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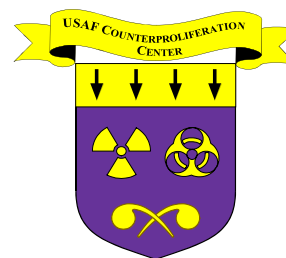
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New York Times  
December 20, 2001  
Pg. 1

## **An Iraqi Defector Tells Of Work On At Least 20 Hidden Weapons Sites**

By Judith Miller

An Iraqi defector who described himself as a civil engineer said he personally worked on renovations of secret facilities for biological, chemical and nuclear weapons in underground wells, private villas and under the Saddam Hussein Hospital in Baghdad as recently as a year ago.

The defector, Adnan Ihsan Saeed al-Haideri, gave details of the projects he said he worked on for President Saddam Hussein's government in an extensive interview last week in Bangkok.

Government experts said yesterday that he had also been interviewed twice by American intelligence officials, who were trying to verify his claims. One of the officials said he thought Mr. Saeed had been taken to a secure location. The experts said his information seemed reliable and significant.

The interview with Mr. Saeed was arranged by the Iraqi National Congress, the main Iraqi opposition group, which seeks the overthrow of Mr. Hussein. If verified, Mr. Saeed's allegations would provide ammunition to officials within the Bush administration who have been arguing that Mr. Hussein should be driven from power partly because of his unwillingness to stop making weapons of mass destruction, despite his pledges to do so.

Mr. Saeed's account gives new clues about the types and possible locations of illegal laboratories, facilities and storage sites that American officials and international inspectors have long suspected Iraq of trying to hide. It also suggests that Baghdad continued renovating and repairing such illegal facilities after barring international inspectors from the country three years ago.

Spokesmen for the Central Intelligence Agency and the Defense Department's Defense Intelligence Agency declined to comment about Mr. Saeed or whether they had interviewed him.

Charles Duelfer, the former deputy chairman of the United Nations panel once responsible for weapons inspections in Iraq, said that Mr. Saeed's account was consistent with other reports that continue to emerge from Iraq about prohibited weapons activities. "The evidence shows that Iraq has not given up its desire for weapons of mass destruction," said Mr. Duelfer, who was the highest-ranking American on the United Nations panel.

### **Evading Restrictions**

In the interview, Mr. Saeed said Iraq had used companies to purchase equipment with United Nations blessing, and then secretly used the equipment in its unconventional weapons program. One such firm, he said, was Leycochem, a construction materials company based in Cologne, Germany, that has long done business in Baghdad and other Middle Eastern countries.

In a telephone interview today, Jürgen Leyde, the managing director of Leycochem, said that his limited contracts with the Iraqi ministries of oil and industry have nothing to do with unconventional weapons and had been approved by the United Nations.

Separately, Mr. Saeed had told representatives of the Iraqi National Congress, which helped Mr. Saeed flee Iraq last August, that Iraq had tested chemicals and biological agents on Shiite and Kurdish prisoners in 1989 and 1992 at undisclosed sites in the Iraqi desert.

Mr. Saeed said that his work for the government's Military Industrialization Organization and for a company associated with it, Al Fao, continued until just before he was arrested on what he called trumped-up fraud charges and imprisoned last January in Hakamiya, where political prisoners are held. He said that he bribed his way out of jail last summer and fled Iraq after receiving a tip that he would soon be re-arrested.

To support his account, Mr. Saeed provided copies of contracts, including one involving his company, the Iraqi industrialization group and Al Fao.

Mr. Saeed said that several of the production and storage facilities were hidden in the rear of government companies and private villas in residential areas, or underground in what were built to look like water wells which are lined with lead-filled concrete and contain no water. He said that he was shown biological materials from a laboratory that was underneath Saddam Hussein Hospital, the largest hospital in Baghdad.

Mr. Saeed said that he had not personally visited the lab and was not certain whether it was a storage facility for germs and other materials to be used in the program or a place where actual research and development was conducted.

"They brought me this material to ask me whether or not it had expired," he said. The Iraqis and another contractor who brought him the material to examine "told me where, and the conditions under which it was stored, and asked me to tell them whether it might still be good, even though it had been kept beyond the expiration date."

### **Visits to 20 Sites**

He said, however, that he had personally visited at least 20 different sites that he believed to have been associated with Iraq's chemical or biological weapons programs, based on the characteristics of the rooms or storage areas and what he had been told about them during his work. Among them were what he described as the "clean room" of a biological facility in 1998 in a residential area known as Al Qrayat.

Most of the time, he said, no research or development was going on at those places while he visited, because his work involved preparing the rooms to be used for such dangerous research. Mr. Saeed said that his company had specialized in filling cement cracks in the floors and walls of such facilities, lining their floors and walls with layers of epoxy paste and other substances that would prevent leaks and enable them to be easily decontaminated, and injecting cement walls and floors with additives to resist chemical corrosion.

Mr. Saeed said that over the years he had also picked up some odd jobs. In 1999, for instance, associates in the Iraqi intelligence service had asked him to help them design a better glue for the Defense Department's hand grenades. "I devised a better glue for them," he said, "which could hold together at higher levels of heat."

Not all of his work was for the military, he said. In 1998, he received part of the contract to build the sauna rooms, swimming pool, and gym of Al Salaam Palace, one of the many lavish, sprawling palaces that Mr. Hussein had built. He said he had also built Mr. Hussein's first whirlpool bath.

Saying that money was no object in Iraq's quest for weapons of mass destruction, Mr. Saeed noted that many extra chemical and biological facilities were built in case some were discovered or attacked. Often the facilities stood idle for years until officials decided to use them, he said.

Duplicate nuclear facilities, he said, were also built as part of an Iraqi program that he called "Substitute Sites." He claimed to have done repair or construction work in facilities that were connected with all three classes of unconventional weapons — nuclear, chemical, and biological programs.

Although work usually began in such facilities after he had left, he said that once he was called in to repair a biological facility located in Waziriya, an industrial area in Baghdad. "It was near the Mercedes dealer," he said, pointing to a map of the capital. The facility had been bombed in January, 1993, but rebuilt soon after the bombing. "They had an accident in 1997 and the floor was chipped, so I was taken to treat it," he said.

Although the facility was empty when he arrived to do the work, he said he was required before entering the room to put on the protective clothing that researchers in high- containment biological labs wear: a white rubberized suit, a gas mask with respirator, and blue plastic booties. The room, he said, had pipes that brought in fresh air.

He described Iraq's biological facilities as among the most sensitive of all the weapons efforts. The word biology is never used, he said. "They always refer to it as chemical work."

He also said that he had secured areas underneath what seemed to be water wells on farms around Baghdad, where lead-lined storage containers were stored. He said that he did not know what the boxes contained. "But my assumption is that there was radiation there," he said. "Why else use the lead?" These particular wells contained no water, he said, and part of his work involved sealing the ventilation pipe that emerged from the ground next to the wells. He personally worked on about 20 of these installations, he said.

### **Early Origins**

Mr. Saeed said that Iraq had begun using rooms in or under villas in residential areas and in commercial areas during the Persian Gulf war to protect weapons sites from American bombing, but that they had now become a permanent feature of Iraq's weapons programs.

He said that the "presidential sites" from which Saddam Hussein had tried to bar inspectors in 1997 were also used for concealment. Specifically, he said, between two presidential sites in Radwaniya, there was a secret underground structure that had been built by a Yugoslav company. He had been brought there, he said, to treat a very fine crack in the tunnel's ceramic wall.

He said that he had been selected for the government contracts and that he had received them without competitive bidding.

Richard Butler, an Australian diplomat who led the United Nations international inspection effort in Iraq when Mr. Hussein barred inspectors from his country, said that Mr. Saeed's account seemed "plausible." Mr. Butler said that several of the places and projects that the Iraqi engineer had mentioned had been known to, or suspected, by his inspection commission, which was then known as Unscm.

"It rings true what this mans says about underground wells and tunnels," Mr. Butler said.

But American intelligence officials have long had cause to be skeptical of such defectors. Although some of them provided "invaluable" information about such activities, he said, "many embellish what they actually did and what they know in order to try to get safe haven in the United States and other countries."

Caution was especially warranted, a weapons expert said, in light of the ongoing debate within the Bush administration over whether to expand the war against terrorism to Iraq, on grounds that the country's hostility towards the United States and its illegal weapons development pose a national security threat.

There was no means to independently verify Mr. Saeed's allegations. But he seemed familiar with key Iraqi officials in the military establishment, with many facilities previously thought to be associated with unconventional weapons, and with Iraq itself. A representative of the Iraqi National Congress, the opposition group, said that he had served in the army with Mr. Saeed, had known him for many years and trusted him.

Mr. Saeed was born in 1959 and is a Kurd originally from Kirkuk, he said. After graduating from the university in Baghdad in 1980, he enjoyed the good life, owning two farms near the capital and apartments abroad. He set up his company, Wedian, in 1992 and did well, he said. After his imprisonment — he said he did not know the precise reason — he fled the country with \$18,000 and two kilograms of gold, "a fraction of what I own," he said. Because of his time in prison and his flight, he said, he now understood the fear that gripped so many supposedly privileged, well- connected Iraqis.

He said he would return to his country "tomorrow" if Saddam Hussein were gone.

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Washington Post  
December 20, 2001  
Pg. 29

## **Nuclear Strike On Bunkers Assessed**

### ***Congress Receives Pentagon Study***

By Walter Pincus, Washington Post Staff Writer

The Pentagon and the Energy Department have completed initial studies on how nuclear weapons could be modified to attack hardened bunker complexes and buried tunnels that conventional weapons cannot destroy, but no decision has been made to go ahead with such a program, according to a Defense Department report to Congress made public yesterday.

The two departments have also been studying the need for a new, low-yield nuclear weapon to find a military means, conventional or nuclear, to attack and verify destruction of the growing number of such underground facilities that protect the "most valued and strategic capabilities" of such potential enemies as North Korea, Iraq and China, the report said.

The study was completed in July, before U.S. military forces in Afghanistan were faced with trying to bomb and destroy caves where Osama bin Laden's al Qaeda network may be holed up.

"Any development and procurement of advanced nuclear capabilities would be considered in the context of nuclear stockpile policy, plans and priorities as well as future [Defense Department] strategic programs," according to the Pentagon report. It was sent to Congress in October and disclosed yesterday by Nuclear Watch of New Mexico, a nonprofit organization concerned with safety, environmental and nonproliferation issues surrounding nuclear weapons.

A decision on whether design work will begin on a new or modified nuclear weapon to go after hardened underground targets is expected to be contained in the long-awaited Bush administration nuclear posture review, which sources said yesterday is at the White House for final review. Under law, it is required to be completed by the end of this month and may be released Dec. 28, according to sources.

Although some Pentagon and nuclear weapons laboratory experts have been pushing for more than a year to have design work begun on such a weapon, as of July, when it was completed, the report said, "There is no current program to design a new or modified [hard target] nuclear weapon."

Nonetheless, the report said, the Defense and Energy departments "continue to consider and assess nuclear concepts" that could result in a requirement for such a weapon, and a planning group is working to define the scope for a design feasibility study.

Although most publicity has been devoted to Iraqi President Saddam Hussein's use of underground bunkers, U.S. intelligence "suspects" there are more than 10,000 potential hardened targets "and their numbers will increase over the next 10 years," according to the report.

Such underground facilities are being used to protect not only a country's leadership, but also command, control and communications centers; weapons production facilities; and missile launching sites for chemical, biological and nuclear warheads, the report said.

One advantage nuclear weapons have over conventional weapons when it comes to destroying bunkers containing chemical and biological warfare materials is that they "destroy both agent containers and the CBW agents," the report says.

The "lethality is optimized," the report added, "if the fireball is proximate to the target. This requires high accuracy; for buried targets, it also may require a penetrating weapon system."

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Aerospace Daily  
December 20, 2001

## **Pentagon To Consider Resurrecting Navy Area Missile Defense Program**

The Navy Area Theater Ballistic Missile Defense System, the first major program cancellation of the Bush Administration, may be resurrected as a new program after the Navy and the Ballistic Missile Defense Organization conduct studies on missile alternatives for a sea-based area defense program, according to sources.

E.C. "Pete" Aldridge, the undersecretary of defense for acquisition, technology and logistics, canceled the program last week, citing a 57 percent increase in unit procurement costs (DAILY, Dec. 18). Aldridge could have avoided a full cancellation by certifying the need for the program and restructuring the program to contain costs and schedule slips, but Aldridge said this was "impossible."

In canceling the Navy Area program, the Pentagon cited multiple schedule slips and cost overruns associated with Raytheon's Standard Missile (SM)-2 Block IVA missile. These overruns were caused by software and hardware integration problems, and new cost estimates based on experience from the PAC-3 program.

"Navy Area is dead," said an industry source familiar with the Navy Area program, but that doesn't preclude resurrecting a sea-based area defense program using the main elements of the Navy program, such as the Standard Missile and Aegis Weapon System. "Under the new BMDO lexicon, [the] sea-based terminal program will likely be a resurrected area program," the source added.

The Navy and BMDO plan to conduct their own studies on missile alternatives, the source added. A Pentagon official, who asked not to be named, confirmed that the Department of Defense would look at missile alternatives. David Steigman, a naval analyst at the Teal Group in Fairfax, Va., said BMDO and the Navy plan to conduct missile studies with an eye to "resuscitating some sort of sea-based battlefield defense."

BMDO spokesman Lt. Col. Rick Lehner referred all questions on Navy Area to DOD, but Pentagon spokeswoman Cheryl Irwin said she could not comment on speculation.

### **Standard Missile only option**

While the studies will look at alternatives as they seek to fix the missile problems that plagued the Navy program, there may be no practical alternative to Raytheon's Standard Missile, the Navy's only shipboard surface-to-air missile.

The BMDO and Navy alternatives studies likely will examine ways to upgrade and fix the Standard Missile, according to Steigman, who added that DOD will probably look for a "quick fix" or "get well" option for the SM-2 Block IVA missile.

"Every Navy program for missile defense relies on some sort of Standard option," Steigman said. "There is a possibility that the studies will look at other missiles, but the overwhelming likelihood is that time constraints and fiscal constraints will make that impossible."

The Navy and BMDO studies probably will take four to 10 months, Steigman said. The Navy and Pentagon are motivated to restart the program quickly because they expect the defense budget to be reined in over the next couple of years, he said.

#### **No word on management**

When canceling the Navy Area program, the Pentagon said BMDO would address sea-based missile defense "over the next several months." There was no hint as to whether the sea-based program - like the Navy Area program - would be managed in part by the Navy.

Phil Coyle, a former DOD director of Test and Evaluation, defended the Navy's management of theater and area defense programs. While the testers had pointed out problems with the missiles, "I've given the Navy credit in both its area program and its theater-wide program for not prematurely raising expectations - not raising unrealistic expectations - and just plugging away at the problem," Coyle said in a recent interview.

While any sea-based area defense program would use the Navy's Aegis system, it is difficult to say whether the Navy or BMDO would manage the program, said the industry source. "Who manages it and who has to pay is important," the source said.

Steigman agreed it was difficult to say who would manage such a new program.

"There are those in BMDO who want the whole gambit, and there are those in Navy who want it," but ultimately that decision will be made by either the secretary or the deputy secretary of defense, he said.

-- *Sharon Weinberger*

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Washington Times

December 20, 2001

Pg. 15

## **U.S. Joins Chemical Arms Audit**

By David R. Sands, The Washington Times

Russia and the United States have agreed to a joint audit of Russia's huge chemical weapons-stockpile management program, former Prime Minister Sergei Stepashin said yesterday.

Mr. Stepashin, now chairman of the Russian government's primary auditing agency, said he had agreed to the joint audit in talks with General Accounting Office head David Walker this week.

The investigation will look into the efficiency of the equipment provided to destroy the chemical weapons and into how U.S. money for the program is being spent.

"As Russia has about half of the world's chemical weapons stocks, this is an issue that's important not just for us but for world security," said Mr. Stepashin, who met with reporters at the Russian Embassy.

Congress lifted a two-year block on U.S. funding for the chemical weapons program in August. Russia spent \$100 million on the program this year and has budgeted \$200 million for 2002, Mr. Stepashin said.

But he added that a proposed \$2 billion U.S. contribution was critical if the program was to move forward.

Originally intended to destroy the former Soviet Union's chemical weapons stocks by 2007, the program now calls for their elimination by 2012.

Mr. Stepashin said the joint U.S.-Russian audit would bolster confidence that the program was being managed wisely. The Russian official said he had floated the idea that Russia could shoulder the bulk of the costs of the chemical-weapons destruction program — estimated at \$10 billion to \$15 billion over the next decade — in return for an equal amount of forgiveness on some \$67 billion in Soviet-era government debts.

Vice President Richard B. Cheney, who met with Mr. Stepashin by teleconference from an undisclosed location because of security concerns growing out of the September 11 attacks, agreed to form a joint working group to consider the idea and the program's long-term financing.

Mr. Stepashin said he discussed with GAO officials the U.S.-led campaign to cut off funding for terrorist organizations in the wake of September 11. He said Russian financial officials were working to build relationships with the country's banks to deny terrorists access to the financial system.



He said Russia may have special expertise from its long struggle with Islamic fundamentalist groups in Chechnya, which Moscow contends have extensive links to the terrorist network of Osama bin Laden.

"We know very well that the Chechen terrorists and bin Laden's networks used some of the same schemes to get financing," he said.

On another issue, Mr. Stepashin said he was increasingly confident that talks with congressional leaders would lead to an easing of sanctions on Russian exports. He said legislation to repeal the Soviet-era Jackson-Vanik Amendment, which imposes sanctions in protest of Russia's emigration policies, could be introduced before Christmas and would almost certainly be passed next year.

He said Russia is also hoping for normal trading rights with the United States as it bids to join the World Trade Organization and is seeking the end of dumping charges that block the sale of Russian steel here.

"We are aware that the United States has to protect its internal markets, but our arguments met with understanding here," Mr. Stepashin said.

Mr. Stepashin briefly served as prime minister under former President Boris Yeltsin in 1999 before being replaced by an unknown former KGB officer named Vladimir Putin. Named chairman of Russia's Audit Chamber in April 2000, Mr. Stepashin is credited with taking on some of the country's most sacred cows.

His investigators have probed the Kremlin's notorious property division, the shaky finances of the Russian Baltic Sea enclave Kaliningrad and the financing of the war in Chechnya.

He said the cooperation he met with this week in Washington reflected the closer U.S.-Russian ties since September 11. Divisive issues such as the Chechnya campaign have faded in importance since the attacks, he said.

"I received no questions about Chechnya the whole time I was here," he said.

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New York Times  
December 20, 2001

## **In Changed World, Qadaffi Is Changing, Too**

By Patrick E. Tyler

WASHINGTON, Dec. 19 — Libyan leader Col. Muammar el-Qadaffi has notified diplomats in the Netherlands that after two decades of building one of the largest stockpiles of chemical weapons in the Middle East he is ready to sign an international treaty banning them.

Colonel Qadaffi's decision — which would open his extensive underground desert facilities to outside inspectors for the first time — followed private consultations with intermediaries to the West. Among them were the former South African president, Nelson Mandela, who visited Colonel Qadaffi in October, and Prince Bandar bin Sultan, Saudi Arabia's ambassador to the United States, who traveled to Tripoli this month after earlier talks in London with Libya's chief of intelligence.

Diplomats who have been in recent contact with Colonel Qadaffi said that in the aftermath of the Sept. 11 terrorist attacks he has accelerated his efforts to improve his standing in the West.

He was among the Arab leaders who denounced the Sept. 11 attacks as "horrible," and he publicly stated that the United States had a right to pursue the perpetrators. When anthrax attacks followed, Colonel Qadaffi said, "It is a cowardly, evil and irresponsible action putting in danger the whole of humanity."

With the lifting of United Nations sanctions against Libya in 1999 and a subsequent upsurge in European business, he seems eager to win the removal of the United States trade and arms embargo that has been in place for more than two decades.

Fifteen years ago, Colonel Qadaffi was at the center of America's campaign against terror. His intelligence organization was accused of planting the bomb that killed two American servicemen and a Turkish woman at a Berlin nightclub on April 5, 1986. Ten days later, President Ronald Reagan ordered the bombing of Libya, reportedly killing one of the colonel's daughters.

