also have been in charge of weapons of mass destruction. He’s another prime target for interrogation. As for Taha herself, Spertzel believes she’s a full-time housewife these days. Or is she? “You wouldn’t want to make her mad,” says Ekeus, the former inspection chief. “With this wife, you would want to be cautious with your morning coffee. She has all the poisons at her disposal.” As does Saddam, for the moment.

With Rod Nordland in Amman and Dan Blumenthal in New York

<http://www.msnbc.com/news/841754.asp>

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London Times
November 29, 2002

Saddam Hides Arsenal In People's Homes

By Michael Evans

Saddam Hussein has ordered hundreds of his officials to conceal weapons of mass destruction components in their homes to evade the prying eyes of the United Nations inspectors.

According to a stream of intelligence now emerging from inside Iraq, the full extent of the Iraqi leader’s deception operation is now becoming apparent. As the UN inspectors knock on the doors of the major military sites in Iraq, suspected of housing chemical and biological weapons and banned missiles, the bulk of the evidence is being secreted away in people’s homes.

The evidence of this latest concealment ploy is judged to be so damning that President Bush and Tony Blair are considering making a personal appeal to the Iraqi officials involved to let the inspectors know what is going on. Intelligence picked up from within Iraq and from electronic intercepts of Iraqi communications has revealed that scientists, civil servants and Baath Party officials have all been ordered to store key components of Saddam’s secret weapons of mass destruction programme in their homes.

Iraqi farmers have also been ordered to play their part, according to intelligence sources. One source said that farmers were being told to hide drums of chemicals among stocks of pesticides.

In each case, the scientists, officials and farmers are being warned that they and their families will face severe penalties if they fail to hide these stocks of chemicals and biological materials from prying UN inspectors.

Computers and laptops containing vital information about the weapons of mass destruction programme are also being hidden in people’s homes.

The intelligence sources said that UN inspectors were aware of what American and other Western agencies were uncovering. However, it made their job almost impossible because they would have no idea where to start if they had to search individual homes.

The inspectors, however, do have the power under the Security Council resolution to seek interviews with individual officials and scientists suspected of having information about the weapons of mass destruction programme.

A senior Whitehall official said Mr Blair was considering reminding people in Iraq that they all had the same obligations as their leader to be open with the UN inspectors. It is hoped that at least some of those ordered to hide evidence in their homes might have the courage to come forward.

Apart from the evidence of deception, the latest intelligence has also uncovered a totally different mood in Iraq from the lead-up to the 1991 Gulf War. Then, there was little or no evidence that the people of Iraq were opposed to Saddam. Now, however, there are signs of a growing disaffection. One intelligence source said that at this stage the mood of discontent was only "simmering" because the Iraqi people knew that if "they put their heads above the parapet they and their families would face the consequences".

However, the intelligence material emerging in recent weeks has uncovered a number of startling facts. First, Saddam has been sufficiently worried about potential internal opposition to his regime to take the extraordinary step of canvassing opinion in all the key cities. Intelligence sources say that Kurds have been used to carry out the survey.

The answers coming back from the quasi-opinion poll, had given strong indications that people were looking towards a post-Saddam era and wondering whether it would improve their standard of living. To counter this, Saddam's regime has begun circulating rumours in Iraq that even if he were to fall from power, there would be no lifting of sanctions.

One intelligence source said the very fact that Saddam had felt it necessary to check the opinions of Iraqi people was one of the most surprising pieces of information to come out of Baghdad in recent weeks. One piece of feedback from the survey was that people were worried that if Saddam were toppled, Iraq would split up as a country. The first sign of possible internal dissent came during the referendum in Iraq last month when Saddam was supposedly given a 100 per cent "yes" vote for continuing in office. Baghdad claimed it was also a 100 per cent turnout.

However, intelligence emerging since then has revealed that only one in three people actually voted.

Second, as a sign of Saddam's unease over the loyalty of his officials in Baghdad, he has begun handing out cars to everyone to keep them happy. The intelligence sources said senior officials were being given Toyota Avalons and junior officials South Korean-made Kias.

Third, Iraqi troops are now being required to go through the equivalent of the British system of positive vetting every three months to test their loyalties to Saddam. Security officials have been ordered to investigate each individual and his family.