Then, in December 1988, a bomb aboard a Boeing 747 exploded over Lockerbie, Scotland. The bombing killed 270 people and Libyan agents were suspected.

Now, as part of his consultations with intermediaries, Colonel Qadaffi was said to have offered intelligence information on members of Osama bin Laden's Qaeda terrorist organization, including a number of Libyans who are said to have served on Mr. bin Laden's personal protection force.

Another possible reason for his willingness to cooperate with the campaign against Al Qaeda is that Colonel Qaddafi sees Mr. bin Laden as a threat, intelligence officials and diplomats say. A new French book, "Bin Laden: The Forbidden Truth," by Jean-Charles Brisard and Guillaume Dasquié, cites plots to kill Colonel Qaddafi by members of the Libyan Islamic Fighting Group, which has been linked to Mr. bin Laden and listed by the Bush administration as a terrorist group whose assets should be frozen worldwide.

The diplomats who related Colonel Qaddafi's conversations said that he had seen the benefit in cooperating. An earlier decision to provide Britain with intelligence information about members of the Irish Republican Army who had trained in Libyan camps and purchased Libyan weapons and explosives became a critical factor in Britain's decision to normalize relations with Libya.

That occurred in July 1999 after Libya accepted responsibility for the 1984 killing of a British policewoman by shots fired from the Libyan Embassy in London.

Britain restored full diplomatic relations without waiting for the outcome of the complex efforts to bring the suspected perpetrators of the Lockerbie bombing to trial.

The United States appears to be awaiting the final outcome of appeals in that prosecution.

Last January, a Scottish court sitting in the Netherlands convicted a Libyan intelligence operative, Abdelbaset Ali Mohmed al-Megrahi, for his role in planting the bomb. Another defendant, Al Amin Khalifa Fhimah, was acquitted. An appeal is due to be heard in late January. The disposition of the case is expected to clear the way for a final compensation offer from Libya to the families of the passengers, crew and Lockerbie residents who died in the crash.

José M. Bustani, the Brazilian diplomat charged with implementing the Chemical Weapons Convention, said today from his headquarters at The Hague that he had received a private commitment from Libya that it would sign the accord in coming weeks.

"I can confirm that this process has been cleared by Qaddafi, so it is a matter of time," Mr. Bustani said. "I believe the Libya development is very important, because by acceding to the convention and opening its chemical industry for inspection, that will have an impact all over the Middle East."

Mr. Bustani said that he had been trying to bring Libya "into the fold" for several years, if only to weaken the resistance of Arab states that say they will only join the 145 nations who have signed the chemical weapons pact once Israel signs the Nuclear Nonproliferation Treaty.

Sudan and Jordan have recently signed the chemical weapons convention, but Egypt, Syria and Lebanon continue to hold out.

Last month at the United Nations General Assembly meetings in New York, the Libyan envoy, Abdurrahman Mohamed Shalghem, caught delegates by surprise when he said, "My country is a party to most international agreements in the field of disarmament, and is in the process of acceding to the rest, including the Chemical Weapons Convention and the Nuclear Comprehensive Test Ban Treaty."

As recently as 1996, the United States publicly threatened to attack a chemical weapons production facility at Tarhuna, about 60 miles southeast of Tripoli, where Colonel Qaddafi had constructed a huge underground complex. In testimony before the Senate Intelligence Committee in February of that year, the director of Central Intelligence at the time, John M. Deutch, called Libya's facility "the world's largest underground chemical weapons plant."

The secretary of defense at the time, William J. Perry, said Washington would not allow the plant to become operational, thus putting Mr. Qaddafi on notice that the facility would become subject to military strikes.

Still, Libya is reported to have stockpiled 100 tons of chemical weapons agents at the Tarhuna facility and at a sister facility constructed with German assistance during the 1980's in Rabta, about 75 miles southwest of the Libyan capital.

"Libya's chemical weapons program is considered to be its most successful effort in weapons of mass destruction," said Joshua Sinai, a specialist on Libya with the Analytic Services consulting firm. He said that Libya's accession to the treaty would be a "significant and welcome development," but that Washington would have to insist on "complete access" to what he said was a complex system of underground tunnels big enough to accommodate vehicles and modeled after similar tunnels in North Korea.

The United States and Russia have the largest stockpiles of chemical weapons, about 70,000 tons in total, and both have committed to destroying them over the next decade.

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## **Anthrax Vaccine Plan Sows Confusion**

### ***D.C. Advises Workers Against Treatment***

By Ceci Connolly and Avram Goldstein, Washington Post Staff Writers

Postal workers expressed frustration and confusion yesterday over the federal government's plan to offer them anthrax vaccine on an experimental basis, complaining they do not have the medical information to make such a difficult decision.

Even as the Bush administration scrambled to meet the legal requirements of such an unprecedented proposal, lawmakers and local officials reacted bitterly to the lack of guidance they were receiving eight weeks after the Centers for Disease Control and Prevention began formulating the plan.

"First it was Cipro; then it was the other pill. Now it's this," said Willard Tucker, an employee at the Brentwood postal facility. "Why do we have to be guinea pigs for them? They don't even know what's going on."

Adding to the confusion, Mayor Anthony A. Williams said in a statement released last night that District officials were advising against vaccination and recommending that workers contact the CDC.

"After discussing this issue at several scientific meetings, and the careful review of the scientific data, and absent a recommendation from the CDC, the District . . . affirms its previous public health advisory which recommends strict compliance with the 60-day course of antibiotics," the statement said. "As such the District Department of Health does not recommend investigational post-exposure prophylactics with anthrax vaccine at this time."

"No one has recommended the vaccination yet. We're not ready to do so," said District Health Director Ivan C.A. Walks. He met with postal workers for about two hours last night and told them of the mayor's recommendation. Antoine Barry, 40, a letter carrier at the Friendship Station post office, said he felt more confident about not taking the vaccine after hearing Walks speak.

"My concerns were basically just 'Am I safe?' " he said. "We're just handling this one day at a time. I feel a little better now. I feel like I know a little more about what's going on."

Postal workers in New Jersey, still waiting to be contacted by federal officials, said they are relying on news reports for guidance.

"We don't know how to protect ourselves," said Dianne Fazekas, who worked beside two co-workers at a Hamilton, N.J., postal facility who contracted inhalational anthrax. "We read in the paper that the spores can reactivate themselves after we stop the medicine. We also read that the vaccine has problems and we'd have to sign a release if we take it. Nobody knows what to think."

On Capitol Hill yesterday, inoculation of congressional workers was postponed a day because federal officials had not completed the necessary consent forms laying out the risks associated with taking a vaccine that has not been approved as a post-exposure treatment.

At the same time, inspectors from the Food and Drug Administration gave a partial endorsement to the vaccine maker, BioPort Corp., after conducting an evaluation at the plant in Lansing, Mich., as part of the company's efforts to win final approval for the vaccine.

The FDA made seven "observations," issues that BioPort must address, said Kathryn Zoon, the agency's top vaccine evaluator. Many of those issues were addressed while inspectors were at the facility, she said, such as the company's procedures and rules.

But it was the fresh wave of uncertainty that dominated discussions in post offices, a conversation that was often tinged with an element of race and resentment over how postal workers were treated during the anthrax attacks.

"We've been pushed to the side and that frustrates me," said George Bryant, who said he has felt from the start that postal workers have been treated differently from congressional aides. "I think they know more than they're telling us. I'm really scared. I just want to know what's going on."

Bailus Walker, a professor of public health and health policy at Howard University, said the government's handling of the anthrax attacks has only reinforced long-held suspicions.

"There is a long-standing, deeply ingrained concern in the black community about being used as guinea pigs," he said. "As much as we try, we have not been able to remove from the minds of the black community the Tuskegee episode. . . . We confront it almost monthly as we try to get blacks to participate in clinical trials. This just feeds it." Tuskegee refers to a notorious federal study in which treatment was withheld for 40 years from hundreds of poor black sharecroppers with syphilis.

On Tuesday, Health and Human Services Secretary Tommy G. Thompson announced that the anthrax vaccine would be made available to about 3,000 people on the East Coast who may have been exposed to spores. The

decision was prompted by concerns that the spores may survive longer in the lungs than had been thought and could still make people sick once their 60-day courses of antibiotics end.

In the announcement, Thompson did not make a recommendation on who should receive the vaccine but said individuals could opt instead to take antibiotics for an additional 40 days or simply monitor their health and watch for symptoms of anthrax disease.

"It appears that once again federal officials do not have a comprehensive plan of action," said Rep. Christopher H. Smith (R-N.J.), recalling the confusion that arose when 1,000 postal workers were told one Friday afternoon in October to get antibiotics to protect against anthrax. "In the first go-round we tried to exercise some patience as the experts found their way. This time there is no excuse."

Last night CDC Director Jeffrey P. Koplan offered some insight on who should consider receiving the three-shot vaccine regimen. They include individuals who were in proximity to tainted mail, such as the 70 people in and near Senate Majority Leader Thomas A. Daschle's Hart Building offices, anyone who had contact with one of the five people who died of inhalational anthrax and anyone who was in an area that was "heavily contaminated" with anthrax bacteria, such as the Brentwood and Hamilton postal facilities, he said.

"Those are the individuals at higher risk who may want to consider these more aggressive options," he said in an interview.

Yet one day after Thompson announced his decision, it was clear many critical aspects of the plan remained unresolved or strayed from standard practice.

Although anthrax vaccine has been licensed in the past for inoculating high-risk groups such as soldiers, it has never been used as a treatment for people who may have been exposed to the bacteria. Because of that, the CDC must submit a detailed request outlining why and how it will conduct the treatment. This is known as an investigational new drug (IND) program.

"INDs are used when you are experimenting on people," said Mary Pendergast, former deputy commissioner of the FDA. Two key documents, she said, are the scientific protocol and the consent form that all participants must sign. Both must be approved by independent panels concerned with the safety of patients.

"You must give the person who is giving consent all the relevant information so they can make a wise decision whether to take the experimental drug," she said.

Koplan said the agency's institutional review board was still revising the consent form and the scientific protocol last night.

Prominent physicians, meanwhile, disagreed publicly over what patients should do.

Capitol physician John Eisold, in an e-mail to congressional workers, said that while federal officials remained neutral, he was recommending the vaccine for about 70 people exposed to an anthrax-laden letter sent to Daschle (D-S.D.).

"If the federal government leaned toward Eisold and said we really should be giving it and recommending it, the other people would say, 'Why are you doing that? Why are you exposing us to risk?' " said Anthony S. Fauci, director of the National Institute of Allergy and Infectious Diseases. "If you lean the other way, the Eisold people would say, 'Wait a minute -- we want it.' "

*Staff writers Andrew Demillo and Dale Russakoff in New Jersey contributed to this report.*

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Washington Post  
December 20, 2001  
Pg. 19

## **Lingering Worries Over Vaccine**

### ***Some Servicemen, Scientists Question Safety, Effectiveness of Anti-Anthrax Shots***

By Shankar Vedantam, Washington Post Staff Writer

Jason Nietupski was ordered to take three shots of anthrax vaccine in February and March 2000, right before he was deployed to South Korea as a U.S. Army reserve officer.

Within weeks, Nietupski developed a host of medical problems that an Army medical evaluation concluded were related to the vaccine: Blood clots appeared in the aspiring fighter pilot's legs and a bloody mucus dripped into his mouth; he was diagnosed with chronic fatigue syndrome and an allergic reaction called Steven Johnson's syndrome. "I was very healthy and never went to doctors before I took the vaccine," said Nietupski, 29, in an interview yesterday, describing how his life changed after the shots. "Now if you look at me the last 18 months, I have a medical record six to eight inches thick."

As thousands of postal workers and Senate staffers who were exposed to anthrax bacteria during this fall's attacks debate whether to take the anthrax vaccine, they face a brutally difficult decision: Should they listen to those like Nietupski and avoid the vaccine, or should they listen to the exhaustive scientific evaluations that have found the vaccine to be generally safe?

Compounding the difficulty of the decision is the spotty record of the vaccine's manufacturer, which has been repeatedly cited by the Food and Drug Administration for inferior manufacturing processes, and a general lack of understanding about whether the vaccine will work -- or is even necessary.

Federal health officials did not specifically recommend the vaccine when they announced Tuesday they would make it available for those considered at high risk because they may have been heavily exposed. And doctors responsible for care on Capitol Hill and those responsible for the care of thousands of Washington's postal workers have offered differing conclusions about what patients should do.

"The actual data show that in animals there is in fact no difference between vaccine and antibiotics versus antibiotics alone," said Anthony Fauci, the nation's top infectious diseases expert. "The only consideration is purely theoretical."

Workers exposed to anthrax spores, said Fauci, might still be harboring spores in their lungs despite two months of antibiotics. Giving them vaccine while continuing the antibiotics might help.

While the anthrax risk and vaccine benefits are both unknown, the vaccine carries some known risks. Individuals who were extremely worried about the risk for anthrax could decide to accept that risk and take the vaccine, Fauci said. Those less worried could decide to continue only with antibiotics, or take no new medicines.

The anthrax vaccine contains no live bacteria, said Fauci, who directs the National Institute of Allergy and Infectious Diseases. It comprises proteins secreted by the bacteria. The vaccine is designed to get the immune system to recognize the proteins -- and therefore the bacteria -- and destroy both.

Since March 1998, the Department of Defense, the largest user of the vaccine, has administered 2.1 million doses of the vaccine to 524,000 people to protect them against a possible biological weapons attack. Most have received six doses -- three in the first month, and then booster doses at six-month intervals. Most recipients have been active-duty soldiers, but reservists and some civilians have been vaccinated as well.

"We have conducted 18 human safety studies -- short and long term -- retrospective and prospective," said Lt. Col. John Grabenstein, deputy director for clinical operations of the DOD's Anthrax Vaccine Immunization Program. "In aggregate, what they show is anthrax vaccine has a side effect profile similar as that of other vaccines."

Severe allergic reactions are seen in 1 per 100,000 people, he said. Military researchers said up to 16 percent of people may experience rashes, 14 percent to 25 percent may experience headaches, 12 percent to 15 percent joint aches and up to a third muscle aches. Patients also report painful stinging and burning reactions at the injection site. Referring to accusations that there are many more serious adverse events, Grabenstein said, "lots of people are confusing, 'it happened after vaccination' with 'it happened because of vaccination.'" The vaccine's safety had been evaluated by a number of independent civilian scientists, including those at the National Academy of Sciences, he said.

The FDA said the vaccine being offered is substantially the same vaccine that has been tested for decades. Although the manufacturer, BioPort Corp. of Lansing, Mich., is still completing safety inspections, the FDA believes the vaccine being offered to the public is safe.

"There's nothing we feel that would concern us about the safety" of the vaccine being offered, said Kathryn Zoon, the FDA's chief vaccine regulator, in an interview yesterday.

Those assertions are sharply at odds with those made by people who say they have been affected by the vaccine. In congressional testimony and on Internet bulletin boards, former and current servicemen report wide-ranging problems that the government has been unwilling to acknowledge.

Jon Irelan, 42, a retired Army major and ranger, said he fell ill after receiving the fourth shot of anthrax vaccine while in Saudi Arabia.

Both Irelan and Nietupski said they fear the vaccine they received was contaminated because of problems at BioPort. Nietupski said he cannot sue, because the DOD had indemnified the company -- protection that applies under the civilian vaccination plan as well, under terms arranged by the Health and Human Services Department.

"Why are you indemnifying BioPort if they are making a safe product?" Nietupski said. "I had to take this shot or I would have been court-martialed. Now . . . I can't sue the Army and can't sue BioPort, even though the vaccine caused these chronic multi-system disorders."

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Far Eastern Economic Review  
December 27, 2001 - January 3, 2002

## Burma Joins The Nuclear Club

### *Russia muscles in on China's turf with a reactor for Burma*

By Bertil Lintner

Burma is one of the world's poorest and least developed countries, yet it is apparently embarking on a nuclear-power project with the help of Russian and, possibly, Pakistani scientists. And Beijing is none too happy at seeing Moscow muscling in on its turf, according to diplomats.

The project was initiated by Russia's Atomic Energy Ministry, which in February announced plans to build a 10-megawatt research reactor in central Burma.

In July, Burma's Foreign Minister Win Aung, accompanied by the military-ruled country's ministers of defence, energy, industry and railways, travelled to Moscow to finalize the deal. At the time, Russian news agencies quoted Foreign Minister Igor Ivanov as saying that Russia considers Burma a "promising partner in Asia and the Pacific region."

He had reason to be pleased as Russia also managed to sell 10 MiG-29 fighter aircraft for \$130 million to Burma. Rival China is Burma's main military supplier, while the West shuns the country.

The ground-breaking ceremony for the nuclear facility is scheduled to take place at a secret location near the town of Magwe in January. The equipment and reactor will be delivered in 2003, while more than 300 Burmese nationals have received nuclear technical training in Russia over the past year, according to Russian diplomats.

Tight secrecy surrounds the fledgling nuclear programme and there is little noticeable activity around the recently established Department of Atomic Energy in Rangoon, residents say. The project is believed to be the brainchild of Burmese Minister of Science and Technology U Thaung, who is reported to believe that nuclear research is necessary for "a modern nation."

But while Burma suffers from a chronic power shortage, it's not clear why it would need a research reactor, which is used mainly for medical purposes.

The programme came under the spotlight recently after two Pakistani nuclear scientists, with long experience at two of their country's most secret nuclear installations, showed up in Burma after the September 11 terrorist attacks in the United States.

According to Asian and European intelligence sources, Suleiman Asad and Muhammed Ali Mukhtar left Pakistan for Burma when it became clear that American officials were interested in interrogating them about their links with suspected terrorist mastermind Osama bin Laden. The U.S. believes bin Laden wants to develop a nuclear weapon. A Pakistani news agency reported that the duo went to Burma to assist local scientists in "some kind of research work," leading many observers to believe they had joined the nuclear project.

There is no clear evidence linking them to the Russian-supported nuclear programme. But one Asian diplomat speculates that if the Pakistanis are indeed assisting Burmese scientists it could be in the field of taking care of nuclear waste.

This is a highly lucrative business, and Burma desperately needs foreign exchange to help to prop up its moribund economy.

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## House Warns Iraq On Weapons Inspectors

The House yesterday called on Iraqi President Saddam Hussein to allow the unrestricted return of U.N. weapons inspectors, warning his continued refusal poses a mounting threat to the United States. Lawmakers endorsed 392-12 a non-binding resolution that stressed the urgency of resuming U.N. monitoring of Baghdad's weapons program.

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New York Times  
December 21, 2001

## Britain: Aid For Russia To Destroy Weapons

Britain will help Russia get rid of its 40,000-ton stockpile of chemical weapons under a treaty signed on the eve of a meeting in London between Prime Minister Tony Blair and President Vladimir V. Putin. Defense Secretary Geoff Hoon told his Russian counterpart, Sergei B. Ivanov, that Britain understood the "daunting task" Moscow faced and the need for international assistance. Britain will contribute \$17 million over the next three years.

**Warren Hoge** (NYT)

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Economist  
December 22-28, 2001

## America The Unready

### *Preparations against another terrorist attack range from the patchy to the poor*

Washington, DC -- Setting up the Office of Homeland Security in early October—the first such cabinet-level creation for a decade—George Bush called for "a comprehensive national strategy to safeguard our country against terrorism." He still hasn't got one.

Evidence of ambivalence towards domestic security is everywhere. More than 100 bills have been introduced into Congress with the label "homeland security" on them. Yet compared with the \$15 billion doled out to the airline industry, the cash they provide for things like emergency health care is puny. When the governor of California posted troops on bridges in response to a terrorist alert, he was widely criticised for panicking the public.

The contrast with the judicial response to terrorism is instructive. Whatever one thinks of John Ashcroft's proposals to increase the powers of law-enforcement bodies, they are unmistakably a serious effort to organise the Justice Department for war against terror. No such claim can be made for the administrative response so far.

To be fair, there has been a response. In early December America signed an agreement with Canada allowing customs officials to inspect factory shipments on site, rather than clog up the borders. A similar deal with Mexico is in the works. Security has been stepped up at nuclear power stations, oil pipelines, and so on. Congress has passed an airline-safety bill, making all baggage screeners federal employees and requiring airlines to put steel doors on cockpits. And a bill in the Senate would require passenger lists to be checked against a new immigration database as well as making it harder for students from countries that sponsor terrorism to get visas.

Fine. Border and visa controls need tightening (even though they can never be perfect). But doubts remain about security at nuclear power plants (see box on next page). And although airline security has got better (not hard), the airline bill played only a modest role in that. Most of the discussion focused on the secondary question of who should employ baggage screeners (rather than what they should do) and the compromise reached was an extraordinary muddle: screeners will be federal employees for three years, presumably driving the (admittedly incompetent) screening companies bust—after which they will get a chance to return to business.

And the weakest part of America's border defences remains unaffected: the Coast Guard. By its own admission, it ranks 39th out of 41 countries in terms of its equipment. Modernising its fleet of 80-odd ships and 200 aircraft and helicopters should begin next year, and it will take a decade. For the moment, the Guard does not have enough

vessels both to patrol the high seas for drug smugglers and to protect ports. Of the 16,000 containers that come into America by ship every day, only 500 or so are inspected.

These operations are all run by federal authorities. The news is better at the local level. On September 11th, New York was able to move 1m people out of the city by boat and cordon off lower Manhattan within an hour. Some of the injured were being treated in New Jersey within minutes. In early December state and city officials from around the country met in Pittsburgh to draft similar new downtown evacuation plans.

So the locally run "instant response" system is in better shape than the preventative programmes administered by the federal government. But even here, there are exceptions. Plans for the evacuation of schools vary wildly. In New York on September 11th, many of the emergency services were unable to communicate by cellphone for about six hours because there was no way to give some users priority over others, or to switch calls between different networks when one was damaged. A priority system is under discussion, but telecoms firms are balking at the cost (\$2 billion, they claim).

Anyway, New York is not typical. Because of previous attacks, its emergency services are in better shape than most. And the pattern of casualties on September 11th—many deaths, only light injuries—would not be repeated in a biological or chemical attack. They would produce thousands of serious illnesses.

The biggest gaps in America's defences lie in neither the federal nor local fortifications, but in the areas where different levels of government fuse together. Here there are problems to do with money, co-ordination and political will.

State and local governments bear most of the organisational burden in responding to terrorism (there are 11,400 FBI agents but 650,000 local policemen). The National Governors Association reckons homeland security will cost the states \$4 billion extra in the first year. The states are facing big budget shortfalls, so they are clamouring for federal help, but they will not get much. The mayor of New Orleans, Marc Morial, complains that of the \$10 billion to be spent on homeland defence this year, states and cities will get just 5%. That may be an underestimate. But the balance of spending is clearly skewed unfairly towards the federal government.

Even with more money, there would be problems of co-ordination. When the mayors of Baltimore, Gary (Indiana) and Reno (Nevada) tried to improve ties between the FBI and local police, they retreated in frustration. The executive director of the Conference of Mayors expresses "serious concern regarding the lack of intelligence sharing by the federal government."

The Office of Homeland Security was set up specifically to deal with such problems. It is far too soon to declare failure. But the early signs are not good. The office has been set up on the model of the National Security Council. The head of it, Tom Ridge, has executive power but no formal spending authority from Congress, as department heads do. The NSC has usually worked best when its head has been on good terms with the president. Mr Ridge, an old friend of Mr Bush, certainly has that advantage. The difference, though, is that the NSC is largely a policy-making post. The homeland director has operational responsibilities. It remains unclear whether he can exercise those without budgetary powers, too.

### **Somebody call a doctor**

All the doubts about money, co-ordination and political will apply to the most worrying aspect of homeland security: the medical response. Though it has some of the best hospitals in the world, America faces two big problems in dealing with mass casualties. In the search for efficiencies, its hospitals have largely eliminated "surge capacity" (the ability to cope with a flood of patients). And its public health system, which is supposed to track the progress of infectious diseases, has been starved of funds for decades.

The two weaknesses demand very different administrative solutions. Surge capacity can only be created by regional co-ordination—and the region has to be big, so that the local hospitals are not all overwhelmed. A bossy central figure needs to work out how competing private hospitals and public medical facilities, such as those run by the Veterans' Affairs Department, would share the burden. Sadly, no such "top-down" effort is yet evident.

By contrast, the public health system requires "bottom-up" rebuilding. Half of the 3,000 state and local health departments do not have high speed Internet access (a matter of course in law-enforcement agencies). One in ten does not have e-mail and 80% do not have emergency response plans. To modernise the system would require about \$10 billion over the next five years. In the current fiscal year, it has got around \$500m. Half of that will be swallowed up by the cost of anthrax testing.

On balance, then, America's preparations against future terrorist attacks range from patchy to poor, and Mr Bush's "comprehensive national strategy" seems a long way away. Perhaps the most convincing defence of the response so far is that, in an open society unaccustomed to domestic terrorism, it makes sense to start slowly and build cautiously. That will be fine—so long as the terrorists take their time too.

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## Behind The Biowarfare 'Eight Ball'

### *Non-combatants risked their health to test the USA's biological weapons*

By Glenn O'Neal

FREDERICK, Md. -- Eager to serve his country, Army Pvt. Merrel Olesen takes a seat on a catwalk outside the middle of a 40-foot-high stainless steel sphere that everyone on base calls the "Eight Ball." He dons a rubber mask connected to a breathing tube that brings in air from inside the sphere.

Industrial fans kick in, and within a few minutes, the experiment is over.

A few days later, the fever, aches and coughing begin.

"But what I remember the most was the swelling inside my mouth," says Olesen, now 68. "My gums had swollen so much that I could no longer see my teeth."

Olesen would fully recover from his infection, as would all the other volunteers in Operation Whitecoat who willingly became guinea pigs in Cold War-era tests involving yellow fever, plague, the infectious disease tularemia and other deadly bugs.

"I'm very glad I did it. I suspect you would have a hard time finding someone who participated in the program who felt bad that they did," says Olesen, now a plastic surgeon in La Jolla, Calif.

The deadly anthrax mailings after Sept. 11 have rekindled interest in the story behind this chapter in the U.S. biological weapons program, when hundreds of volunteers, most of them Seventh-day Adventists, served their country from 1954 to 1973 by enduring exposure to harmful germs or the testing of experimental vaccines.

#### **Seventh-day Adventist role**

In the waning days of World War II, U.S. intelligence officials learned about the biological warfare experiments carried out by the Axis powers, particularly the Japanese. Those revelations and fears of the work being taken up by Soviet scientists sowed the seeds for the U.S. biological weapons program.

Adherents to the Seventh-day Adventist faith refused to take combat roles in the military because of their religious views, but they were willing to serve. Consequently, they swelled the ranks of medics, cooks, dental units and chaplains' assistants in the Army.

In the early '50s, Col. W. D. Tigertt, commander of the U.S. Army Medical Unit, went to the head of the Seventh-day Adventist Church just outside Washington and proposed the idea of using Seventh-day Adventists in the Army for biological experiments.

Their meeting led to an ongoing relationship between the Army and the church that formed a foundation for Operation Whitecoat, first at Walter Reed Medical Center in Washington and later Fort Detrick in Frederick, Md. Every two years, an Army officer and a church official would visit the Army medic recruits at Fort Sam Houston in San Antonio. They were told about an opportunity to volunteer for an important project that could save American lives while developing offensive weapons, former volunteers recall.

"We were not pushed to say yes or no, but most of us said yes," Olesen remembers. "I think they handled it well. It actually sounded like a neat opportunity. Of course, I was young. Maybe I was stupid."

Experiments ranged from exposing volunteers to Q fever and tularemia to testing vaccines for Venezuelan equine encephalitis and yellow fever. The giant metal sphere, the "Eight Ball," was used to test aerosolized biological agents. This relic of the Cold War is on the National Register of Historic Places.

Frank Damazo, a semiretired surgeon in Frederick and a Seventh-day Adventist who serves as an unofficial historian of the Whitecoat volunteers, says volunteering for Army-sponsored biological experiments fit in with the church's beliefs in service and non-violence.

"These men volunteered because it's serving God, country and humanity," Damazo says. "That's part of their religion."

Throughout the Whitecoat program, about 80% of the 2,300 volunteers took part in a biological experiment, says Col. Arthur Anderson, chief of human use and ethics at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), the modern-day version of the U.S. Army Medical Unit.

Indeed, former Whitecoat volunteer Norman Powell says he spent his time doing clerical work at Walter Reed. Powell, now 66 and the dean of education at La Sierra University in Riverside, Calif., remembers going to the medical unit once to get his blood drawn, but he was not exposed to any germs.

The time spent on a medical experiment was just a few weeks, Olesen recalls. The rest of the time was devoted to light duty, such as painting the base barracks. Plenty of time was left over for playing tennis and baseball or other social functions on and off base.

"I had a relatively good time in the Army, much more so had I been given regular duty somewhere else," Olesen says.

### **'They were heroes'**

In 1969, President Nixon signed an order ending offensive biological weapons programs, signaling the beginning of the end of Operation Whitecoat, which closed for good in 1973.

A memorial for those Cold War soldiers and the military program they served is at an unlikely place -- a house of worship.

At the Frederick Seventh-day Adventist Church, a glass display case tucked into the corner of the foyer gives visitors a brief history of the group: medals, congressional commendations, an American flag, photos of reunions.

Outside, a brick and granite memorial with flagpoles can easily be seen by passing motorists on Interstate 70.

"A tremendous foundation of knowledge resulted from what they did," Damazo says. "Collectively, they were heroes. They performed a great service to the country."

Col. Anderson credits the group with:

- \* Testing safety equipment in use today, including biohazard protection masks and contamination suits.

- \* Participating in the first studies that proved that certain antibiotics cured Q fever and tularemia.

- \* Laying the groundwork for an effective vaccine against Rift Valley fever.

- \* Testing safety of plague vaccine that was used by soldiers in Korea and Vietnam.

"I do feel proud of what I did," echoes former Whitecoat volunteer Ken Jones, now 68. Jones took part in the early Q fever experiments, but did not come down with the illness.

"I feel if the Whitecoats did not participate in this, today we would be in the dark ages."

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Washington Post  
December 21, 2001  
Pg. 21

## **FBI Investigates Possible Financial Motive In Anthrax Attacks**

By Susan Schmidt and Joby Warrick, Washington Post Staff Writers

The FBI is pursuing the possibility that financial gain was the motive behind the mailing of letters containing deadly anthrax bacteria and has conducted extensive interviews of personnel at two laboratories and possibly more, according to government officials.

Although investigators have not ruled out other possible motives, they have conducted dozens of interviews in at least two labs to determine whether potential profit from the sale of anthrax medications or cleanup efforts may have motivated the bioterrorist believed responsible for the attacks, the officials said.

The current line of inquiry represents a deepening interest in one possible motive for investigators, who have examined a range of scenarios since the anthrax attacks on media and government representatives began this fall.

Authorities have probed whether foreign terrorists or homegrown extremists are responsible for the attacks but have come to favor the theory that the bioterrorism is likely the work of an individual operating in this country.

Investigators are still looking at a wide range of possible motives, including revenge and an attempt to implicate Iraq. Although authorities believe the person who mailed the anthrax spores may have some scientific expertise, they are not convinced the person necessarily produced it. The material could have been stolen, officials have said.

The focus on a profit motive may help explain why the FBI has yet to seek samples of anthrax spores from two foreign laboratories known to possess Ames-strain anthrax microbes that genetically match the material sent to Sens. Thomas A. Daschle (D-S.D.) and Patrick J. Leahy (D-Vt.). Those labs are the Canadian armed forces' Defence Research Establishment Suffield (DRES) and Britain's Defence Science and Technology Laboratories at Porton Down.

Spokesmen for the two foreign laboratories said they have not been contacted by the FBI or asked for samples of their germ stocks. Neither lab ever processed the Ames strain of anthrax in the powdered form found in the two letters, which readily becomes airborne and is easily inhaled.

"Porton Down has received no request from the FBI for information on its security arrangements, but if we were contacted, we would cooperate fully," said Sue Ellison, spokeswoman for the British lab.

Kent Harding, chief scientist for DRES, said the institute has "only been contacted by media at this point."

But a senior law enforcement official, speaking on the condition of anonymity, said there are reasons the FBI has not yet asked those labs for the samples. He said the bureau is looking at its most important leads first.

He also noted that it will be some time before there is anything meaningful to compare with samples from other labs, because the anthrax spores in the Leahy letter are still undergoing chemical analysis. That process may take weeks to complete.

The letter to Leahy, found among quarantined mail, was unopened, leaving a substantial quantity of material inside for the FBI to test. The letter is seen as the FBI's best hope for forensic clues in the attacks that have killed five people and sickened 13.

A possible profit motive for the attacks has been the subject of speculation among scientists. Richard Ebright, a microbiologist with Rutgers University's Waksman Institute, said the list of possible scenarios and perpetrators would be quite long -- ranging from drug manufacturers to companies specializing in decontamination and cleanup.

"There are numerous mid-Atlantic regional links to all of these possibilities," said Ebright. "Doesn't narrow the field much, does it?"

DNA tests have confirmed that the spores used in the terrorist attacks are genetically identical to a strain obtained by researchers at the U.S. Army Medical Research Institute for Infectious Diseases (USAMRIID) at Fort Detrick, Md., in about 1980. The Army has acknowledged distributing the strain to five other agencies, and some of the strain was in turn shared with other researchers.

The five labs that received the Ames strain from USAMRIID are the Army's Dugway Proving Ground in central Utah; Battelle Memorial Institute in Columbus, Ohio; the University of New Mexico's Health Sciences Center in Albuquerque; the Canadian DRES; and Porton Down.

Battelle, a private contractor that has worked with the Pentagon in developing defenses against biological attacks, is one of several labs visited by FBI agents investigating the anthrax attacks. Katy Delaney, a Battelle spokeswoman, said the company has cooperated fully with the government's investigation.

FBI agents "have interviewed people on our staff," Delaney said, but she declined to provide information about the nature of the interviews or how many Battelle employees had been questioned. "I can say that we have continued to provide all of the information and material that has been requested by the government," Delaney said.

Battelle is a contractor at Dugway, which last week acknowledged making a powdered form of anthrax to use in testing sensors and other equipment used to defend against biological attacks.

In the past several weeks, the FBI has also learned that a CIA defensive biowarfare program has involved the use of Ames-strain anthrax. Investigators have been very interested in the CIA program, government officials said, including work done by private contractors in connection with it.

Investigators learned belatedly that the CIA possessed Ames-strain anthrax spores because the agency was not listed among 91 labs registered with the federal Centers for Disease Control and Prevention to handle various strains of anthrax bacteria. Before 1997, labs that possessed anthrax spores but did not transfer them to other labs were not required to register with the CDC. The FBI has been surprised to learn only anecdotally of some programs, such as the CIA's, which have the material.

The CIA program was designed to develop defenses to a vaccine-resistant strain of anthrax reportedly created by the former Soviet Union. CIA officials have said they are certain the anthrax used in the mailings did not come from their work, that none of it is missing and that the small amount in their possession was not milled into powder form. *Staff writers Steve Fainaru and Rick Weiss contributed to this report.*

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New York Times  
December 21, 2001

## Vaccine Maker Hopeful Over License

By The Associated Press

LANSING, Mich., Dec. 20 — The nation's only manufacturer of anthrax vaccine expressed confidence today that it would soon win federal approval to distribute the vaccine.

The manufacturer, the BioPort Corporation of Lansing, has been making the vaccine since 1998 but has been unable to ship it after failing federal inspections of its laboratories in 1999 and 2000.

The Food and Drug Administration, which spent the last week inspecting BioPort's laboratories here, said on Wednesday that the company had addressed most of the problems but that it would not be fully licensed until an inspection of the company where the vaccine is placed into vials was completed early next month.

BioPort's president, Bob Kramer, said the corrections required by the drug agency were minor compared with problems cited in the two earlier inspections, which questioned the sterility of BioPort's laboratories but not the safety of the vaccine.

In the past, BioPort has supplied the vaccine only to its own employees and the Pentagon. About 520,000 troops have been vaccinated. On Tuesday the government offered vaccine it had bought from the military to Capitol Hill and postal workers who might have been exposed.

BioPort bought the aging vaccine laboratory, then called the Michigan Biologic Products Institute, from the State of Michigan in 1998. It has spent \$1.8 million to upgrade it and \$15 million to expand, with much of the money coming from the federal government.

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Baltimore Sun  
December 23, 2001

## **Army Harvested Victims' Blood To Boost Anthrax**

### ***Ex-scientists detail Detrick experiments***

By Scott Shane, Sun Staff

In an attempt to make America's biological arsenal more lethal during the Cold War, the Army collected anthrax from the bodies or blood of workers at Fort Detrick who were accidentally infected with the bacteria, veterans of the biowarfare program say.

The experiments, during the 1950s and '60s, were based on long experience with animals showing that anthrax often becomes more virulent after infecting an animal and growing in its body, according to experts on the bacteria and scientific studies published at the time.

Former Army scientists say the anthrax strain used to make weapons was replaced at least once, and possibly three times, with more potent anthrax that had grown in the workers' bodies. But some of the key scientists who did the work more than four decades ago are dead, and records are classified, contradictory or nonexistent, so it is difficult to establish with certainty the details of what happened.

The use of human accident victims to boost the killing power of the nation's germ arsenal is a macabre footnote to a top-secret program designed to destroy enemy troops with such exotic weapons as botulism, smallpox, plague and paralytic shellfish poison.

The offensive bioweapons program was launched during World War II and ended by President Richard M. Nixon in 1969.

Today, after a few grams of mailed anthrax have killed five people, sickened 13 others and disrupted the postal system and government, the old program's gruesome potential for destruction seems unimaginable. But at the time, fearing correctly that the Soviet Union had an even larger bioweapons program, Army scientists were driven to come up with more and more lethal disease strains.

"Any deadly diseases, anywhere in the world, we'd go and collect a sample," said Bill Walter, 76, who worked in the weapons program from 1951 until it closed.

Walter was involved in anthrax production from selection of seed stock to the dry, deadly spore powder ready to be loaded into a bomb; his final job was as "principal investigator" in a lab that studied anthrax and other powder weapons.

Walter believes the original weapons strain of anthrax, a variety called Vollum after the British scientist who isolated it, was upgraded with bacteria collected from three Detrick workers who were accidentally infected. Two of them died.

His recollection is supported by another veteran of the anthrax program, 84-year-old James R.E. Smith. A third bioweapons veteran, William C. Patrick III, confirms two of the cases but says he is not sure about the third.

"Anthrax gets stronger as it goes through a human host," said Walter, now retired in Florida. "So we got pulmonary [lung] spores from Bill Boyles and Joel Willard. And finally we got it from Lefty Kreh's finger."

William A. Boyles, a 46-year-old microbiologist, inhaled anthrax spores on the job in 1951 and died a few days later. Seven years after that, Joel E. Willard, 53, an electrician who worked in the "hot" areas where animals were dosed with deadly germs, died of the same inhalational form of the disease.

The third anthrax victim, Bernard "Lefty" Kreh, was a plant operator who spent night shifts in a biohazard suit, breathing air from a tube on the wall, using a kitchen spatula to scrape the anthrax "mud" off the inside of a centrifuge. One day in the late '50s or early '60s, his finger swelled to the size of a sausage with a cutaneous, or skin, anthrax infection.

Kreh went on to become a nationally known outdoors writer and expert on fly fishing. He did not know that the bacteria that had put him in Fort Detrick's hospital for a month had gone on to another life, too - as a sub-strain of anthrax bearing his initials.

"We called it 'LK' - that's what we'd put on the log sheets for each run," Walter said. A "run" was an 1,800-gallon batch of anthrax mixture, grown in one of the 40-foot- high fermenters inside Building 470, which stands empty at Detrick, its demolition planned.

"Lefty's strain was rather easy to detect," Walter said. When a colony of bacteria grew on growth medium, he recalled, "it came out like a little comma, perfectly spherical."

### **Surprised by his role**

Orley R. Bourland Jr., 75, who worked as a plant manager, said anthrax from Kreh's finger was isolated and designated "BVK-1," for Bernard Victor Kreh.

Walter said he assumes the initials in the log sheets were shortened by someone who knew the source of the new sub-strain of anthrax never went by his formal name. Yet in the secret, compartmented biological program, Kreh himself does not recall ever being informed of the use to which his government put his illness.

"You're kidding," Kreh said. "I'll have to tell my wife." He doesn't remember which finger it was, he said, but he does remember that his wife, Evelyn, could see him only through a glass barrier designed to keep any dangerous microbes contained during treatment.