Loyalties are thought to be near breaking-point in some of the more far-flung towns and cities, where there is evidence that troops and police are either not being paid or are receiving subsistence salaries.

One piece of intelligence revealed that in the town of Dahuk in northern Iraq, close to the Turkish border, the police had not been paid since September. Iraqi soldiers based at two barracks in Dahuk were also being paid far less than the average wage in Iraq. Fourth, Saddam who is not known to be a very religious person, has ordered his officials to spread rumours that the Americans want to invade Iraq in order to convert everyone to Christianity. He has also written a prayer.

The assessment of all the latest intelligence is that although cracks are now beginning to appear in the support for Saddam, it will have little impact on the Iraqi leader himself. It is believed he will never give up his weapons of mass destruction because they represent the means by which he can keep his people cowed.

<http://www.timesonline.co.uk/printFriendly/0,,1-3-496333,00.html>

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New York Times
November 30, 2002

U.N. Agency Demands North Korea End Atomic Program

By Serge Schmemmann

UNITED NATIONS, Nov. 29 — The International Atomic Energy Agency called on North Korea today to abandon any nuclear weapons program it had and to accept international inspections.

The demand by the agency, the nuclear-monitoring arm of the United Nations, was issued in a resolution of its full 35-member board. It was the board's first meeting since North Korea admitted to an American envoy in October that it was conducting a clandestine program to enrich uranium for nuclear weapons.

Since then, North Korea has defied requests from the agency and from other groups and governments for more information.

Instead, North Korea declared last month that "to safeguard our sovereignty and right to exist," it regarded itself entitled to have "powerful military countermeasures, including nuclear weapons."

Although the agency has issued previous calls for North Korea to accept its inspections, the resolution today was apparently the first time it has explicitly demanded that North Korea scrap its entire nuclear weapons program. But the agency has no enforcement powers beyond reporting violations to the Security Council, and the resolution set no deadline.

The statement declared that North Korea's claim that it was entitled to nuclear weapons violated its agreements under the Nuclear Nonproliferation Treaty, and it urged North Korea "to give up any nuclear weapons program, expeditiously and in a verifiable manner."

At a news conference in Vienna, the Atomic Energy Agency's director, Mohamed ElBaradei, said the agency wanted North Korea to "accept without delay" the dispatch of a senior team of inspectors to North Korea. He said the resolution of the board of directors was a "clear message from the international community that North Korea has to honor its international obligations."

North Korea pursued an aggressive nuclear weapons program in the 1980's and 1990's, which led to a major confrontation with the Clinton administration. Tensions were defused through an "agreed framework" negotiated in 1994, under which North Korea agreed to halt the program in exchange for the supply of fuel oil and nuclear generators of a kind less prone to nuclear proliferation from the United States, Japan and South Korea. That agreement has now been suspended.

Early in October, confronted by American intelligence evidence indicating that a secret project was under way, North Korea abruptly acknowledged the program. Why the North Koreans made the admission remains unclear, but one line of speculation is that they hope to use the nuclear capability as a bargaining lever, as they did in 1994. Although President Bush has included North Korea in an "axis of evil" along with Iraq and Iran, his administration has made no concrete steps so far to compel North Korea to dismantle its nuclear program.

The United Nations nuclear agency's inspections inside North Korea have been restricted by the country since 1993, when inspectors reported evidence of noncompliance with the Nuclear Nonproliferation Treaty.

North Korea withdrew from the agency, which is charged with policing the treaty, although the country remains bound by the treaty. Since then, the agency has been limited to monitoring North Korea's graphite-moderated reactor as part of the 1994 agreed framework.

<http://www.nytimes.com/2002/11/30/international/asia/30NKOR.html>

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Economist

November 30, 2002

Biological terrorism

The Spores Of War

The world has only just woken up to the threat of bioterrorism. And only America has yet done much to prepare for it

SAN FRANCISCO -- Six days before the terrorist attacks of September 11th last year, Joseph Biden of Delaware told Senate hearings that the threat of biological attack on America dwarfed the dangers posed by missiles. Shortly afterwards, his colleagues Thomas Daschle and Patrick Leahy, along with various journalists, were the targets of just such an attack, when letters containing anthrax spores were delivered to their offices through the ordinary post. Five people died after exposure to spores that had leaked from the envelopes, scores more were infected, and strong antibiotics were pumped into thousands who might have been exposed.

Biological weapons—whether the sophisticated products of a national military programme, or the crude poisons of a biological Unabomber—sit at the lower end of a spectrum of biological threats to health. At the higher end sit naturally occurring epidemics of familiar diseases such as influenza, which still sweeps the world each year, and AIDS, which has so far killed 22m people. In between lie re-emerging and previously unidentified diseases, such as ebola or West Nile virus; industrial accidents or sabotage, by which bugs get out of laboratories; and growing resistance to antibiotics. On November 12th, a hospital in Detroit reported the first American case of staphylococcus (a potentially deadly infection) that is resistant to vancomycin, the strongest antibiotic in doctors' arsenals.

Compared with all these, biological weapons are a much more unlikely danger. Nor are they always simple to use.

Aum Shinrikyo, a Japanese cult that carried out an attack with sarin nerve-gas on the Tokyo underground in 1995,

had earlier experimented with anthrax, to little effect. The anthrax spores sent through the mail in America were a much more virulent strain and were finely milled, making it easier for them to penetrate the lungs of their victims. Prevailing weather conditions, such as wind speed, can interfere with the most diabolical planning. Nonetheless, bioweapons have a fearful potential that has long been understood, ever since plague-ridden corpses were catapulted into the besieged city of Caffa by Tartars in 1346. Modern biological agents are far more lethal than even the most toxic chemical agents. In the 20th century most of the large military powers developed biological weapons, but moral repugnance and doubts about their military value largely kept countries from using them against each other.

This reluctance was formalised in the Geneva Protocol of 1925 and a Biological Weapons Convention signed in 1975, after America had renounced its programme, but as many as 17 countries are thought to have kept up some sort of capability. Troublingly, all seven countries on America's list of states that sponsor terrorism—Cuba, Iran, Iraq, Libya, North Korea, Sudan and Syria—are among the suspected dabblers. So far, none of the regimes thought to possess them is known to have passed on bioweapons to a terrorist group, though no one really knows. When the UN weapons inspectors were thrown out of Iraq in 1998, they had already destroyed thousands of litres of anthrax and other germ agents; but a whopping 17 tonnes of imported medium for growing germs were still unaccounted for. Iraq is since thought to have developed mobile germ laboratories, with others concealed under hospitals and private homes. It is also known to have adapted crop-sprayers to spread biological agents, and to have experimented not just with bacteria but with viruses, such as camel pox. It may (along with North Korea) have stocks of the smallpox virus.

Smallpox merits particular attention because it is the only disease that has ever been eradicated in nature. The last case was in 1979, and most people are now “immunologically naive”—as vulnerable to infection as America's Indians were to the poxes of the old world. America and Russia agreed to keep samples for research, and a few rogue regimes are thought by the CIA to have kept them for use as weapons.

“Dark Winter”, a government study completed in June 2001 that modelled the effects of a smallpox attack on three American cities, concluded that within two months there would be 1m dead and twice as many infected. America has rapidly secured enough doses of vaccine to inoculate the entire country and now wonders whether to do so. In the next few weeks, President George Bush is expected to announce a plan to vaccinate 500,000 health workers, with up to 7m-10m to follow. Other countries, too, are accumulating vaccine and wondering how many to inoculate. In every million people given the smallpox vaccine, two or three may die and hundreds will suffer serious side-effects.

Spotting the symptoms

The anthrax letters sent last year were spotted by a Senate staffer who had recently undergone security retraining. Without such luck, or if an attacker were to release pathogens more surreptitiously, there would be as little immediate sign of an attack as of the arrival of the 'flu season. Early detection is crucial. Guarding places at risk may require devices that continuously monitor the air, sniffing for spores and other particles. Several different research groups are looking for antibodies that bind to the surface of biologically threatening molecules, fitting like a key in a lock, which could be the basis of both detection and treatment.

The more likely first sign of an attack or epidemic, however, will be the eruption of illness in people exposed to it. Spotting such a flare-up is the job of regional public-health offices that monitor reports of unusual symptoms from doctors. If something unusual crops up in the United States, samples are sent to one of the 158,000 state and local laboratories that can do biological culture analysis to identify the disease. The system needs to be expanded to collect other data that could give early warning of something out of the ordinary, such as sales of cold and 'flu medicine in chemists, or calls to emergency services with complaints of respiratory problems. New York has built a network to look out for sudden spikes, but most of the country has made little progress.