At 77, Kreh, who lives in Cockeysville, lives the full life of a fishing celebrity, writing magazine articles, taking VIPs on fly-fishing expeditions and endorsing products. A former outdoors columnist for The Sun, he credits his 19 years at Fort Detrick with giving him time to develop his expertise. Because of the rotating night-shift work, he said, "Two out of three weeks I could hunt and fish all day long."

The available evidence confirming the use of bacteria from the two men who died, Boyles and Willard, is less complete. W. Irving Jones Jr., 80, of Frederick, a biochemist, remembers his supervisor, Dr. Ralph E. Lincoln, giving him an unusual request some months after the electrician's death.

"Dr. Lincoln had me pull a sample of Willard's dried blood," Jones said. "We were able to grow [the anthrax bacteria] right up. And it was deadly," a determination he made by testing it on animals.

Jones said he cannot confirm the recollection of others that Willard's sub-strain of anthrax was used for a new weapons strain. That might well have happened, he said, if animal tests showed it to be more virulent than the existing weapons strain, the only means of checking potency at the time. But like any secret program, the Army's biowarfare operation was run on a "need-to-know" basis, and weapons development was not his bailiwick, Jones said.

### **Contradictory evidence**

The evidence on Boyles is contradictory. Patrick, who joined the bioweapons program in 1951, the year the microbiologist died of anthrax, said unequivocally that the Vollum weapons strain was altered by passage through Boyles' body and became Vollum 1B.

"That's where Vollum 1B came from," said Patrick, of Frederick, who eventually headed Detrick's product development division. "It's 1-Boyles."

A review of scientific papers on anthrax published by Fort Detrick scientists in the 1940s and '50s offers indirect support for Patrick's contention. The Vollum strain found in the early Detrick papers is first replaced by a Vollum sub-strain called "M36," produced by the British biological weapons program by passing the Vollum strain through a series of monkeys to increase its virulence.

Then, in the late 1950s, references to the M36 variant of Vollum give way to references to "the highly virulent Vollum 1B strain." No 1A strain seems to have existed. Nor is there an explanation of the 1B sub-strain's origin - a break with the standard practice in describing sub-strains derived from passage through animals.

On the other hand, a medical report prepared by the Army 18 years after Boyles' death states that live anthrax bacteria "could not be (and never was) cultivated from blood, sputum, nose and throat, or skin at any time during the illness, not from tissue and fluids taken at autopsy."

The cause of death was confirmed by an autopsy finding of bacteria resembling anthrax in the brain.

The absence of live bacteria may have a simple explanation. Doctors say a person with inhalation anthrax who is given intravenous antibiotics might soon show no live bacteria, even though the person might still die of toxin produced earlier by the bacteria. But if the medical report is accurate, it appears to rule out the possibility that the weapons strain included bacteria collected during or after Boyles' illness.

It is possible that after Boyles' death, blood taken early in his illness was found to contain anthrax. Or, anthrax spores, which are not killed by antibiotics, might have been found in his lungs after death.

Scientists say it is possible, but not certain, that one pass through a human host would boost the virulence of anthrax. Repeated passes through a particular species usually increase the bacteria's lethality toward that species, said David L. Huxsoll, who oversaw anthrax vaccine tests as commander of the Army's biodefense center in the 1980s.

"If you pass it through a rabbit repeatedly, it will kill rabbits, but it won't kill a cow," Huxsoll said. In humans, "you could have a switch toward more virulence on one passage, but it wouldn't necessarily happen."

Officials of the biological defense program at Fort Detrick, where Vollum 1B is still used to test vaccines, do not know of any connection to the accidental human infections, said Carree Vander Linden, spokeswoman for the Army Medical Research Institute of Infectious Diseases. One account passed down by a former staff member was that Vollum 1B was produced by passage of the Vollum strain through rabbits, she said.

If the "B" actually stands for Boyles, it's news to William Boyles' family. Natalie Boyles said Friday that her husband, Charles M. Boyles, William's son, had never heard of such a thing.

Kenneth E. Willard, Joel Willard's son, said the same. "Shock would be my first feeling," Willard said on hearing the evidence described in this article. "Second would be that my mother or I should have been made aware of it, if it happened. We should have been given more information all along."

But secrecy governed everything in the program, including the deaths, because the American bioweapons makers had a keen awareness of the threat from their counterparts in the Soviet Union, occasionally supplemented by detailed information.

"We used to get intelligence reports telling me what my Russian counterpart was doing," Walter said. "Our rate and the Russian rate was the same - about 7 kilograms of dry anthrax a week."

Another parallel exists. If the United States took advantage of tragic accidents to make its anthrax deadlier, those experiments were mirrored at least once in the Soviet program. Far larger than the U.S. effort, the Soviet biowarfare program was also secretly continued after 1972, when the nations signed a treaty banning such work.

According to Ken Alibek, a former deputy chief of the Soviet program who defected to the United States in 1992, a scientist named Nikolai Ustinov accidentally pricked himself while injecting a guinea pig with Marburg virus in 1988. He died an agonizing death two weeks later.

"No one needed to debate the next step," Alibek wrote in his 1999 book *Biohazard*. "Orders went out immediately to replace the old strain with the new, which was called, in a move the wry Ustinov might have appreciated, 'Variant U.'"

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Washington Times

December 24, 2001

Pg. B1

## Scientists Cite Lax Security At Detrick

By David Dishneau, Associated Press

FREDERICK, Md. — Accounting for deadly microbes in the Army's germ-warfare defense laboratory at Fort Detrick was lax during much of the 1990s, said some former scientists at the post.

Supervisors often did not check whether researchers were keeping track of lab materials as required. When they did, some researchers gave them photocopies of old reports, said Richard Crosland, who was laid off in 1997 from the U.S. Army Medical Research Institute of Infectious Diseases at Fort Detrick.

Others said that while it would have been nearly impossible for an unauthorized person to enter a restricted area, nothing would have prevented approved workers from removing deadly germs from the labs.

"As far as carrying anything out, microorganisms are small," said Luann Battersby, a biologist who left the research institute voluntarily in 1998 after eight years. "The problem would be getting in, not getting out."

Fort Detrick spokesman Charles Dasey said inventory control had been re-emphasized since the recent anthrax mailings, which focused attention on the institute as a potential source of the bacteria.



Mr. Dasey also said Fort Detrick's security staff conducts random exit searches and has video cameras trained on important laboratory areas. Miss Battersby said those measures did not exist when she worked there. The Army said it had accounted for all the Ames anthrax — the strain found in letters mailed to Senate Majority Leader Tom Daschle, South Dakota Democrat, and Sen. Patrick J. Leahy, Vermont Democrat — that the research institute produced.

Yet the scientists, none of whom worked with anthrax, said it would have been easy to walk out with a few cells in a petri dish or smeared on their clothing that then could be grown and processed.

"No matter what you do, there is not any way you can prevent a determined, skillful microbiologist from stealing traces of a microbial culture that he is working with, because it takes so few microbes to start a culture," said Mark Wheelis, a microbiologist at the University of California in Davis who serves on a biological-weapons committee of the Federation of American Scientists.

Mr. Wheelis said labs that work with toxic microbes historically have limited access to those with security clearance, but have paid scant attention to what goes out the door.

"Bioterrorism wasn't a major issue until a few years ago," Mr. Wheelis said. "Nobody was thinking that one of these respected, trusted scientists might actually steal one of the cultures with malevolent intent."

Mr. Crosland, 55, who was suing the Army for age discrimination stemming from his 1997 layoff, said the Army's disinterest in tracking the botulinum toxin with which he worked was typical of what he observed during more than a decade at the research institute.

"There was never an audit in the 11 years I was there as to what was in my laboratory and what was supposed to be there," Mr. Crosland said. "They never tried to balance what was brought into the institution against what was actually in the institution."

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USA Today  
December 24, 2001  
Pg. 6

## Uranium Reportedly Found In Tunnel Complex

### *Official: Men discovered substance in jars, bottles*

By Vivienne Walt, USA Today

KANDAHAR, Afghanistan — Bottles and drums of what may be radioactive liquids were found here in a large underground tunnel complex at what was once a military base controlled by Osama bin Laden's al-Qaeda terrorist network, a local tribal commander said Sunday. In Washington, one U.S. official said some depleted uranium was found in Afghanistan recently but that the material did not appear to be dangerous and that it isn't clear whether Sunday's claim involves the same discovery. Other high-ranking U.S. officials said Sunday that they knew of no discoveries of any radioactive materials anywhere in Afghanistan.

Even so, the local commander's claim, which a U.S. official on the scene did not deny, renewed concerns that bin Laden may have been trying to make a "dirty" bomb that spreads radiation after being exploded.

Haji Gullalai, interim intelligence chief for Kandahar province, says his troops uncovered the tunnels Dec. 5, discovered the suspicious substances — stored in jars and bottles and placed in sealed boxes — and then alerted U.S. forces. The tunnels are at the edge of an air base controlled by U.S. forces.

The U.S. troops "told me, 'Remove your people from this place because this is very dangerous, it is uranium,'" Gullalai said. He said "engineers" arrived to test the contents wearing protective masks and gowns, and "foreign experts told me directly it was uranium."

Marine Corps Capt. David Romley said Sunday in Kandahar that he "cannot deny" that uranium had been found at the airport, where he is stationed as a public information officer. "We are aware that there are CBR (chemical-biological-radioactive)-type environments in the region," he said.

In other news:

- Afghanistan's new government began the task of bringing peace, stability and progress to this country. Cabinet members met for the first time Sunday. "There are no areas in which Afghanistan will not require assistance," said Hamid Karzai, the new leader. It will take "billions of dollars to overcome the difficulties." Karzai took power Saturday. He and 29 members of an interim ruling council have six months to get the nation's recovery on track before ceding power to a two-year transition government. Sometime in 2004, elections and the drafting of a

constitution are scheduled. Karzai pledged Sunday to continue to cooperate with the United States and other nations on finding and holding accountable terrorists and Taliban officials. "They will be taken to court, and they will be given justice wherever it is appropriate," Karzai said.

- Pentagon officials said a vehicle convoy that U.S. jets attacked Thursday in eastern Afghanistan was carrying leaders of the Taliban and al-Qaeda. But Afghan officials said the passengers were Afghans heading to Karzai's inauguration. The United States was investigating reports that local warlords may have misled U.S. forces to draw fire on rivals, not al-Qaeda or Taliban fighters. The attack killed at least 50 people, local officials said.
- The hunt for bin Laden, concentrated in the mountains of eastern Afghanistan, continued with no word on his whereabouts. Pakistani President Pervez Musharraf said Saturday that there is a "great possibility" bin Laden died in Afghanistan. "Maybe he is dead because of all the operations that have been conducted, the bombardment," he said. The Pentagon is sending 10 "thermobaric" bombs to Afghanistan for use against any remaining Taliban and al-Qaeda fighters still holed up in caves and tunnels.

*Contributing: Tom Squitieri in Kabul, Andrea Stone in Washington*

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London Daily Telegraph  
December 24, 2001

## **Inside Bin Laden's 'Nuclear Arsenal'**

By Barbie Dutter in Kandahar and Michael Smith

The sprawling desert compound where al-Qa'eda operatives plotted nuclear destruction is now a desolate wartime junkyard, strewn with abandoned armaments and the rusting hulks of fighter aircraft, some left over from the Soviet occupation.

For several years, Arab members of Osama bin Laden's terrorist network had used the land and buildings abutting Kandahar airport as their principal military camp and training ground in southern Afghanistan.

At the height of operations, up to 1,800 Arabs were based here. Most fled as the American bombs began pounding their camp and tribal fighters led by Gul Agha closed in from the south and east.

A few hundred, determined to achieve martyrdom, stayed behind and fought to the end. Some ambushed their Afghan enemies by holding up their hands in feigned surrender, only then to explode concealed grenades, killing themselves and their captors.

On Dec 5, the day before Kandahar was surrendered by the Taliban, the bloody two-week battle was finally over. Bodies of dead Arabs were left at the airport gates for collection by the Red Cross.

Five yellow apartment buildings, used by local airport workers until they were thrown out to make way for al-Qa'eda families, now sag due to a deep central bomb crater in their roofs.

Shredded curtains hang limply from the glass-free windows. A crimson three-piece suite is still visible in a first-floor living room. Outside a brocade baby jacket lies forlornly in the dust.

In one unscathed command building, opposite a crumpled radar dish, a scrap of paper on the floor had an ironic message scribbled in Arabic: "Victory is close."

A network of trenches, some 12 feet deep, carve through the arid landscape towards the jagged mountains on the horizon. Here the die-hard fighters dug in, their sleeping mats and cartons of ammunition still in place.

Concealed beneath this complex, known locally as Turnak Farms, is the intricate network of concrete tunnels where radioactive materials including uranium 238 are now thought to have been stored.

Little had been known of this subterranean maze, or its sinister contents, until Haji Gullalai, the interim intelligence chief for Kandahar province, disclosed details yesterday of the find there.

Bin Laden's attempts to acquire a nuclear capability date back to the early 1990s, according to testimony to the trial of four al-Qa'eda men who carried out the 1998 bomb attacks on American embassies in Kenya and Tanzania.

Jamal Ahmed Fadl said he was paid \$10,000 to buy uranium from a former Sudanese army officer.

Asked in October by a Pakistani journalist whether he had chemical and nuclear weapons, bin Laden replied: "I wish to declare that, if America used chemical or nuclear weapons against us, then we may retort with chemical and nuclear weapons. We have the weapons as a deterrent."

Donald Rumsfeld, defence secretary, said last week that a sweep of caves around Kandahar airport had uncovered material associated with weapons of mass destruction.

American intelligence also obtained details of a recent meeting in which bin Laden was present when one al-Qa'eda terrorist produced a canister of what he claimed was radioactive material.

Two Pakistani nuclear scientists admitted to the country's security service earlier this month that they had long discussions about nuclear, chemical and biological weapons with bin Laden at a meeting in Kabul in August. Bin Laden told them he had obtained, or had access to, radioactive material acquired from the former Soviet Union by the Radical Islamic Movement of Uzbekistan.

Russian mafia have been involved in repeated attempts to get hold of radioactive material. Russian officials reported dozens of attempts to steal enriched uranium or plutonium since 1990.

A Russian general said last month that terrorists had tried twice and failed to penetrate top-secret nuclear storage facilities. But very little of the material they have tried to sell has been weapons grade uranium.

Allied intelligence agencies believe that bin Laden could easily have constructed a so-called "dirty bomb" by wrapping radioactive material such as uranium 238 around a conventional explosive.

Such a bomb would not have the same blast effect as a nuclear bomb but would still spread radiation over a large area.

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New York Times  
December 22, 2001  
Pg. 1

## **U.S. Inquiry Tried, But Failed, To Link Iraq To Anthrax Attack**

By William J. Broad with David Johnston

Shortly after the first anthrax victim died in October, the Bush administration began an intense effort to explore any possible link between Iraq and the attacks and continued to do so even after scientists determined that the lethal germ was an American strain, scientists and government officials said.

But they said that largely secret work had found no evidence to back up the initial suspicions, which is one reason administration officials have said recently that the source of the anthrax was most likely domestic.

For months, intelligence agencies searched for Iraqi fingerprints and scientists investigated whether Baghdad had somehow obtained the so-called Ames strain of anthrax. Scientists also repeatedly analyzed the powder from the anthrax-laced envelopes for signs of chemical additives that would point to Iraq.

"We looked for any shred of evidence that would bear on this, or any foreign source," a senior intelligence official said of an Iraq connection. "It's just not there."

The focus on Iraq was based on its record of developing a germ arsenal and also on what some officials said was a desire on the part of the administration to find a reason to attack Iraq in the war on terrorism.

"I know there are a number of people who would love an excuse to get after Iraq," said a top federal scientist involved in the investigation.

From the start, agents searched for clues in domestic industry, academia and terror groups. But while investigators were racing to link the Ames strain to Iraq, they have only recently begun examining government institutions and contractors in this country that have worked with that strain for years.

In hunting for a culprit in the attacks that killed five people, agents have chased tens of thousands of tips in the past two months and conducted thousands of interviews, law enforcement officials said.

They have traced prescriptions for the antibiotic Cipro, on the chance the perpetrator took the drug to guard against the disease. They have also checked the language and block- style handwriting on letters sent with the anthrax against digital databases of threatening letters maintained by the Federal Bureau of Investigation, Secret Service and Capitol Police.

But officials said no likely suspects have emerged and they are settling in for what they fear could be a long haul.

The most promising evidence is still the anthrax itself, which federal scientists and contractors are studying for clues to its origin. The government tried to find links to Afghanistan and Iraq in the substance as well.

One discovery early in the inquiry seemed to undercut the foreign thesis. The anthrax used in the first attack, in Florida, and in subsequent attacks turned out to be the Ames strain, named after its place of origin in Iowa. While

investigators found that this domestic variety of anthrax had been shipped to some laboratories overseas, none could be traced to Baghdad.

Nevertheless, government officials continued pushing the Iraq theory, scientists and officials involved in the inquiry said. They saw an intriguing clue in reports that Iraq had tried hard to obtain the Ames strain from British researchers in 1988 and 1989, raising suspicions that it had eventually succeeded.

Federal scientists hunted down records and biological samples from an investigation of Iraq's biological arms program, which was conducted by the United Nations in the 1990's. Those samples were analyzed in laboratories run by two biologists, Paul S. Keim of Northern Arizona University and Paul J. Jackson of the Los Alamos National Laboratory, in New Mexico.

But in the end few samples from Iraq's arsenal were found, and those that were turned out to have nothing in common with the Ames strain, officials said.

A different line of inquiry sought to re-examine seven anthrax strains that the world's largest germ bank, the American Type Culture Collection, in Manassas, Va., sold to Iraq in the 1980's, before the government banned such exports.

None of the strains were identified as Ames. But scientists inside and outside the government speculated that mislabeling might have inadvertently put the potent germ in Baghdad's hands. More laboratory tests were ordered. Raymond H. Cypess, president of the germ bank, said recent investigations had disproved the mislabeling idea. "We never had it," he said of the Ames strain, "and we can say that on several levels of analysis."

The Iraq inquiry also looked for chemical clues. An early focus was bentonite, a clay additive that is one of the few substances identified publicly that can help reduce the static charge of anthrax spores so they float more freely and potentially infect more people.

Richard O. Spertzel, a retired microbiologist who led the United Nations' biological weapons inspections of Iraq, told investigators that Iraq had explored using bentonite in its germ weapons programs. But Maj. Gen. John Parker of the Army's biological research center at Fort Detrick, Md., said in late October that tests had turned up no signs of aluminum — a main building block of bentonite.

"If I can't find aluminum," General Parker told reporters, "I can't say it's bentonite."

Despite the scientific findings, the sophistication of the anthrax found in the letter mailed to Senator Tom Daschle, the majority leader, has kept Dr. Spertzel and others convinced that Iraq or another foreign power could be behind the attacks.

Richard H. Ebright, a microbiologist at Rutgers University who closely follows the anthrax inquiry, recently said that the Baghdad thesis "should not be dismissed as a desperate reach for a *casus belli* against Iraq" and is still worth investigating.

Publicly, White House officials have made no mention of the failure to find an Iraqi connection, but they have noted the inquiry's intensified focus on the United States. "The evidence is increasingly looking like it was a domestic source," the White House Press secretary, Ari Fleischer, said on Monday.

Tom Ridge, the director of homeland security, said in a statement that he initially assumed that the culprits were foreigners. "Like many people, when the case of anthrax emerged so close to Sept. 11, I couldn't believe it was a coincidence," Mr. Ridge said. "But now, based on the investigative work of many agencies, we're all more inclined to think that the perpetrator is domestic."

It remains unclear whether the focus on Iraq diverted investigators from the domestic inquiry. But some scientists say a decision made early on suggests that it might have.

In early October, the F.B.I. raised no objections when officials at Iowa State University, where the Ames strain was discovered, said they planned to destroy the university's large collection of anthrax spores for security reasons.

Many biologists now say that step might have destroyed potential genetic clues to the culprit's identity.

Two months later, the investigation is largely focused in the United States. As the scientific inquiry into the anthrax itself continues, the F.B.I. is also employing more traditional forensic and investigative techniques to find out who sent the lethal letters.

Agents have compiled lengthy lists of who might have manufactured, tested, transported or stored anthrax. They have questioned manufacturers and marketers of biochemistry equipment and specialized machinery needed to make the material. They have inspected scientific literature, which could provide clues about who has knowledge to make anthrax.

But few clues have emerged. So far only three letters — those sent to NBC, The New York Post and Mr. Daschle — have been analyzed. A fourth letter, sent to Senator Patrick J. Leahy, Democrat of Vermont, is undergoing painstaking analysis by a number of laboratories, officials said.

All of the letters were photocopies and none appeared to contain any fingerprints. The plastic tape on the envelopes was a mass marketed variety. The paper on which the letters were written was an average size. The envelopes were

prestamped and widely available. The marks left by the photocopier have been carefully studied, but have revealed no clues.

One senior official said nothing the investigators have found has led to anyone who might remotely be called a suspect. Several people who seemed to fit the F.B.I.'s profile of a science loner had been aggressively investigated, but no one has emerged as a serious subject.

"Still, the more you are out there, the more things bubble up," the official said. But asked whether recent news reports of a possible suspect in the case were true, the official replied, "I only wish that was true."

Some tips have seemed encouraging, but only for a time.

"We run out every lead and we give these people a real hard look and real hard shake before we take them off the screen," the official said. "There have been people who we have placed a little higher priority on than others." But then they fall off.

Some senior Bush administration officials have begun to worry privately that the case might take decades to solve, likening it to the Unabomber investigation that baffled investigators for nearly 20 years until David Kaczynski became suspicious of his brother Theodore and alerted the F.B.I.

Investigators have used various strategies to find suspects, but have often been frustrated. When they tried to track down people who had sought prescriptions for Cipro in the weeks before the anthrax mailings, the effort quickly bogged down. "Do you know how many people take Cipro in this country?" an exasperated official said, explaining that Cipro is used to treat a variety of ailments.

Investigators also said they were continuing to examine the possibility that the culprit might have purchased stock in the company that makes Cipro in an effort to profit from the attacks.

The newest front in the search for culprits is the examination of government research institutions and contractors. The reason to look there is plain: Some of them have the Ames strain and know how to turn it into the kind of deadly powder used in the attacks.

But that has added yet another complication to the already challenging inquiry. After all, investigators have relied on these same experts for scientific advice from the earliest days of the investigation, back when Iraq was a prime suspect.

"It puts us in a difficult position," one senior law enforcement official said. "We're working with these people and looking at them as potential suspects."

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Wall Street Journal  
December 24, 2001

## **U.S. Begins Testing Security Systems Of University Labs That Use Anthrax**

By John Fialka, Staff Reporter of The Wall Street Journal

WASHINGTON -- When recent news reports suggested that anthrax sent to Senate offices might have come from U.S. defensive stocks at Utah's Dugway Proving Ground, the Army issued official reassurance: All its anthrax there "has been accounted for."

But while it may be possible to strictly account for the military's guns, bombs and nuclear weapons, tracking deadly, microscopic biological agents that can reproduce themselves poses a far bigger challenge. Doing so requires much more rigorous security that must encompass a raft of civilian as well as military facilities. Even then, the effort could fall short.

Now, federal investigators from the Department of Health and Human Services are taking a controversial first step: They have begun testing the security systems that are supposed to protect university laboratories from thefts of anthrax, and some 30 other biological agents that terrorists could use.

The university probes are the beginning of what probably will be a major expansion of federal regulation of the thousands of labs, pharmaceuticals companies and clinics that handle deadly agents. Until the recent anthrax attacks in Washington, New York and Florida, the facilities mostly hewed to a kind of honor system -- one that assumed no one with access would use the agents to do harm.

And in a sign of the times, President Bush gave the HHS power to invoke military secrecy about its university probes. "We will not discuss any of these activities publicly," says Ben St. John, a spokesman for the HHS Office of Inspector General. "They relate to national security."

Sen. Dianne Feinstein last week helped pass a bill in the Senate that would require HHS to develop regulations for a registry of such labs, criminal background checks of employees and government certification for research involving deadly agents. The House has passed a similar measure. "The big emerging threat here is the rogue individual coming into possession of weapons of mass destruction. This is not just some theoretical issue," the California Democrat says.

The scientific community mostly is amenable to increased oversight. But some also worry about how the system might interfere with their work.

"Scientists want security as much as the nonscientists want it," says Robert E. Shope, a professor of pathology at the University of Texas Medical Branch in Galveston, where, he acknowledged, the first HHS investigation is taking place. But he and other scientists express concern about the potential cost and impact of the proposed requirements, such as the background checks for handlers of dangerous biological agents.

"If it's the kind of check you use for buying a gun, that's fine. If it's a security clearance, that will be a hassle," says Dr. Shope, an expert on defenses against biological weapons.

No one knows exactly how many facilities handle anthrax and other deadly agents -- the number even includes neighborhood clinics and small veterinary operations -- but Sen. Feinstein says the Federal Bureau of Investigation has told her the U.S. could have as many as 22,000 such sites. The pending legislation would affect only a fraction, however, since it applies only to those that keep dangerous biological agents on hand on a regular basis. Sen. Feinstein singles out for criticism the estimated 250 university labs that she says have a "laissez faire system" when it comes to security.

At a recent Senate hearing, Ronald Atlas, president of the American Society for Microbiology, explained to her the difficulty that regulators -- and scientists -- face in trying to keep tabs on deadly materials: "If I fill this glass with ... a chemical, and someone takes half of it, you know it's gone. But if it's a biological agent and I fill it with water, I need to take only a pinpoint out of there that you would never notice. And then I can grow tons of it elsewhere."

Dr. Robert Rich, president of the Federation of American Societies for Experimental Biology, which includes some 60,000 scientists, says he is concerned about possible restrictions on foreign-born graduate students and scientists with keys to university labs. "They are essential to American science," he argues. Dr. Rich suggests perhaps adopting rules to limit the number of labs handling dangerous agents, and using "buddy systems" requiring more than one scientist to be present during experiments.

Dave Franz, former director of the Army laboratory at Fort Detrick, Md., which uses anthrax to test vaccines, says further regulating scientists who work on defenses against biological warfare not only could be expensive, but could well stifle productivity and creativity by draining funds and time that otherwise would be directed toward research. "We need to make sure that there will be benefits for the costs involved," he says.

Blind alleys and false leads have baffled not only the thousands of FBI agents tracking the source of the anthrax attacks, but the public as well. Such dead ends are familiar to biological-weapons experts, however. "You are dealing with processes that can be very easily hidden. It took us four and a half years to find hard evidence of Iraq's hidden program," says Terry Taylor, a former United Nations weapons inspector. He now heads the Washington office of the International Institute for Strategic Studies, a London-based research group.

U.S. diplomats have shared the headaches as they have tried, for more than a quarter century, to negotiate effective regulations for enforcing a 1972 global treaty banning biological weapons. While some European allies insist that an accounting system enforced by frequent inspections would deter work with biological weapons, the U.S. has argued that cheaters could easily evade detection because their records could provide cover for clandestine activity.

"This is an extremely difficult problem, one that we don't have any good solutions for," said one U.S. official, who has been following the talks for seven years.

Government investigators are trying both to learn how to identify secret weapons plants and to identify what they produce. A group of federal agencies recently built a small pharmaceuticals plant to mass produce bacteria that are close relatives of anthrax, but harmless. The plant, built from cheap, commercially available equipment, was hidden amid the dry mountainous terrain at the Department of Energy's sprawling Nevada Test Site, to see how difficult it would be to detect.

They ran two tests using Project Bachus -- while the acronym suggests the Roman god of wine, it actually stands for Biotechnology Activity Characterization by Unconventional Signatures -- the last one in August 2000. Maj. Linda Ritchie, a Defense Department spokeswoman for the project, says the results remain a classified secret.

While the experts have wrestled with the peculiarities of biological weapons for years, Congress and the regulatory agencies are newcomers. Since 1997, federal law has required any transfer of dangerous biological agents to be



registered with the government. Until then, scientists informally transferred small vials of agents among each another, making it impossible to know precisely whether a specific agent that was produced at one laboratory later ended up at another.

Mr. Taylor, the former U.N. weapons inspector, is matter-of-fact about the likelihood of deadly acts against the U.S. "Attacks like this will happen from time to time," he says. "What we've got to do is minimize them."

### **Biowarfare Capability and Threats?**

A number of nations, including some that have been hostile to the U.S., are believed to have stocks of biological agents that have been converted to weapons.

1. U.S. -- Dismantled offensive-weapons program but continues secret "defensive" research.
2. RUSSIA -- Largely dismantled the former Soviet Union's offensive- weapons program, but some military centers haven't been fully inspected.
3. BRITAIN -- Continues to do defensive research.
4. IRAQ -- Is rebuilding a biological-weapons program, recent intelligence suggests.
5. CHINA -- May be reviving an offensive-weapons program.
6. EGYPT -- Likely maintains a capability for bio-warfare.
7. IRAN -- Probably has a small quantity of biological weapons.
8. ISRAEL -- Likely has a bioweapons program similar to those the U.S. and former Soviet Union have dismantled.
9. LIBYA -- May be trying to weaponize biological agents.
10. NORTH KOREA -- May have tested bioweapons on island territories.
11. SYRIA -- Is believed to be developing biowarfare capability.
12. TAIWAN -- Has shown interest in biological-weapons research.

*Source: The Henry J. Stimson Center, from U.S. government sources*

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Wall Street Journal  
December 24, 2001

## **FBI Overlooks Foreign Sources Of Anthrax**

By Edward Jay Epstein

The government seems hell-bent in its effort to limit the suspects in the anthrax mystery to a domestic loner. First, the FBI's behavioral analysis came up with the profile of a lone wolf based on its "exacting handwriting and linguistic analysis" of one letter that contained 18 words and another that contained 27 words. It suggested that the writer of these two letters was a single disgruntled American, not connected to the jihadist terrorists of Sept. 11 (even though the letter used the plural pronoun "we" and began with an underlined "9-11").

The problem is that this approach could not apply to the attacks for which no letter was found, such as the one in Florida. More important, the "lone wolf" theory failed to explain how a single person could acquire a virulent strain of Ames bacteria and weaponize it into an aerosol by milling the spore to one to five microns in diameter and producing billions of spores.

Initially, the FBI theorized that this strain was widely available, since it had been circulated to thousands of researchers, but this confused the nonvirulent Ames strain (which lacked an outer protective shells and toxic proteins) with the virulent one contained in the letters. As it turned out, only a small number of repositories -- fewer than 20 -- ever had access to the virulent strain. The search might have been narrowed down to a single repository if the FBI had not allowed an Agriculture Department facility at Iowa State to destroy through incineration the specimens that constituted the "family tree" of the Ames strain (which had originally been found in 1932 in Ames, Iowa).

Next, an analysis at Northern Arizona University in Flagstaff found that the DNA of the anthrax used in the attacks was indistinguishable from an Ames strain sample provided by the U.S. Army Medical Research Institute of Infectious Disease at Fort Detrick, Md. At this point, the White House spokesman Ari Fleischer commented that the "evidence is increasingly looking like" the anthrax-laced letters came from a domestic source.

This assumption is premature. The virulent strain of the Ames virus is also found abroad.

David Franz, who headed the biological-research program at Fort Detrick between 1987 and 1998, said that when the Army wanted to conduct defensive experiment on the Ames strain, it had to obtain the "information" from a British military lab that did experiments with Ames anthrax in the powdered form. Evidently, the virulent Ames

strain had been sent from the U.S. to Britain, and, after the U.S. destroyed its stockpiles in the 1970s, samples had to be obtained from the British facility at Porton Downs, specifically from the Center for Applied Microbiology and Research (CAMR). Martin Hugh-Jones, a scientist at Louisiana State University who received a sample from CAMR in the 1990s, recalls that it was marked "October, 1932." So the matching sample traces not only to the U.S. but to Britain.

The security of the British anthrax bacteria is complicated by its privatization. In 1993, at the time it was supplying the virulent Ames strain sample, CAMR was privatized by the British government and became part of Porton Products Ltd. Porton Products was owned by Speywood Holdings Ltd., which, in turn, was owned by I&F Holdings NV, a Netherlands Antilles corporate shell owned by Fuad El-Hibri, a Lebanese Arab with joint German-U.S. citizenship; his father, Ibrihim El-Hibri; and possibly other undisclosed investors.

Prior to his taking over this biotech company, Fuad El-Hibri had worked in the mergers-and-acquisitions department of Citibank in Jeddah, Saudi Arabia, where he specialized in arranging investments for large Saudi investors. Saudi Arabia then was interested in obtaining an anthrax vaccine to counter Saddam Hussein's biological warfare capabilities. But the U.S. would not provide it.

So when Mr. El-Hibri took over the British biotech lab, he reorganized its bio-terrorism defense business, and arranged deliveries of biotech defense products to Saudi Arabia. Mr. El-Hibri was unavailable for comment, but the ownership is a matter of record and he has not made a secret of his involvement in bio-warfare research. Indeed, he testified before Congress in 1999: "I participated in the marketing and distribution of substantial quantities of two bio-defense vaccines -- botulinum Type A and anthrax."

Even more intriguing, Mr. El-Hibri's interest in anthrax vaccines did not stop with CAMR. In 1998, he arranged a leveraged buyout of the Michigan Biological Products Institute. MBPI, which originally had been owned by the state of Michigan, held the exclusive contract for providing the U.S. government with anthrax vaccine. While its vaccine worked well against the Vollum strain of anthrax (used by Russia), it was more problematic against the Ames strain. So it had conducted tests with the virulent Ames strain on guinea pigs, mice and monkeys with mixed results. BioPort's spokesperson confirmed that it had access to the virulent Ames strain for testing on animals.

To take over MBPI, Mr. El-Hibri became an American citizen, and gave retired Adm. William J. Crowe Jr., a former chairman of the Joint Chiefs of Staff, a large block of stock in Intervac, one of the corporations involved in the maneuver. The controlling shareholder was the same I&F Holdings used to take control of the British biotech lab, CAMR.

He then renamed the company BioPort. BioPort, which controlled America's anthrax vaccine, was apparently of some interests to scientists in Afghanistan since an environmental assessment report of its planned laboratory renovations was turned up in the house of a Pakistani scientist in Kabul.

So far, the offshore availability of anthrax has been overshadowed by the search for a domestic lone wolf. The investigative focus needs to be widened.

*Mr. Epstein is the author of "Dossier: The Secret History of Armand Hammer."*

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New York Times  
December 26, 2001  
Pg. 1

## Tracking Bioterror's Tangled Course

By Eric Lipton and Kirk Johnson

There was no commotion, no outcry. Except for the blond woman in the black dress sitting by herself in a back pew, no one knew that anything unusual had happened.

Johanna C. Huden, a 31-year-old editorial assistant at The New York Post, had first noticed the strange blister on her right middle finger the day before, Sept. 21. She had not thought too much about it; surely it was just a bug bite or a cat scratch.

Now, though, as she sat in the Long Island church, half-distractedly watching the wedding ceremony, the finger began to itch. She reached down and rubbed it gently against the coarse linen of her dress. Suddenly, a watery white liquid bubbled out across the cloth.

"Ee-yew," Ms. Huden recalls saying to herself. "That is just really bizarre."

The conventional understanding of America's first-ever anthrax attack says Ms. Huden was a bit player — a victim of skin, or cutaneous, anthrax who fully recovered and got on with her life. As anthrax spores spread through the mail, and events blurred across six states and the District of Columbia, hers became no more than a name in the middle of a long list of victims.

Yet the conventional understanding is wrong. In the light of hindsight, scientists can now see that the outbreak actually began that September afternoon.

Ms. Huden was the anthrax index patient — the pivot point upon which every outbreak investigation is based, the crucial clue that every medical investigator hopes can be found, and fast. But on that muggy day at Mary Immaculate Church, she suffered her mysterious wound very much alone.

No one knew.

Those words have become the theme of the medical investigation of the anthrax attacks, a refrain of epidemiological regret.

Certainly, the medical investigators have done much to contain the outbreak and save lives. Yet the inside story of that inquiry — pieced together from interviews with many of the lead investigators and other health-care officials — is also a tale of missed cues, misread evidence and erroneous assumptions that led scientists and decision makers to misjudge the threat to postal workers and, through the mail system, to the American public.

For weeks, primary-care doctors individually struggled to diagnose a disease they had never seen and never imagined they would see. In that uncertainty, medical investigators could never quite discern the sequence of infection that began with Johanna Huden. And only through the bitter experience of 5 deaths and 18 other confirmed or suspected cases did they learn how much they did not know about how anthrax spores traveled and infected their victims.

Of course, the medical inquiry is just one of several intertwined strands of the government's still unresolved investigation of the attacks. In recent weeks, in fact, the other aspects have taken center stage, as microbiologists try to pinpoint the nature and source of the mailed anthrax and criminal investigators search for a suspect.

But underpinning those efforts, at every point, are the epidemiologists, the medical detectives on the ground, tracing how the infection spread and whether the underlying pattern of cases can offer up some revelatory clue from the haze.

They can see now that Johanna Huden arrived first in that place of fear and fog. For weeks after the wedding, despite repeated visits to doctors and emergency rooms, her infection worsened and the cause of her illness was missed. And no one knew.

Florida

A First Case

To Investigate

Every disease outbreak tells a detective story. The epidemiologist's job is to piece together the narrative threads — to work back to the beginning and so hasten the end.

Assume nothing; let the evidence speak for itself. That gumshoe credo was very much on Dr. Bradley A. Perkins's mind as the chartered jet roared toward South Florida on the afternoon of Oct. 4, carrying his 12-member team from the Centers for Disease Control and Prevention in Atlanta.

Dr. Perkins, a boyish-looking 42, chief of the centers' special pathogens branch, sat at a small conference table, chatting with the adrenaline-pumped scientists and passing around the latest papers on anthrax. But mostly he tried to concentrate on telling himself not to think about terrorists.

Everyone at the centers, of course, had been worrying about just that since Sept. 11 — planning for attacks of everything from sarin gas to smallpox to anthrax, perhaps the most widely developed bioweapon in history. But at that moment, all anyone knew was that a tabloid newspaper editor named Robert Stevens was dying of inhalation anthrax in a Palm Beach County hospital.

Perhaps Mr. Stevens had been infected deliberately — the first periscope glimpse into a mass bioterror attack.

Perhaps. It was also possible that the bacteria had been picked up naturally, from a sick cow, even one long dead; anthrax spores could lie dormant in the ground for decades.

For now, this was just a medical case, though Dr. Perkins knew well that on his word a huge criminal investigation would be unleashed. The fear of being wrong was intense. "You don't pull the bioterrorism trigger lightly," he would say later.

Let the evidence speak for itself. That's how epidemiology had always worked. It was a rhythm of science, intuition and observation — an art essentially unchanged since the 1850's, when a doctor named John Snow stunned the medical world with the insight that every family with cholera in his London neighborhood drew water from the same pestilential well.

Dr. Snow took off the well's pump handle and became a legend. His cholera-cluster maps became the motif of a new science, premised on the belief that disease, in the dawning age of the germ theory, could be chased from the shadows of superstition and hunted to the ground.

Now, flying to Palm Beach, Dr. Perkins and his team planned the hunt for the handle of this latest pump. They would meet with county health officials, then fan out, testing as they went — Mr. Stevens's home, office, whatever made sense — with swabs that would pick up any errant anthrax spores.

By the time they landed, Dr. Perkins felt satisfied that he had pushed as hard as he should the admonition to leave no stone, quite literally, unturned.

But then, leaving the airport, he saw something that tested his assumptions all over again. Flight Safety International, the pilot school where some of the Sept. 11 hijackers were thought to have trained, had a flight simulator right at the airport. Could it be coincidence that here, of all places, and now, of all times, anthrax would just happen?

As he drove his rental car past the building, he had more or less the same thought that had flickered across Johanna Huden's mind two weeks before.

"This is weird," he said to himself.

The Northeast

Though Unreported,

Patients Accumulate

Actually, up North, seven people were already mysteriously ill.

Teresa Heller, a letter carrier assigned to West Trenton, N.J., had checked into a hospital with an infection on her arm.

Richard Morgano, a maintenance worker at the mail distribution center in nearby Hamilton Township, had a similar lesion on his arm.