In America, the public-health system is anchored in the Centres for Disease Control (CDC) within the Department of Health and Human Services (DHHS). A bioterrorism-preparedness bill passed in the aftermath of the anthrax letters allocated \$1.1 billion to the DHHS, with most of that going to the CDC and the rest to the Health Resources and Services Administration, which oversees hospitals round the country. The money will go towards the regional laboratory system and the health-alert network that allows doctors to communicate news of isolated cases to epidemiologists. Technicians are being trained to recognise unfamiliar pathogens. Hospitals and clinics have been given reference cards listing unusual symptoms and what precautions to take when they appear.

The CDC also manages a national pharmaceutical stockpile. This store of antibiotics, vaccines and other drugs is spread around eight centres to ensure that emergency medical supplies can be rushed to anywhere in America within 12 hours. The stockpile also has a “virtual” component, consisting of arrangements with manufacturers to boost production of particular drugs at short notice.

What goes into the stockpile and what tests the surveillance network can perform depend on research. The National Institute of Allergy and Infectious Diseases, one of the National Institutes of Health, has received the largest budget increase ever to go to one of the institutes. With its \$1.75 billion budget for 2003, the institute plans to spend \$521.1m building new laboratories secure enough to house the most dangerous pathogens. Basic research, including genomic sequencing of agents, will consume \$440.6m. Another \$591.9m will go on discovery and development of drugs, vaccines and diagnostic techniques. Clinical trials—testing these techniques and medicines on people—account for the remaining \$194.3m.

Tangled command chains

The rest of the DHHS money is earmarked for hospital planning. Years of underfunding of public hospitals and the efficiency drives of the private sector mean that hospitals do not have the “surge capacity” to cope even with a heavy 'flu season, let alone a wave of smallpox cases. A report published in October 2000 by the Stimson Centre, a think-tank in Washington, DC, was highly critical of the state of the public-health network. Amy Smithson, its author, argues that the state grants being given out by the CDC still do not reach deeply enough to the local level, where both detection and response first occur.

The interaction between local, state and federal authorities in America becomes even more fraught in an actual emergency, and clear lines of command are only just emerging. The creation of the Department of Homeland Security should consolidate some of the overlapping responsibilities. The CDC has also made an effort to clarify the lines of authority.

Constitutionally, protection of public health is a matter for the states. Some, such as Colorado, had developed bioterrorism plans before September 11th 2001. To encourage the others, and to introduce some consistency across the country, the CDC commissioned the law departments of Georgetown and Johns Hopkins Universities to create a model act designed to give states the necessary powers to detect and contain sudden outbreaks of disease.

The model act includes strict quarantine powers, and establishes the governor's right to declare a state of emergency in which public-health officials gain the authority to order doctors to treat people, and people to accept treatment on pain of arrest. Civil libertarians think these powers are dangerously broad, and should be replaced merely with clear instructions to which the public would probably respond. But widespread panic may make firm orders necessary.

Out of rogue hands

The other vital tactic is to stop terrorists getting hold of the germs to make bioweapons. In the past, extremist “patriot” militias have bought pathogens from commercial laboratory suppliers, and national weapons programmes such as Iraq's have also bought them on the open market. The Bioterrorism Preparedness Act has tightened the regulations for scientists working with a list of 42 “select agents”, which the CDC will update on December 9th. Every place that uses the agents has to compile a complete list of stocks and track everything that is done with them. Terence Taylor, the head of the Washington, DC office of the International Institute for Strategic Studies, argues that this is inadequate. New genetic techniques mean that firms that deal with dangerous organisms can often avoid the effort and expense of shipping select agents by ordering instead two separate kinds of harmless genetic material that can then be combined to make up a dangerous bug. Terrorists might do the same. Unlike the nuclear or even chemical industries, where certain materials or pieces of equipment have narrow military uses and can be controlled, the life sciences deal in raw materials that are widely found in nature.

Industry must therefore take more care to see that its creations are not used to do harm. Taking a lesson from the nuclear industry, which formed a world association after the accidents at Three Mile Island and Chernobyl, the IISS, along with the Chemical and Biological Arms Control Institute in Washington, DC, is designing a charter for the biotechnology industry. The aim is to build a forum in which the industry's leaders can discuss new developments, share information about risks and threats, and agree on a code of practice.