In Manhattan, the infant son of an ABC news producer was in a hospital, gravely ill with a high fever and an ulcerated arm.

Erin M. O'Connor and Casey Chamberlain, assistants to the NBC News anchorman Tom Brokaw, had skin lesions — Ms. O'Connor on her collarbone, Ms. Chamberlain on her leg.

Claire Fletcher, a CBS News aide, had two small infected pimples on her face.

And Johanna Huden had been to two emergency rooms and seen more than half a dozen doctors. Ultimately, on Oct. 1, a surgeon at New York University Medical Center had cut the dead skin out of her finger. Ms. Huden left the hospital with a large bandage on her hand but no better idea of what had made her sick.

None of those cases — misdiagnosed and misunderstood — were reported into the medical surveillance system on which epidemiology depends.

Without realizing it, Dr. Perkins and his team were starting in the middle. The Stevens case, they believed, was the index case. And that misperception was the first of many to guide the investigation — in Florida and then up North — in the coming days.

The next morning, Oct. 5, the scientists fanned out, checking things; ole the vacuum-cleaner bags in Mr. Stevens's house and the ventilation system on the roof of the American Media International building, where he worked.

They went to a store where he bought spices in bulk; the store kept live animals, they had been told, and had to be checked as a possible source of natural contagion. They visited his favorite fishing hole and traced his Sunday bicycle route. A separate team went to North Carolina, where Mr. Stevens had first felt ill while visiting his daughter.

All trails led nowhere. The dead-cow vector, even as a remote hypothesis, faded. Mr. Stevens died that day, unable to help them.

Various pieces of evidence, though, eventually pointed toward the company's mailroom. Tests of a mailroom worker, Ernesto Blanco, hospitalized with a still-undiagnosed illness, turned up an anthrax spore in his nasal passage. Spores were also found on Mr. Stevens's computer keyboard.

But when the investigators first arrived in the mailroom late on the afternoon of Oct. 5, they realized to their horror that, in their exuberance or thoroughness, they had used up all but one of their cotton swabs.

One small swab to test the whole room — it seemed like the wildest shot in the dark.

So the scientists stood amid the postage meters and scales and argued the point: Though they could get more swabs, this was it for the day, and at a time when every hour felt laden with portents and pressures, the decision seemed enormous. Finally, they decided to use the last swab on a bin holding letters and packages for the photo department, where Mr. Stevens had worked.

The results came back the next day with a direct bull's-eye. The mail bin was heavily contaminated, and the conclusion, Dr. Perkins said, was unmistakable: Mr. Stevens had been the victim of a criminal act.

The finding sent a shock wave through the nation and changed everything about the case. This was not simply a medical investigation anymore. The F.B.I., which, like the disease control centers, had been preparing for bioterror attacks since Sept. 11, took over.

For the epidemiologists, the discovery was as if a fog had lifted just long enough to see that they were headed out into uncharted, and uncomfortable, territory. They were not just hunting an organism with genes and biological logic that could be tracked the traditional way. This was a weapon, deliberately wielded, with an exponentially increasing number of possible sources. That mixture — the biological and the psychological, the genetic and the perversely pathological — fundamentally altered the task at hand.

"Usually we're talking about trying to define normal biologic transmission," Dr. Perkins said. "This is a terrorist transmission route."

Investigators followed that route from the mailroom to the delivery truck, to the Boca Raton post office and through the county's mail system, finding spores all along the way.

What they did not find were any sick postal workers. They had no reason to connect Mr. Stevens to Teresa Heller and Richard Morgano and the others up in New York, because they did not yet know they existed.

The postal system, they now knew, had been used as an instrument of attack, an important finding. But it went only so far. Since no postal workers seemed even remotely affected, the postal connection was treated as one clue among many, not the sure, single pathway suffused with risk.

On Oct. 9, President Bush told an edgy nation that the Florida case appeared to be "an isolated incident."

But Dr. Perkins, the epidemiologist, recalls feeling "extremely uncomfortable."

"We know someone is out there with the ability to cause disease, but we don't know how much mail is out there or whether the mode of delivery is going to change," he recounted. "We're operating on data that are inadequate for the situation."

New Jersey

Delayed Recognitions

Of Cases Missed

"You heard about Hamilton?"

That was the question Dr. Michael Dash's wife yelled out as he arrived home Saturday afternoon, Oct. 13, on what was to have been a quiet weekend with the family.

She had been checking the headlines on the Internet that afternoon when she happened upon a news bulletin: an anthrax-laced letter had been found in New York that had been postmarked at the Hamilton Township mail-sorting center near Trenton.

"Oh no," Dr. Dash thought after reading the story. "That is what that man had."

That man was Richard Morgano, 39, a barrel-chested maintenance worker at the Hamilton postal center, who had come into Dr. Dash's New Jersey office on Oct. 1 with a strange infection.

Mr. Morgano had scratched his arm on Sept. 20 while reaching into a Hamilton mail-sorting machine. A blistered wound had formed, oozing a yellowish liquid around back spots of dead skin. His arm was twice its normal size, his lymph nodes swollen and his hand unbendable.

At that first meeting, Dr. Dash put Mr. Morgano on a strong dose of antibiotics and, after checking a reference book, asked Mr. Morgano a line of questions fearing he was facing a condition he had never before seen.

"You doing any hunting recently? You've been working with pelts? Been around goats or any farms?" Dr. Dash asked, checking possible natural causes of anthrax.

But Dr. Dash had never imagined that a postal worker in central New Jersey would be the victim of a terrorist attack. So when Mr. Morgano answered "no" to each of the questions about natural sources of anthrax, Dr. Dash had ruled it out.

Dr. Dash was far from the only physician who had a sudden and disturbing realization that weekend. The discovery in New York of the anthrax-contaminated letter, which had infected an NBC News employee, evoked a series of calls to local and federal authorities in New York and New Jersey.

In fact, on the same day Mr. Morgano was at Dr. Dash's office, Ms. Huden and the ABC producer's baby were just eight floors apart at the New York University Medical Center.

"I kick myself when I think about it now," Dr. Douglas Yoshia, the attending physician on duty when Ms. Huden showed up at the emergency room.

Like Dr. Dash, upon hearing about the NBC case and the Hamilton letter, Dr. Yoshia immediately realized Ms. Huden had had anthrax. But he had one more complication to overcome: He could not remember her name. It took a few days of searching through hospital records to track it down and by the time he reached Ms. Huden, her case was already being investigated.

It was only once these cases bubbled to the surface that the true pattern of the outbreak started to become apparent. And, perhaps most important, health officials now had hard evidence that postal workers were, at a minimum, at risk of cutaneous anthrax.

Even so, the full significance of this discovery was not initially recognized. It took five days to confirm that Mr. Morgano and Ms. Heller, the West Trenton letter carrier, had anthrax.

By Oct. 18, when these cases were confirmed, seven other postal workers — three in New Jersey and four in Washington — had begun to feel sick, most with the more serious version of inhalation anthrax. The second wave was under way, this time from poisoned letters postmarked at Hamilton on Oct. 9 on their way to Capitol Hill.

In this wave, a few of the cases would be identified quickly, and the postal employees would recover. But again, some doctors who encountered these sick postal workers would not make the anthrax connection. And this time, the implications would be fatal.

District of Columbia

The Medical

Becomes Political

It was still dark and silent that Saturday morning, Oct. 20, when Dr. Michael S. A. Richardson picked up the telephone in the hallway of his Washington townhouse to call the office. During the night, he had received a message on his new cellphone — issued to go with his new job as an acting senior deputy director at the District of Columbia Department of Health — but no one had taught him how to retrieve messages.

Now, as he realized what he had missed during the night, he stretched the phone cord into the living room, perched on the arm of a chair and scribbled notes as fast as he could.

A worker at the Brentwood Road postal center in Washington, Leroy Richmond, had been tentatively diagnosed with inhalation anthrax. The implication was staggering.

"We are in the middle of this," Dr. Richardson recalled thinking. "And it's a huge deal."

Washington is where the anthrax story became political, social, even racial, theater. And it is where the assumptions of the investigation — woven from decades of conventional scientific wisdom and weeks of evidence and missed cues — all unraveled.

When he picked up the phone that morning, Dr. Richardson did not know about the second wave. What he — and the rest of the nation — did know was that just five days earlier, on Oct. 15, an anthrax-laced letter had been opened in the Capitol office of Tom Daschle, the Senate majority leader. And though reports conflicted, suspicions ran deep — and had been played in banner headlines — that the material in this letter was dangerously different. Many of the government's bioweapons experts were saying that the anthrax spores seemed much smaller, perhaps capable of staying airborne longer, and thus far more likely to penetrate deep into the lungs.

Even so, Dr. Richardson knew of no postal worker who had developed the life-threatening inhaled form of the disease, despite the trail of spores across the postal system. And the disease control agency had said that only people in the immediate vicinity when a poisoned letter was opened were at risk.

Dr. Richardson also knew that an initial test at Brentwood Road, where the Daschle letter had been processed, had turned up no evidence of contamination. And there was the curious case of the worker at the P Street station, who had tested positive for inhalation-anthrax exposure immediately after the Daschle letter, but then, after retesting, was put back on the negative list. Both those results seemed to reinforce the conventional wisdom.

Now it was all dreadfully wrong. Postal workers were in direct and dire danger. Sealed envelopes could leak. The inhalation case at Brentwood had presented, literally overnight, a new signature of threat.

What was clear, too, was that the full implication of tinier, airborne spores had not been thought through; early hints, like the P Street worker, had become missed opportunities rather than signal flares suggesting that more testing might be needed. In Atlanta, it would be another week and a half before the C.D.C. opened what turned out to be a very prescient e-mail — a warning from Canadian researchers, sent Oct. 4, that tests had shown that anthrax spores could leak through envelopes.

Dr. Richardson has no illusions that an earlier grasp of the dangers of the Daschle anthrax could have kept Mr. Richmond or the three other infected Brentwood workers from getting sick; they had already been exposed. But it might have meant faster diagnosis and faster treatment. With physicians on the alert, the words "I work for the postal service" would have opened doors and minds in doctors' offices everywhere.

"Everybody and their mother would have known that a postal worker is potentially at risk," Dr. Richardson said.

"And so that famous tape of this man Morris, saying that he went to his doctor and the doctor told him don't worry, would probably not have happened." Thomas Morris Jr., a Brentwood worker, died on Oct. 21; Mr. Richmond recovered.



The flawed assumptions had other consequences. Because postal workers had not been considered at risk, only people at the Capitol were tested and given the anthrax antibiotic Cipro after the Daschle letter was opened. Now, Dr. Richardson saw, a huge intervention — running late and behind the curve — would have to begin. And in Washington, where conflicts of race and class simmer even in the best of times, a late start would have its own costs and consequences.

The city's health commissioner, Dr. Ivan C. A. Walks, faced it first-hand when the congregation at an African-American church peppered him with questions about why postal workers, many of them black, were being treated differently than people at the Capitol. While some postal workers ultimately were tested with nasal swabs, the process was stopped, epidemiologists said, because the technique was unreliable.

"The folks on the Hill got swabbed, now you're not swabbing us," said Dr. Walks, who is black, recalling the uncomfortable questioning in the church. "White people got swabs, black people didn't get swabs."

People also questioned the switch from Cipro to doxycycline — a far less expensive, but equally effective, antibiotic.

"The white folks got Cipro — we're getting doxy," Dr. Walks said, replaying the exchange. "They got the expensive drug — you're trying to save money with us."

It was not just a matter of anger. The shifting understanding of anthrax also created doubt about just how much the epidemiologists should be trusted or believed.

Dr. Richardson saw the doubt that Sunday night, as health officials distributed antibiotics to postal workers downtown. Around 10 p.m., Dr. Richardson was approached by a distraught man who said the disease agency was wrong to believe that only a directly poisoned letter was a threat. The man said he worked at Brentwood and knew how mail got tossed around in the sorting machines.

"You don't know, it's not one place, things get mixed up," he said. "There has to be cross-contamination." In other words, even mail that came in contact with poisoned letters might not be safe.

"I had no idea what he was talking about," Dr. Richardson said. He told the man to share his information with the C.D.C.

Atlanta

Debating Public Policy

At the C.D.C.

The national cerebrum of the anthrax crisis was a small conference room at Centers for Disease Control headquarters plastered with bioterror versions of Dr. Snow's cholera maps. There were detailed floor plans of newsrooms and Senate offices, and now, the shop floor at Brentwood Road, all color-coded to indicate the different paths the spores had traveled.

Most of the room was taken up by a rectangular table with a speakerphone that linked the center's scientists with the other players in the investigation — the F.B.I., the postal service, the homeland-security bureaucracy and local law-enforcement officials across the nation. The scientists found themselves exercising some unfamiliar mental muscles. Dr. Perkins says he thought that a Cliff Notes compendium of fictional bioterror plots would have come in handy. It was in that conference room, on Monday, Oct. 22, that centers officials began debating what they say were among the most difficult questions the agency had ever addressed: Was the postal system itself contaminated? Should it be shut down? Such a decision, the officials knew, would rip through the economy, not to mention the delicate psyche, of a nation under siege.

"Is there a health hazard here of such a magnitude that it would warrant that type of action?" asked Dr. Julie L. Gerberding, the centers' acting deputy director of infectious disease, who two decades before had seen the AIDS epidemic emerge in San Francisco.

The magnitude of the anthrax hazard certainly seemed to be growing. Two Brentwood workers had died; two others were in intensive care. In New Jersey, a postal worker appeared to have the state's first case of inhalation anthrax. Four days earlier, state health officials closed the Postal Service's regional distribution center near Trenton.

But there was also a conundrum underlying the debate. In an atmosphere of rising crisis, Dr. Gerberding and others felt huge pressure to act decisively, even as events in Washington had made it clear to them that decisiveness was hardly warranted.

What's more, they were in an unaccustomed, and uncomfortable, position of power. While the agency could only recommend shutting the system down, officials knew their advice would carry great weight. The debate became a test of leadership, science and nerve, all bound together by constant stress and sleepless nights.

Dr. Walks, the Washington health commissioner, who participated in some of the discussions by speakerphone, said it had become hard to discern the line between the need to be confident and the need to be right.

More than once, he said, as he stood alongside public officials at news conferences in Washington in mid-October, he inwardly groaned because old answers about anthrax were still being given and he realized that even information

a week or two old could no longer be trusted. Some officials were still saying, for example, that a certain number of spores — 8,000 to 10,000 was the commonly quoted figure — were needed to contract inhalation anthrax. Given what was now known about the dangers for postal workers, perhaps that old assumption was no longer true either. "I think it's time for us to stop needing to say we know and let people know what we don't know," he recalled thinking at the time. "Because if we don't do that they won't believe us when we come to say we know stuff, and that's critical."

The verdict was to keep the system open — not because it was deemed clean and uninfected, C.D.C. officials said, but because there simply was not enough evidence of widespread contamination. The finding did little to ease anxieties, though. Closing the system would have affected millions of people; not closing it might, too.

New York

A New Victim.

A New Wave?

Dr. Stephen M. Ostroff's darkest hour came sometime before the dawn of Oct. 30. New York, he'd come to believe through a long, sleepless night, was under attack, and as the chief epidemiologist at the C.D.C.'s National Center for Infectious Diseases and the agency's point man for the city, the list of things he didn't know seemed endless.

"It was my worst moment," he said.

He had just learned from the city's Department of Health that a 61-year-old stockroom clerk at a Manhattan hospital, Kathy T. Nguyen, was on a respirator and declining quickly from inhalation anthrax.

Part of Dr. Ostroff's anxiety stemmed from the fact that Ms. Nguyen — the city's first inhalation case — fit no previous pattern. The first wave of anthrax-contaminated letters in mid-September had been aimed at news organizations; the second in early October had been sent to political leaders. Was she the sentinel patient of a third wave, focused on the health care system?

But he was also haunted that morning by the long shadow of Washington, and the presumptions that he and other epidemiologists had been so wrong about. Dr. Ostroff had been one of those playing down the threat to postal workers from sealed letters. "None of us, to our eternal dismay, would have ever imagined that an unopened letter could do what they did," he said. Would Ms. Nguyen's illness reveal yet another missed link in the chain of reasoning and evidence?

Dr. Ostroff was hardly a novice. In 15 years at the disease control agency, he was one of the agency's most trusted detectives, helping to respond to the outbreak of hantavirus among American Indians in the Southwest, West Nile virus in New York, Ebola in Reston, Va.

Now, on the morning of Oct. 30, preparing to help the city respond to this new threat, Dr. Ostroff anxiously arrived at City Hall so early that the night-duty police officer had to let him in. He was escorted to the mayor's anteroom, where he fell asleep on a couch. The mayor woke him up when he arrived for the 8 a.m. meeting about the Nguyen case.

"We are about to see a lot of sick people in New York," Dr. Ostroff kept thinking.

New York — hardest hit by the Sept. 11 attacks — still seemed deeply vulnerable, both to attack and to panic. The city's health department, only a few blocks from the still smoldering ashes of the World Trade Center, had been intently preparing for a bioterror attack that might send tens of thousands of acutely ill people to city hospitals all at once.

But as the inquiry intensified, the mysteries only deepened. Investigators could not find even a single spore of anthrax near Ms. Nguyen's home in the Bronx, or at the Manhattan Eye, Ear and Throat Hospital, where she worked. No else got sick, which eased anxieties at the health department but also added to the sense of incomprehensibility. Ms. Nguyen, who died Oct. 31, was not the harbinger of a feared new mass attack — but neither, it seemed, would the evidence about her infection provide the break in the investigation that Dr. Ostroff and others had hoped for. One F.B.I. theory had been that Ms. Nguyen might have crossed paths with the bioterrorist. Now, all they knew for sure was that she had somehow been infected with anthrax in a place health officials could not find and in a way that had left no trace.

Connecticut

Revising the Textbook,

One More Time

Dr. Joxel Garcia, Connecticut's health commissioner, had been working almost nonstop for six days to unravel the death of Otilie Lundgren, the 94-year-old widow from Oxford, Conn., who on Nov. 21 became the nation's fifth fatality — and his state's first — attributed to inhalation anthrax.

Investigators had been sent to her favorite neighborhood dinner spot, her hairdresser, her bank, her church, her library and, of course, her local post office and her home. Nothing so far had turned up.

But on the evening of Nov. 27, Dr. Garcia's staff had made a discovery that at first seemed like wild coincidence: An 85-year-old man who had lived in the town of Seymour, about a mile and a half from Mrs. Lundgren, had also recently died. And he had lived right next door to a family that Postal Service officials said had received a letter postmarked in Hamilton, N.J., at nearly the same instant that the toxic letter to Senator Daschle had been processed. Perhaps, this new evidence suggested, a letter that merely crossed paths with an anthrax-laced envelope could pick up enough spores to kill. If so, maybe that was how Mrs. Lundgren caught the disease, and her elderly neighbor, Oscar B. Haines — and Ms. Nguyen in New York as well.

The implications were disturbing. Hundreds of thousands of letters — perhaps millions — had passed through the postal system since the anthrax mailings, and might now be contaminated with small amounts of anthrax that, if the theory held, might be lethal under certain conditions.

Dr. Garcia immediately called Gov. John Rowland, then the F.B.I., then the state's chief medical examiner. The first question on everyone's mind was as ghoulish as it was simple: Where was Mr. Haines's body now?

An F.B.I. agent and three state epidemiologists were dispatched to wake up the Farkas family, which had received the Hamilton letter, and swab their mailbox for spores. H. Wayne Carver II, the chief state medical examiner, tracked down the funeral home director who had Mr. Haines' body and ordered it sent over immediately to the state laboratory for examination.

Two months after the first anthrax victims like Ms. Huden had suffered in anonymity, the nation's sprawling investigation had come to this: a desperate search in the night for the body of a man who might or might not have had the disease, and who in any case could no longer be helped, but who might still bear silent witness for the prosecution.

The autopsy, begun at 2:47 a.m., revealed that Mr. Haines did not have anthrax. His heart had simply failed. Dr. Carver called Dr. Garcia at about 4 a.m. with the news.

But when the investigators arrived at the Farkas's house on Great Hill Road in Seymour, they found to their astonishment that the letter postmarked in Hamilton on Oct. 9 had, for other reasons, been saved.

By Nov. 30, the investigators had the results — the letter was positive for spores, and the news quickly spread out across the United States, once again changing the state of science about anthrax.

Cross-contamination was definitely possible. An innocuous letter, passing through the labyrinth of the postal system at the wrong moment, could become dangerous, as the Brentwood postal worker had insisted to Dr. Richardson weeks ago. Though it had not killed Mr. Haines, cross-contamination still might explain Mrs. Lundgren's death. Epidemiologists were still confused. How could anthrax that had merely settled on a safe envelope suddenly get back into the air so it could be inhaled, causing the more serious form of the disease? That spores could become airborne again in the whirling tumult of a mail-sorting machine now seemed perfectly reasonable, but on a kitchen table? The answer had been found when they went through Mrs. Lundgren's trash — clue-hunting of the sort Dr. Snow himself would smile on.

Mrs. Lundgren, it turns out, was quite particular about her mail. Again and again, she tore her letters precisely in half before throwing them in the trash, an act that could easily send any dust or anthrax spores flying back into the air.

The epidemiologists still did not know if in fact a cross-contaminated anthrax letter had arrived in Mrs. Lundgren's mailbox, and for all that they had learned, they didn't know whether, in the end, tearing such a letter in half had actually made a difference. But by then the idiosyncrasies of a little old lady seemed to be all they had to go on.

"In science, we keep the door open for everything," Dr. Garcia said then, two months and counting into the nation's anthrax inquiry.

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New York Times  
December 25, 2001

## **Ridge Is Opening A Center To Analyze Data**

By Alison Mitchell

WASHINGTON, Dec. 24 — Tom Ridge, the director of homeland security, is opening a national coordination center in a former naval complex here that will analyze and share intelligence about threats and vulnerabilities with federal agencies. It will also coordinate the response of agencies to a terrorist attack.

Officials say the center, on Nebraska Avenue several miles from the White House, will be staffed by employees from an array of agencies. Having them in one place, officials say, will help break down technological and bureaucratic barriers that block information sharing among agencies like the C.I.A. and F.B.I.

"It's fair to say the whole Nebraska Avenue facility is designed to foster more cooperation across the federal government," said Susan Neely, the communications director for the Office of Homeland Security. "Ultimately the intent is to have information coming in from state and local governments as well."

Ms. Neely said the center would begin operations next month and be running at full strength by the end of 2002. Officials at the center will know, for example, that a train containing chemicals passes near an outdoor sporting event, she said, or that an F.B.I. interview with a detainee indicates a city may be a terrorist target.

"That kind of information will be run through here," Ms. Neely said. "People in a centralized location can better determine what should be done with it."

The creation of the center also gives a greater physical presence to an operation that so far has been personified by Tom Ridge, the former governor of Pennsylvania. Mr. Ridge, an adviser to President Bush, has become much less visible since the anthrax attacks of October have subsided.

The center is the first sign of the concrete role Mr. Ridge envisions for the staff he is assembling to coordinate agencies and develop a comprehensive national strategy for security against terrorism.

Bill Berger, the police chief of North Miami Beach, who met with Mr. Ridge recently, said the former governor told a group of police chiefs that "we need to establish our credibility and place our operation somewhere that's identifiable."

Many in Congress have expressed doubts about how effective Mr. Ridge can be if he continues as an adviser to the president, without his own agency or budget powers.

Although the federal government has a variety of intelligence agencies and spends billions of dollars a year on information and technology, the events of Sept. 11 revealed problems in distributing critical information quickly. In August, intelligence officials asked the Immigration and Naturalization Service to put 2 of the 19 terrorists involved in the Sept. 11 attacks on a watch list to bar their entry into the United States, only to learn they were already here.

Since then, an array of reports have underscored the difficulty of sharing information and the flaws in the system. Until recently, the immigration service had made little effort to locate people who failed to show up at deportation hearings and disappeared. This month, the service said it would give the F.B.I. the names of 314,000 people who have disappeared, to go into a national criminal data base.

The Justice Department's inspector general recently reported that the merger of the fingerprint files of the F.B.I. and the immigration service, seen as a tool to catch terrorists, was years away. It would help ensure that suspects did not slip in or out of the country.

Mr. Berger, the North Miami Beach police chief, who is president of the International Association of Chiefs of Police, said police officials told Mr. Ridge this month that threat alerts from the F.B.I. spilled out of computers with a flood of other law enforcement information, with no sign that it was urgent.

"It's not separated out," Mr. Berger said, adding that the local police can hear about alerts faster on CNN than from Washington.

And the problems stretch beyond law enforcement. The Centers for Disease Control and Prevention recently found that fewer than half of the nation's health departments had high-speed Internet access and that 10 percent had no e-mail address. The agency, in a report, also said that only 13 states had high-speed Internet connections with all their counties.

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Wall Street Journal  
December 26, 2001

## **U.S. Defense Against Agro-Terrorism Still Suffers From Plenty Of Weak Spots**

By Scott Kilman, Staff Reporter of The Wall Street Journal

The country is looking hard at security since the Sept. 11 terrorist attacks and the discovery of anthrax-tainted letters. Although pigs and soybeans are far from the most frightening targets, few sectors are as vulnerable as agriculture.

Modern farms are tough enough to protect from accidental pestilence. Food moves so far and so fast -- a steer might travel 1,000 miles between birth and the dinner plate -- that a disease outbreak on just one cattle feedlot or one grain storage complex can spread like wildfire. Stopping an intentional attack is all the more difficult: Most of America's two million farms are remote yet within reach of a quiet road, potentially putting them at risk.

It is far easier to deliver a biological agent against farms than people. One big advantage: An agro-terrorist needn't risk life and limb. Several pathogens of plants and livestock are harmless to humans. Unleashing the foot-and-mouth virus, for example, could be as simple as walking around on a U.S. hog farm in boots worn on an infected British farm. Hogs are ideal manufacturers of the virus. Likewise, wheat kernels infected with Karnal bunt could be tossed into farm trucks headed to grain terminals.

"It's low tech and low risk to the terrorist," says Gerald P. Jaax, a veterinarian and associate vice provost at Kansas State University in Manhattan, Kan. "It is a daunting task to protect against."

The economic fallout could be immense. Some studies suggest the cost of controlling an outbreak of foot-and-mouth disease in the U.S. could easily reach the billions of dollars. The export business upon which American agriculture depends for one-fourth of its sales would shrink as nations shut borders to protect their own farms.

On top of this, the system for fighting farm plagues, both natural or intentional, is tattered. Tight government budgets have slowed research into new vaccines and eradication techniques. As a consequence, healthy animals and crops near an outbreak are usually killed instead of treated.

The diagnostic laboratories built in the 1950s and 1960s by the U.S. Agriculture Department are understaffed and antiquated, government and industry officials say. Of particular concern are the animal-disease research facilities in Ames, Iowa, where scientists complain about cramped laboratories, corroding pipes and biosecurity levels that are too weak to allow work on some organisms.

"The facility at Ames we've recognized as being in deteriorating condition for a number of years," says Bobby R. Acord, administrator of the Agriculture Department's Animal and Plant Health Inspection Service. The service, which is responsible for protecting farms from diseases and pests, has been seeking \$400 million from Congress to rebuild the Ames complex.

Concern about the vulnerability of U.S. farms was growing before Sept. 11. One worry is whether Moscow can fully account for the former Soviet Union's biological-weapons program, which included pathogens aimed at livestock and crops. The U.S. military, too, worked on food sabotage during the Cold War. Among other things, a U.S. bomb was tested for spreading hog cholera, according to "Emerging Diseases of Animals," a book that came out last year and was partly written by U.S. government scientists.

Meanwhile, farm pestilence of the natural sort has been on the rise. During the past few years, two Asian insects of concern have slipped by the Agriculture Department inspectors that patrol the borders, ports and airports: An aphid invasion began attacking Midwest soybean plants, and the Asian long-horned beetle is destroying Chicago trees. Some native diseases, such as rabies, are raging again. Bovine tuberculosis, which can be passed to humans through raw milk, has erupted on Michigan beef and dairy farms, where it was thought to be eradicated. Johne's disease, which causes chronic diarrhea, has infected roughly one-fifth of the nation's dairy herds in recent years. Regulators worry that the accidental outbreaks are a sign that the government lacks the muscle to defeat an intentional release of an animal or plant disease. "The system doesn't have the personnel or the capacity to fully meet a terrorist threat to the food supply," says Gus R. Douglass, commissioner of the West Virginia Department of Agriculture. Adds Corrie Brown, a veterinary pathologist and an expert on foreign animal diseases at the University of Georgia in Athens, "The system is already overwhelmed."

Just last month, the National Association of State Departments of Agriculture, which represents state agriculture commissioners, issued a report warning about the "country's thin line of defense" against animal diseases. The report said the \$68.5 million appropriated by Washington in fiscal 2001 for the routine monitoring of animal diseases is "appallingly low" considering the size of the U.S. livestock industry; the Agriculture Department forecasts sales this year of \$108.5 billion.

American agriculture hasn't faced a major plague in decades. Without a big battle to fight, budget priorities shifted. Space is so tight at the federal complex in Ames that research on the deadly anthrax organism was conducted in a strip mall. The project was recently relocated.

"We got complacent," says Harley W. Moon, an Iowa State University professor of veterinary medicine who heads a National Research Council committee on agricultural terrorism.

The Bush administration has been shifting more money into the Agriculture Department's disease-prevention programs. But some veterinarians fear that government laboratories are now having such a hard time keeping up with their growing workload that the government would be slow to detect any sabotage.

Plum Island, an Agriculture Department laboratory off Long Island, N.Y., that specializes in the foot-and-mouth virus, has been flooded with suspicious samples since the disease appeared on British farms earlier this year. Plum

Island investigated 444 possible cases in the fiscal year ended Sept. 30 -- four times the previous year's workload, according to the Agriculture Department -- but didn't find evidence of the virus.

Congress was as parsimonious as ever earlier this year when it came to farm diseases: It granted \$5 million of the \$35 million requested by the Agriculture Department for working on foot-and-mouth disease. That changed Sept. 11. Prodded by Sen. Pat Roberts, a Kansas Republican, the fiscal 2002 defense-spending bill approved by the Senate earlier this month includes more than \$400 million for the Agriculture Department to use on antiterror research, upgrading laboratories and stricter border inspection.

But the U.S. food supply could remain vulnerable for a long time. Rebuilding the Ames complex itself could take five years, according to department projections.

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Washington Post  
December 27, 2001  
Pg. 1

## **Indian Missiles Put 'In Position'**

### ***Tensions Rise on Pakistani Border***

By Rajiv Chandrasekaran, Washington Post Foreign Service

NEW DELHI, Dec. 26 – India deployed ballistic missile batteries and increased jet fighter patrols along its border with Pakistan today, Indian officials said, as tensions intensified between the nuclear-armed neighbors.

The buildup of troops and weapons on both sides of the border is part of a tit-for-tat escalation in the wake of a terrorist attack on India's Parliament earlier this month that authorities here blame on Muslim militant groups based in Pakistan.

India's defense minister, George Fernandes, confirmed today that the country's missile systems, which include Russian medium-range missiles as well as truck-launched rockets made in India, are "in position." Fernandes did not elaborate, but other Indian defense officials said the missile batteries were deployed close to the border in response to similar moves by Pakistan over the past few days.

Both nations carried out a series of nuclear tests in 1998, but precise details of the new deployments are not known, nor is it clear that missiles dispatched to the border are nuclear-armed.

"It is a very dangerous gray area," said Uday Bhaskar, the deputy director of the Institute for Defense Studies and Analysis, a research organization in New Delhi. "The nuclear question mark has drastically raised the stakes of this confrontation."

Indian officials said they were strongly considering military strikes against Pakistan if it did not stamp out the militant groups, which are fighting to end Indian rule in Kashmir, a Himalayan region that borders both countries and is claimed by each. Pakistan's president, Gen. Pervez Musharraf, has condemned the Parliament attack but said he would not move against the militants, whom he calls "freedom fighters," without evidence of their involvement, which India has thus far refused to share with Pakistan.

U.S. officials have voiced concern that the escalating tensions could hinder efforts to capture members of Osama bin Laden's al Qaeda network attempting to flee Afghanistan for Pakistan. An outbreak of fighting between Pakistan and India could result in a redeployment of the more than 60,000 Pakistani soldiers stationed along the Afghan border and could affect the U.S. military's ability to use Pakistani military bases, which have been important staging grounds for operations in Afghanistan.

"An all-out war between India and Pakistan would not just disrupt the hunt for bin Laden, but it would make the whole American military campaign seem like a schoolyard fight," a Western diplomat here said.

Cognizant of the risks of a full-scale war, some Indian officials have said that the military buildup is less a prelude to armed conflict and more an effort to force Musharraf to crack down on the militant groups. Indian analysts also said the mobilization is designed to alarm the Bush administration, with the hope that Washington will lean on Musharraf, who has become a principal ally of the United States in its campaign against terrorism.

In Washington, Secretary of State Colin L. Powell formally designated two militant Pakistani groups as terrorist organizations today as the United States continued to pressure Musharraf to dismantle the groups. Powell spoke twice with Musharraf and twice with Indian Foreign Minister Jaswant Singh and urged the two sides to stand down from the military buildup.

On Friday, Musharraf's government announced that it was freezing the assets of one of the groups implicated by India in attack on Parliament, which took place on Dec. 13 in New Delhi. And on Tuesday, Pakistani authorities detained Masood Azhar, the founder and leader of the Jaish-i-Muhammad organization, the group on which India has placed the bulk of the blame for the assault.

Azhar was held in a police station for several hours Tuesday night but later was placed under house arrest, officials said.

Indian officials, who have demanded that Azhar be turned over to them, called Pakistan's move insufficient. "Still much more needs to be done," said a Foreign Ministry spokeswoman, Nirupama Rao. "It doesn't seem to go far enough to address our concerns."

India contends that the militant groups fighting Indian rule in Kashmir have been supported by Pakistan's military and intelligence service. Musharraf has denied that his government helps the militants, or has any control over them. He and other Pakistani officials maintain that the armed insurgency is a product of years of human rights abuses in Kashmir by the Indian military.

The dispute has placed the United States in an awkward position. The Bush administration is afraid of pushing Musharraf too hard out of fear that drastic actions against the militant groups, which enjoy broad popular support in Pakistan, could weaken his grip on power. At the same time, U.S. officials are reluctant to chastise India too severely for contemplating military strikes because doing so, one Western diplomat said, "would sound hypocritical after September 11."

"What India wants to do is the same thing that the United States has done in Afghanistan," the diplomat said. "They want to go after a country they believe sponsors terrorists. And they want the United States to make Musharraf do to the militants exactly what he did to the Taliban – cut off their support."

But many politicians and scholars here doubt that Musharraf will crack down on the militant groups to an extent satisfactory to India. As a consequence, some officials and analysts said, the two countries are heading toward a military confrontation.

"If nonmilitary measures do not yield any tangible results, the thinking is clear that [India] will have no other option but to apply military force," said Brahma Chellaney, a professor at the Center for Policy Research in New Delhi.

"If people in the West think this is all just for show, they're making a grave mistake. They should not assume that the Indian state does not have the stomach to confront Pakistan and to impose costs on them."

Although the militants have carried out numerous strikes in Indian Kashmir, the attack on Parliament, which left 14 people dead, including the five attackers, has raised the ire of politicians here to unprecedented levels. "It was an attack on the heart of our democracy," Chellaney said.

Indian military officials said the mobilization of troops and equipment, the largest in more than a decade, is not part of a campaign to sway either Musharraf or Washington. "Deployments are not for posturing," an official said. "They are an operation for war."

In the western state of Rajasthan, local officials said blackout exercises were being conducted in border districts at night to prepare civilians for a possible military confrontation. The officials reported that thousands of panicked residents were fleeing border areas, while convoys of military vehicles were moving in.

Indian and Pakistani troops have massed not just in the Kashmir region, a traditional flash point between the two nations, but all along their shared border.

But some officials and military analysts question India's strategy if it were to actually go to war. Simply targeting the militants' training camps in Pakistani Kashmir would have little impact because the facilities, which often consist of little more than tents, can be rebuilt easily, the analysts said.

Indian intelligence officials said they also believe that many of the camps have been moved away from the border since the Sept. 11 attacks on New York and the Pentagon. And, they note, the headquarters of the two largest militant groups are in major Pakistani cities.

The other option, going after the Pakistani military, could be more dangerous. "It could embroil us in a much bigger war than we want," said Krishnaswamy Subrahmanyam, a former adviser to India's national security council.

"The fact is they don't have any military options that are attractive," a Western diplomat said. "It's either full-scale war or symbolic pin pricks."

Before resorting to force, Indian officials said they would attempt to exhaust what one called "diplomatic offensives." On Friday, India recalled its top envoy to Pakistan for the first time in 30 years and suspended bus and train service between the countries.

India's security cabinet met today to discuss additional diplomatic and economic measures, but held off making a decision until Thursday, when Fernandes is scheduled to return from visiting troops on the border.



Indian officials said they are considering suspending trade agreements and air travel between the countries. They also said the government likely will force Pakistan to reduce the size of its diplomatic mission in New Delhi, a move that Pakistan will almost certainly emulate.

India and Pakistan have fought two of their three wars – as well as a major border skirmish in 1999 – over Kashmir. Islamic militants, who are fighting for independence or merger with Pakistan, have carried out strikes in Indian Kashmir since 1989. Human rights groups say the insurgency has killed more than 60,000 people.

*Special correspondent Rama Lakshmi contributed to this report.*

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Los Angeles Times  
December 27, 2001

## **China Haunted By WWII Chemical Weapons**

***Toxins: Massive stores of poison munitions were left behind by Japanese forces. Tokyo owned up only in 1995, and a cleanup is in the works.***

By Henry Chu, Times Staff Writer

NANJING, China -- High on a hill above an abandoned brickyard, a poisonous legacy of war lingers in this placid city.

In February 2000, a road construction team digging on Yellow Beard Mountain stumbled on a stash of chemical weapons left by Japanese forces when they pulled out of China at the end of World War II.

Unbeknown to the residents who went about life in its shadow, about 20,000 metal canisters lay buried atop the hill, full of toxic substances still capable of inducing vomiting in victims, damaging lung tissue and, in extreme instances, causing a painful death by suffocation from excess fluid in the lungs.

More than half a century since the munitions were stowed away, work finally wrapped up this month on unearthing and moving them to a special storage site. Eventually, technicians are to neutralize the harmful agents inside.

The size of the cache, experts say, is enough to put Yellow Beard Mountain near the top of the list of places around the world, including sites in England and France, where abandoned chemical weapons have been recovered and disarmed in recent times.

More startling is the fact that the stockpile in Nanjing represents just a tiny fraction of the chemical arms in China left behind by the retreating Japanese army.

The Japanese government, which is bound by international treaty to render harmless the abandoned ordnance, estimates that there are 700,000 of its chemical munitions scattered across China; Beijing puts the figure at 2 million.

Either way, China is now home to the world's largest chemical weapons cleanup campaign at a time of new global scrutiny of unconventional warfare and its consequences.

The process of destroying the arms is extremely delicate and shows the challenge that could lie ahead for the U.S. and its allies if Osama bin Laden turns out to have amassed an arsenal of chemical weapons and if U.S.-led forces succeed in getting their hands on it.

The difficulty of the decommissioning project in China is compounded by the leftover weapons' age, condition, mixed content and sheer quantity.

"This is something that has been done before, but not on that scale," said Abu Talib, a chemical weapons expert in the United States. "Most of the chemical weapons around the world, you're talking [in the] hundreds and thousands--not such a huge pile."

Talib works at Mitretek Systems in Falls Church, Va., an organization being consulted by Tokyo in its effort to purge China of one of the more embarrassing, and threatening, reminders of Japan's brutal military occupation of parts of the country in the 1930s and '40s.

Beijing says the weapons have continued to injure and kill since the end of World War II, harming as many as 2,000 Chinese and damaging the environment. Eighteen alleged postwar victims are finally to get a hearing in a Tokyo court in February or March after years of filing suit for compensation.

Japan's agreement to clean up the arms also came after years of contention and negotiation hampered by Tokyo's long refusal to acknowledge formally that such munitions were ever used, despite the discovery of so many left behind.

Most of the weapons found so far were in the northeast, in what was the puppet state of Manchukuo under the Japanese imperial regime.

Sometime after the war, the Chinese military rounded up all the abandoned weapons it could find--some of the locations were contained in Japanese records--and selected a remote, mountainous area, Haerbaling in Jilin province, to serve as a repository.