A parallel project at IISS, in collaboration with Lawrence Livermore National Laboratory in California, is considering setting up an expert panel from industry and academia to spot evolving areas of risk in the biological sciences. A research group in Australia, for example, has modified the gene of the bacterium that causes mousepox, a cousin of smallpox, so that the disease is no longer blocked by its vaccine. The American Society of Microbiology, which published the mousepox paper, has introduced a policy of challenging the authors of provocative papers to consider their wider implications.

Plenty of scientists have squared work on bioweapons with their consciences in the past, and 9,000 of them used to work in the Soviet biological weapons programme. Keeping them out of the world's arms bazaars is the task of the International Science and Technology Centre, which was set up to provide non-military opportunities for former Soviet weapons scientists. So far it has spent \$482m, 23% of it on biotechnology projects. The G8 summit earlier this year agreed to step up spending to guard Russia's biological materials and skills, as well as its chemical and nuclear ones.

Unlike the treaties outlawing the spread of nuclear and chemical weapons, the Biological Weapons Convention has no means to check that countries which sign up then keep their promises. As yet, there is no reliable way of doing so. Attention is now concentrated on encouraging governments to beef up national legislation and on strengthening national and international health-surveillance systems. (A new Global Emergency Outbreak Response Fund is being set up under the auspices of the World Health Organisation, but funded in part by the Nuclear Threat Initiative, a private American foundation.) The Australia Group, an informal cartel of like-minded governments that tries to control the trade in dangerous chemicals and pathogens and the equipment to produce them, has recently drawn up tougher export controls, which also cover the transfer of know-how and information. But germs and viruses, as every 'flu outbreak shows, have a way of keeping one jump ahead.

An alphabet of horrors

Scientists divide the biological agents currently considered as potential weapons into three categories:

Category A. These are the most dangerous and the easiest to spread; they produce high rates of death, are likely to cause panic and disruption, and require special preparation by the public-health system. The diseases caused are anthrax, botulism, tularaemia, plague, smallpox and haemorrhagic fever.

Category B agents produce fewer cases of disease in those exposed and have lower death rates, but are still reasonably easy to disseminate. The diseases they cause include some animal infections that can jump to humans, such as glanders, which occurs mainly in horses and donkeys; brucellosis, which causes herbivores to abort; and blights that affect crops.

There is a large overlap between preparing for bioterrorism and guarding against natural outbreaks; foot-and-mouth disease in 2000 did huge economic and social damage in Britain. A draft report on agricultural bioterrorism by America's National Research Council concludes that a terrorist armed with foot-and-mouth or soyabean rust could easily slip into the country undetected.

Category B also includes biological toxins that directly poison a host. Ricin, derived from castor beans, kills within days if swallowed, injected or inhaled. In 1978 Bulgarian agents killed a dissident émigré by using a specially-equipped umbrella to inject a pellet coated with ricin into his leg. Also in Category B are food and water-borne disease agents such as salmonella, E. coli 157 and cholera bacteria.

Category C agents include emerging diseases that could be engineered to make them more suitable for mass dissemination. They are easy to find in some parts of the world, and can cause high rates of disease and death. They include hantavirus, yellow fever and tick-borne encephalitis viruses.

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Biological weapons

Hide And Seek

Remote detection of bioweapons will soon be useful in the event of an attack

A few days after being infected with ebola, patients begin to notice that something is wrong. Headaches, fevers and chills are followed by diarrhoea, vomiting and internal and external bleeding, leading to the death of most of those infected. Other virulent diseases have similar effects; poisonous chemicals can kill even more quickly, although they are not contagious. When grouped with nuclear weapons in the antiseptic abbreviation WMD—weapons of mass destruction—it is easy to forget just how devastatingly nasty biological weapons can be. T.S. Eliot perhaps put it best when he said, “I will show you fear in a handful of dust.”

Secret agents

Until recently, anybody who found a handful of suspect dust could see little more than fear. Identifying exactly which “bioagents”—biological agents such as ebola, anthrax, or harmless bacteria—were in a sample could be done only in a laboratory. A portable bioagent-detection system would thus be a great boon to weapons inspectors.