"Because of financial and technical reasons, we weren't able to destroy them, so we collected them all together and buried them," said Ge Guangbiao, deputy director of the Chinese government agency overseeing the cleanup project.

"This was the only thing we could do."

### **Shells, Canisters and Drums Fill Pits**

In two large pits, Chinese soldiers interred a vast stockpile of munitions: 670,000 artillery and mortar shells, smoke canisters, huge drums of chemicals, perhaps some bombs.

Their payloads were designed to disable and, possibly, kill the enemy, and to control crowds. In addition to numerous vomiting agents, there was a potentially lethal "mustard gas" compound that inflamed and blistered victims' eyes, lungs and skin, and an agent that induced tearing, coughing and difficulty breathing--and that in high doses could also inflict death by suffocation.

The chemicals are not so deadly as the nerve agents found in other parts of the world--just a dab of those can be fatal within minutes--but they are nonetheless hazardous to both humans and the environment.

Few people live in Haerbaling, a forested area near the meandering Songhua River. During fine weather, says someone who has visited the site, it seems "an ideal place for a picnic" but for the fences and the occasional soldier guarding what is considered military property, off limits to civilians.

For decades, Haerbaling's inaccessibility and the cool temperatures below ground, which slow metal corrosion, made it a satisfactory place to store the weapons.

But the inaccessibility and the inability to examine the full extent and condition of the buried weapons have become drawbacks in the effort to extract the munitions--a laborious process that cannot begin until the Chinese finish building a road to the site.

Destroying the arms too will be a complicated task, especially as some, though not all, are still rigged to explode.

Japanese scientists are trying to come up with a range of effective technologies, drawing on lessons learned in other parts of the world.

"The U.S. has tons of experience [dealing with] our stockpile of munitions," Talib said. "We've learned a lot, we and the Europeans, over the last 30 years about how to handle these things . . . and the Japanese can learn a lot from the U.S. experience. It's a risky thing, but it's a manageable risk."

Whether such a monumental task can be completed by 2007, the deadline imposed by the international Chemical Weapons Convention, remains to be seen.

Japan and China both signed the convention in 1993, lending impetus to the fitful negotiations over the abandoned weapons that the two had engaged in up to that point.

Although a team of Japanese specialists visited northeast China in 1991 to examine some of the munitions, progress in dealing with them was stymied by Tokyo's refusal to admit to ever having deployed such arms.

Only in November 1995, after the U.S. declassified documents pertaining to the weapons, did the Japanese government admit that it had used "lethal gases" during the war, according to a report last year by the International Institute for Strategic Studies in London.

Neither Tokyo nor Beijing sounds optimistic about meeting the 2007 deadline. Construction of a pilot destruction plant is already behind schedule.

The cleanup project's price tag is enormous: Disposing of a single canister is estimated to cost several thousand dollars. A Japanese official associated with the project, who asked not to be identified, said the bill will probably exceed \$1 billion.

But both countries say Tokyo is committed to seeing the project through.

"It is not at all easy to achieve this target [date], but we are now making our best effort," a Japanese government official, Seiji Kojima, told an international conference in May. Kojima is director general of the Office for Abandoned Chemical Weapons, a unit of the prime minister's office.

Besides the huge stash in Haerbaling, chemical ordnance in varying amounts has been found in at least a dozen other provinces, Chinese officials say.

### **Evidence Japan's Forces Used Chemical Arms**

In Nanjing, the cache on Yellow Beard Mountain contained some already used weapons, showing for the first time that Japanese forces deployed chemical arms during their invasion of the city in 1937, said a Chinese Defense Ministry expert, Zhao Fujin, in a report released by state-run media last year.

The report quoted a historian as saying that Nanjing, whose wartime suffering included the atrocities known collectively as the Rape of Nanking, was at one time the command post of the Japanese army's chemical weapons division.

During excavations at Yellow Beard Mountain, the report added, experts found that some of the toxic substances had seeped into the soil, causing "serious pollution in neighboring areas" and forcing authorities to move and detoxify more than 60 tons of earth.

But last month, even as Japanese and Chinese teams toiled on the hill overlooking Nanjing's apartments and alleyways, many residents had no idea what was going on.

"The Japanese buried things up there," said the owner of a nearby shop, who shook her head when asked if she knew what the "things" were.

When told that they were abandoned chemical weapons, she shrugged. "They're so old, there shouldn't be a problem," she said.

Unfortunately, accidental encounters with the munitions can indeed prove deadly. The London institute's report cited one case in 1974 in which Chinese workers dredging a river were exposed to poison gas and contracted a series of debilitating illnesses that led to the death of one of the laborers 17 years later.

In another instance, in 1995, road workers accidentally set off an abandoned chemical weapon, killing two people and injuring several others.

The institute also noted that many of the leftover munitions contain arsenic, which, if it leaked out, could contaminate the soil and nearby water sources.

"This is a present problem that needs to be urgently resolved. It doesn't just disappear over time," said Ge, the official with the Chinese agency overseeing the cleanup project.

"If there's just one weapon, [Japan] must take care of it. If there are 3 million, they must take care of it," Ge said emphatically. "There's no limit."

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Los Angeles Times  
December 26, 2001

## **All The Readiness Money Can Buy**

***Security: Costly National Guard terror response units might not be up to the task, critics fear.***

By Stephanie Simon, Times Staff Writer

FT. LEONARD WOOD, Mo. -- They are America's elite terrorism response squads.

Trained at the best military schools, the National Guard's civil support teams are on call around the clock. Each team commands millions of dollars in equipment: mobile labs to analyze chemical and biological threats, radiation detectors that can identify hazards down to the isotope and a command van that acts as a global switchboard, patching together secure communications.

Ten units have been certified for duty over the last three years, including one in Southern California. An additional 14 squads will have completed their training by the end of the year. But the teams, and their cost, are coming under fire.

Federal auditors repeatedly have criticized the teams' mission as muddy, the training as spotty and the equipment as unreliable or even unsafe. The latest report, published this fall by the General Accounting Office, concluded that the teams suffer "continued problems regarding their readiness, doctrine, roles" and ability to roll out quickly in response to a terrorist strike.

On Sept. 11, it took 12 hours for New York's civil support team to reach the World Trade Center from a base near Albany. Officials say that delay was atypical, caused because the people with jurisdiction over the unit were killed or injured in the attack. But even in an optimal situation, response time would be measured in hours, not minutes. With soldiers often scattered at training schools around the country, assembling a complete squad could take longer still. Lt. Col. James Kish, the chief of civil support for the National Guard, acknowledges the lag is a "real concern." And that leaves some local officials griping that the \$143 million the federal government has spent on civil support teams so far should have gone instead to buy protective masks for police officers, detection gear for firefighters or decontamination showers for the hospitals that well could be swamped with victims long before the National Guard makes it to the hot zone.

"The federal government has invested a tremendous amount of money into this program, but teams do not seem to have any useful role in disaster response," said Frances Edwards-Winslow, director of emergency preparedness for the city of San Jose. "If they get there in three to five hours, there's no role left for them to play."

Running through disaster drills at this Army base in rural Missouri one recent morning, team members argued their own utility.

With their top-of-the-line military equipment and 600 hours of training, they can help civilian authorities with technical issues, even after an incident is several hours old. They can monitor a chemical plume, predict where it will waft, advise on evacuations. They can set up satellite communications when ground lines are down and make secure calls to the White House. Their lab equipment can identify thousands of chemical agents and a handful of the most likely biological threats. They have the very latest in protective gear.

They may miss the first rush of rescue and response, but hours later they can provide backup to exhausted incident commanders.

"This is a real fine example of guardsmen doing what the Guard does best: homeland defense," said Sgt. George Newsome, who recently retired from the Louisiana team.

Yet even as they tout their capabilities, team members acknowledge their weaknesses.

### **Some Gear Has Been Slow to Arrive**

The equipment snafus that plagued the early teams--air filters installed backward, respirators with mismatched parts--have largely been resolved, thanks to a new Pentagon purchasing system. But while the Defense Department stepped up its procurement efforts after Sept. 11, some of the gear has been slow to arrive.

The Idaho team got its equipment just one week before its certification test here at Ft. Leonard Wood. The members had only a few days to fiddle with the technology before the gear was loaded on a C-130 transport plane and flown to Missouri for the exam. Even new, it didn't function perfectly: Capt. Brad Christopher was running through the test drill, analyzing a mock small-town reservoir for suspected chlorine contamination, when a pump on his detection unit failed. Running out of air in his hazardous material suit, he had to improvise, swabbing the ground with litmus paper to see if he could find the hot spot.

His teammates, meanwhile, had to set up their mobile lab in a tent--warmed against the frosty air by a space heater. Their \$500,000 laboratory van is on back order. As they positioned their sensitive instruments on card tables, set up on muddy ground, another squad member jogged past shouting his own supply needs: "Anyone got any D batteries?"

If equipment presents one problem; personnel presents another.

It takes 18 months and costs up to \$200,000 to fully train a civil support team member. Yet the standard tour of duty is just three years. And while many soldiers say they would like to sign up for a second stint, they complain that there are not many opportunities for promotion within the 22-member squads.

Arkansas National Guard Capt. Clem Papineau, for instance, said he's been in line for a promotion to major for two years but can't get his new rank unless he leaves the civil support team--or unless the major on his squad departs, opening a slot for him to advance. Papineau would prefer to stay, but he won't wait indefinitely for his promotion. Others find themselves lured away by private-sector firms eager to snatch up their expertise with communications, lab equipment and chemicals. Christopher said he's been offered several jobs at twice his Army salary of \$65,000 a year. He has turned them down. "I'm a career soldier," he explains.

Turnover in the civil support teams so far mirrors the rate in other Guard units: About 18% leave each year. But since the first teams to be assembled are only now hitting the three-year mark, that number could soon jump.

"The first three-year tour will come up for most of us within about six months, and my hunch is that most will stick on . . . , but it's really hard to say," said Lt. Col. Gary P. Leeder, commander of the Idaho team. Personally, he's considering retirement.

The civil support teams were authorized after the Oklahoma City bombing and the sarin gas attack in Tokyo put terrorism high on the national agenda.

The first 10 teams to be rolled out had major problems, falling way behind schedule and buying questionable equipment. The price tag quickly mounted as well. It takes more than \$5 million to establish a single squad and \$2.5 million a year more to keep it running. Still, Congress continues to back the concept with zeal. A total of 32 teams have been authorized, including one to be stationed near Sacramento. The Sept. 11 attacks have added urgency to the commitment.

"I'd guess in the last few months, people have found out what these teams are really designed for," said Bob Scarabino, a police officer on Long Island, N.Y., who spends his off time evaluating civil support team skills on contract with the National Guard.

Indeed, teams across the country have been called out 172 times since Sept. 11, mostly to assess suspicious substances when local haz-mat teams were busy or exhausted.

### **Summoned to Test Powder at Disneyland**

Southern California's team was summoned to test a white powder smeared along a rail at Disneyland during the height of the anthrax panic. It turned out to be sugar. But Anaheim officials say they're grateful the National Guard was there with expertise and equipment just in case. "They've been terrific," said Lt. Ray Welch, a police commander.

The Los Angeles County Fire Department too has high praise for the teams. Battalion Chief Ron Watson does admit to resource envy: He wishes some of the National Guard funding could have been used to bolster local departments like his own so he could buy, for instance, more decontamination units for victims of chemical attack. Yet in the end, Watson says, he's glad the Guard is there with "whiz-bang" technology that civilian departments cannot afford. Critics, however, question whether the flashy gizmos are necessary.

They point out that in most big cities hazardous material teams are well equipped to make at least a rough analysis of danger within minutes of an incident. And in most states, they're bound by mutual aid pacts to help out less-capable towns. Local haz-mat teams also are trained to collect samples for further analysis in state labs.

Plus, if a terrorist assault overwhelms local resources, there are plenty of federal units ready to jump in, quite apart from the civil support teams. The Marines have their own response force for weapons of mass destruction. The Army can send a chemical team anywhere in the country within four hours, with advanced detection, disposal and decontamination capabilities. Even the FBI has a hazardous material squad, focused on evidence collection.

"The National Guard units can be of assistance . . . but they are not the group that will save lives," said Alan Caldwell of the International Assn. of Fire Chiefs.

Drilling at this Ozark Mountain Army base, civil support soldiers brushed off such sniping. The attacks on Sept. 11 and the anthrax scare that followed proved "there's plenty of work for everyone," said Maj. George Spence, a former member of Maryland's team.

If a disaster of similar magnitude hits again, the soldiers here are quite certain their help will be welcome. They vow they will be ready. "Our job is to prevent human suffering," said the Arkansas team commander, Lt. Col. Keith Bauder. "That's what we're here for."

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Wall Street Journal  
December 27, 2001

## **Officials Fear Terrorists Could Use 'Backflow' To Push Toxins Into Water-Distribution Grids**

By Yochi J. Dreazen, Staff Reporter of The Wall Street Journal

In St. Petersburg, Fla., water authorities are keeping a closer eye on system-wide water pressure. In Cleveland, officials are weighing whether to add more chlorine to their water so larger amounts of the chemical will linger in their pipes. In Portland, Ore., alarms are now triggered by smaller drops in water pressure than in the past.

Across the country, water utility officials are taking steps to prevent terrorists from reversing the flow of water into a home or business -- which can be accomplished with a vacuum cleaner or bicycle pump -- and using the resulting "backflow" to push poisons into a local water-distribution system. Such an attack would use utility pipes for the opposite of their intended purpose: Instead of carrying water out of a tap, the pipes would spread toxins to nearby homes or businesses.

Water utility officials say the backflow threat dominates their post-Sept. 11 discussions with law-enforcement personnel. Although utilities have posted extra guards to patrol reservoirs and treatment plants, officials say the biggest threat to the nation's water supply may be from the pipes that carry the water, not facilities that store or purify it.

"There's no question that the distribution system is the most vulnerable spot we have," says John Sullivan, chief engineer for the Boston Water & Sewer Commission and president of the Association of Metropolitan Water Agencies. "Our reservoirs are really well protected. Our water-treatment plants can be surrounded by cops and guards. But if there's an intentional attempt to create a backflow, there's no way to totally prevent it."

Most reservoirs hold between three million and 30 million gallons of water, which would dilute any poison so significantly that terrorists would have to release enormous quantities to do serious damage. And most poison would

be destroyed when the water was purified at a treatment plant. A backflow attack, by contrast, could spread highly concentrated amounts of poison to a few thousand homes or businesses, making the toxin far more effective. So far, the only backflow incidents on record have been accidental. Four years ago, dozens of gallons of fire-fighting foam backed up through the hoses of firefighters in Charlotte, N.C., and made its way into the city's water system, prompting officials to order thousands of residents not to shower or drink tap water for several days. In 1998, workers at a United Technologies Corp. Sikorsky helicopter plant in Bridgeport, Conn., added chemicals to the facility's fire prevention system to guard against corrosion. Some of the chemicals backed into the town's water system, deluging area homes with contaminated water that residents were told not to drink or use for washing or bathing.

There were no serious injuries in either case, but the incidents rattled many water officials. Even before the Sept. 11 attacks, fears of an accidental backflow incident led to the creation of a group called the American Backflow Prevention Association ([www.abpa.org](http://www.abpa.org)2), which works with lawmakers, water officials and engineers across the country. The group publishes a newsletter and an educational comic book for children that features a character named Buster Backflow.

Still, experts have long feared that a terrorist would try an intentional attack. As Gay Porter DeNileon -- a journalist who serves on the National Critical Infrastructure Protection Advisory Group, a water-industry organization -- put it in the May issue of the journal of the American Water Works Association, "One sociopath who understands hydraulics and has access to a drum of toxic chemicals could inflict serious damage pretty quickly."

Utility officials say that it is difficult to fully prevent a backflow incident, but they are hopeful that they can limit the damage through early detection. The beginning of a backflow attack probably would be marked by a sudden drop in water pressure in a targeted neighborhood as terrorists stopped the flow of water into a home or business. The pressure would then climb as attackers reversed the flow of water and began using it to carry poison.

Utilities regularly monitor system-wide water pressure, because a sharp and unanticipated decrease -- at times other than, say, halftime of the Super Bowl, when tens of millions of American toilets flush -- can indicate that a pipe has burst. Most utilities monitor pressure at water-treatment plants and inside the underground pipes that carry the water to nearby homes and businesses; some use advanced telemetric sensors inside pipes.

In recent weeks, many utilities say they have increased the frequency of their checks. "A small drop-off would attract attention it wouldn't have even a short time ago," says Michelle Clements, a spokeswoman for Oregon's Portland Water District, which serves 190,000 customers.

But officials concede that it might be difficult for them to actually spot the minor drop in pressure that could be the start of a backflow attack. Jeffrey Danneels, who specializes in infrastructure security at Sandia National Laboratory in New Mexico, says that water officials might have a hard time detecting a backflow attack originating in a single home or apartment building. "The smaller the pipe, the harder it would be to notice," he says.

Another way to protect the public is to increase the amounts of chlorine or other chemicals added to water so that more of the chemical will remain in the pipes, providing residual protection against some toxins, according to Tom Curtis, deputy director of the American Water Works Association, which represents 4,300 public and private water utilities.

At the Cleveland Division of Water, officials are considering adding more chlorine in areas where residual levels are low, says Julius Ciaccia Jr., Cleveland's water commissioner. Even before the Sept. 11 attacks, some utilities had begun replacing the chlorine with chloramine, a related substance made from the combination of chlorine and ammonia that is believed to linger in pipes longer. Increasing the chemicals has drawbacks, however. "You can only go so far before people begin to complain about the taste," says Mr. Curtis.

The only sure way of preventing a backflow attack, water officials says, is installing valves to prevent water from flowing back into the pipes. Many homes have such valves on toilets and boilers. But virtually none have them on sinks, in part because water officials long assumed that the biggest threat they faced was natural, such as an earthquake, flood or hurricane carrying debris into a reservoir or pipe. Water officials say retrofitting existing structures with the valves would be prohibitively expensive.

"We're used to natural incidents. We're ready for them," says Mr. Sullivan of the Association of Metropolitan Water Agencies. "But we've never really looked at what could happen if someone really wanted to come and get us. And that's a hard adjustment to make."

### **Down the Pipes?**

The federal government devotes little money to protecting the nation's water supply system, which many law enforcement officials see as a potential terrorist target.

Amount of money spent by the Environmental Protection Agency to combat bioterrorism in fiscal year ended Sept. 30, 2001: \$2.5 million (the agency spent \$10,000 on the issue in 1998, no money on it in 1999, and \$100,000 in 2000).

Amount that municipal and private water-system officials wanted to see the agency spend on the issue in the current fiscal year: \$155 million.

Amount the EPA will spend in the current fiscal year, according to recently passed emergency spending legislation: \$90.3 million.

Total amount of money that water-system officials want Congress to devote to improving drinking-water and wastewater plants: \$5 billion.

Total number of municipal water systems across the country: 54,064.

Total number of Americans served by the systems: 263.9 million.

Amount water systems would receive for immediate security projects, according to a just passed Senate bill: \$50 million.

*Sources: EPA, American Water Works Association, WSJ research.*

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## **Health Aspects of Biological and Chemical Weapons**

The World Health Organization has received numerous requests for information about the deliberate use of biological or chemical agents to cause harm.

Soon after the first reports came in of anthrax infections in the United States, the Director-General of the World Health Organization, Dr Gro Harlem Brundtland said, "There are three lessons from recent events: first, public health systems have responded promptly to the suspicion of deliberate infections; second, these systems must continue to be vigilant; and third, an informed and responsible public is a critical part of the response."

This web page is WHO's latest contribution to informing the public. It groups in one place all the information that has now been published: the latest press releases from WHO, updated frequently asked questions about biological and chemical agents as well as links to other relevant information from WHO....

[http://www.who.int/emc/deliberate\\_epi.html#Diseases%20in%20the%20News](http://www.who.int/emc/deliberate_epi.html#Diseases%20in%20the%20News)

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## **Public Health Response to Biological and Chemical Weapons**

World Health Organization Guidance (Second Edition)

[http://www.who.int/emc/pdfs/BIOWEAPONS\\_exec\\_sum2.pdf](http://www.who.int/emc/pdfs/BIOWEAPONS_exec_sum2.pdf)

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