At the forefront of military research in this area is America's Defence Advanced Research Projects Agency (DARPA). Some of its projects imitate the human immune system so as to create an artificial sensor. Others are based on microchips that amplify the DNA of suspected bioagents and then compare the results with those of known pathogens. Also in development are portable versions of the equipment that is now being used to identify biological weapons in the laboratory.

These systems are speeding up the detection of bioagents in the field. But point detection systems will always be of limited use. They do not help the person using the sensor to avoid the bioagent; and it is hard to inspect a large region. However, technology for detecting bioagents from a distance is now coming into its own.

The first such technology is called hyperspectral imaging. Electrons orbit atomic nuclei at specific distances from the centre of the atom. This means that atoms can absorb light only at certain energies. So when atoms reflect light, there is a characteristic pattern of absorption lines that is specific to any given substance. If this incoming light is then examined, these lines reveal exactly what sort of stuff is being observed. This is the principle behind hyperspectral imaging.

Satellites and aircraft can now gather the necessary high-resolution images of the earth, and analyse the light reflected from the ground. The prodigious computing power that is necessary to analyse data arriving at a rate of 30 megabytes per second has only recently become available. Now that it has, hyperspectral imaging is also becoming a valuable commercial tool. It is already used to prospect for minerals and to check crops for disease from a distance. It can, in theory, also be used by the authorities to search for and identify cannabis or opium crops.

Many companies specialising in hyperspectral imaging have sprung up in the past five years. Some of these, including the Galileo Group, located in Melbourne, Florida, also work for the armed forces. Hyperspectral imaging of visible light can pick out camouflaged man-made objects from surrounding natural ones. In the infra-red, hyperspectral sensors can detect vapours of chemical and biological weapons in the air. Although Michael Barnes, head of Galileo, will not comment on specific military programmes, it seems clear that an aircraft equipped with hyperspectral sensors would be useful for detecting hidden bioweapons laboratories. This would include, for example, the trucks rumoured to be driving around Iraq that may produce inadvertent emissions of trace amounts of bioagents.

Also in development, is another potentially useful technology known as light detection and ranging (LIDAR). LIDAR works in the same way as RADAR, by bouncing radio signals off a target and analysing the results. Because LIDAR works at higher frequencies, the tolerances of the hardware involved must be much more precise. This means that the system is much more difficult to build.

One type of LIDAR—known as differential LIDAR—may be especially suited to detecting biological and chemical agents. It sends out two almost simultaneous pulses of light. Because the two pulses are of slightly different wavelengths, one will be absorbed by bioagents, while the other will not. By measuring the comparative strengths of these reflections, the composition of a cloud of vapour can be worked out. LIDAR has been used in satellites by America's space agency to analyse the atmosphere for such things as ozone depletion. The American armed forces have several LIDAR systems in development and plan to start producing Artemis, a field-deployable LIDAR, in 2005.

Even these increasingly sophisticated systems for distance-sensing, however, have difficulties sorting out the particular signature of bioagents from the background muddle, especially when the concentration of bioagents is small. This problem is being looked at by Michael Sailor and his colleagues at the University of California, San Diego. The team are also working on a "smart dust". This will counter the malignant dust of biological and chemical weapons.

In a paper in the October issue of *Nature Materials*, Dr Sailor describes how to manipulate tiny, micrometre-sized, chips of porous silicon so that they bind to a specific compound, for example sarin gas, a nerve agent. Because their structure is well understood, any change that comes from binding chips to a suspect biological compound can be detected by scanning it with a laser, rather than a bar-code scanner. So far, tests have been made using the laser only a few hundred metres off; but with a higher-powered laser, distances of at least a kilometre should be possible. The technology to detect biological and chemical weapons seems to be progressing to the point when it will soon be able to provide sufficient warning to military forces deployed in the field. Protecting civilian populations requires a substantially different approach. Because so much of the work is classified, though, it is difficult to say to what extent remote sensing might prove useful for detecting bioweapons in hidden laboratories.

For this reason, Trevor Findlay, executive director of the Verification Research, Training and Information Centre, a British think-tank, emphasises that old-fashioned techniques are still more useful to weapons inspectors than high technology. Because a lot of biological equipment is dual-use, there is no substitute for extensive interviews with personnel and systematic tracking of the paper trail. Nevertheless, technologies that are on the verge of being realised may help to show inspectors where to look and, in the dreadful event that biological weapons are actually used, may prove valuable for organising a sound response.

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