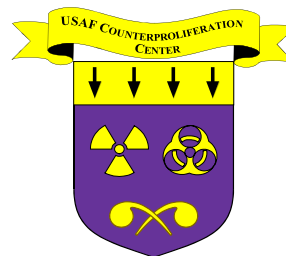


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USAF COUNTERPROLIFERATION CENTER

CPC OUTREACH JOURNAL



Air University

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Welcome to the CPC Outreach Journal. As part of USAF Counterproliferation Center's mission to counter weapons of mass destruction through education and research, we're providing our government and civilian community a source for timely counterproliferation information. This information includes articles, papers and other documents addressing issues pertinent to US military response options for dealing with nuclear, biological and chemical threats and attacks. It's our hope this information resource will help enhance your counterproliferation issue awareness.

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Still No Proof Of Iraq's Illicit Weapons

Troops do find protective gear

By Bill Nichols, USA Today

WASHINGTON — Despite discoveries of chemical protection suits and decontamination equipment that suggest Iraqi forces planned chemical or biological attacks, U.S.-led forces still have not found evidence of such weapons in the 13-day-old war.

The discoveries of the suits came when coalition forces overran Iraqi positions in southern Iraq in recent fighting. U.S. officials continue to say they always expected Iraqi leader Saddam Hussein to hide actual weapons closer to his center of power in Baghdad and his hometown of Tikrit.

"The area in the south and the west and the north (of Iraq) that coalition forces control is substantial. It ... happens not to be the area where weapons of mass destruction were dispersed," Secretary of Defense Donald Rumsfeld said Sunday on ABC's *This Week*. "We know where they are. They're in the area around Tikrit and Baghdad."

As U.S. forces moved within 50 miles of Baghdad on Monday, pressure to find Iraqi doomsday weapons mounted. Allegations that Saddam possesses lethal stocks of chemical and biological arms are at the heart of President Bush's justification for the war, and a failure to uncover such munitions could undercut public support for the conflict. Iraq denies having any such weapons.

The U.S. allegations could be validated by a discovery of a weapons cache or by a chemical or biological attack on coalition troops. U.S. officials and arms experts say they believe that Saddam would use weapons of mass destruction only as a last resort, because doing so could damage international sympathy for Iraq.

But U.S. forces have yet to find convincing evidence that Iraq has the weapons. Even coalition special operations teams using state-of-the-art U.S. intelligence have failed to find clear proof, U.S. officials said.

Forces have found tantalizing hints, however. At least three times, coalition units have come upon equipment such as Iraqi chemical suits, gas masks and the atropine injectors used to counteract the effects of deadly chemicals. The latest find occurred in Nasiriyah on Saturday when U.S. Marines took buildings that had been used by Iraqi infantry units, according to U.S. Central Command in Doha, Qatar.

British members of Parliament booed a junior defense minister Monday when he suggested that the thousands of chemical protection suits discovered by the coalition qualify as chemical weapons.

"OK, OK, simply chemical and biological 'threats' in terms of those particular suits," minister Adam Ingram conceded.

U.S. officials note the discoveries but do not call them proof. "It's one more tile in the mosaic," Brig. Gen. Vincent Brooks said at a Central Command briefing in Doha on Monday.

Arms experts said the suits and other equipment are strong circumstantial evidence, but not conclusive.

The equipment "can suggest that Iraq does still have these capabilities, but they could just as easily be old and they could just as easily be defensive," said Jon Wolfsthal, an expert on weapons of mass destruction at the Carnegie Endowment for International Peace.

"The United States has chemical weapons suits ... but we don't have chemical weapons," Wolfsthal said. "We're still left with the basic possibilities: They may have them, or they may not."

U.S. officials charged last week that the Iraqi leadership has drawn a "red line" roughly 50 miles around Baghdad and has authorized the use of chemical weapons once U.S.-led troops cross it. U.S. troops are near or across that line, combat reports indicate.

Even if coalition forces find weapons, critics said, the discoveries won't be believable unless validated by objective international authorities such as United Nations arms inspectors.

"Only international inspectors can make a conclusive assessment," Russian Foreign Minister Igor Ivanov said last week. "No other evaluation and final conclusion can be accepted."

Administration officials said they are leaning toward using private companies or former U.N. inspectors to verify any weapons discoveries.

Contributing: John Diamond and wire reports

<http://www.usatoday.com/usatonline/20030401/5018555s.htm>

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New York Times
April 1, 2003

U.S. Rebukes Pakistanis For Lab's Aid To Pyongyang

By David E. Sanger

WASHINGTON, March 31 — The Bush administration has imposed sanctions against a major Pakistani nuclear laboratory — the first such action since Pakistan became an ally in the battle against terrorism — for its role in helping North Korea obtain crucial equipment and designs to produce nuclear weapons, administration officials said today.

With its actions, the administration has publicly acknowledged for the first time that Pakistan was the critical supplier of the technology that enabled North Korea to develop a clandestine project to build weapons from highly enriched uranium. In return, Pakistan received North Korean missiles that can carry nuclear weapons, and picked them up last summer in an American-made C-130 cargo plane that belongs to the Pakistan Air Force.

When the transactions were first revealed last fall, senior administration officials declined to comment on the report. Secretary of State Colin L. Powell told reporters in October that when he called Pakistan's president, Gen. Pervez Musharraf, to discuss the subject, "He said, 'Four hundred percent assurance that there is no such interchange taking place now.'" He added: "We didn't talk about the past."

Other administration officials said that they were reluctant to act against Pakistan for fear that the uneasy alliance with General Musharraf might be harmed. Most sanctions against Pakistan in relation to its own development of nuclear weapons were lifted after the Sept. 11, 2001, attacks, in return for Pakistan's cooperation in the pursuit of Qaeda members.

After months of debate, including a trip to Pakistan by President Bush's deputy national security adviser, Stephen J. Hadley, administration officials decided this month to impose a relatively mild penalty: A two-year ban on any dealings with the A. Q. Khan Research Institute, a government-affiliated nuclear research laboratory where much of the work on Pakistan's own nuclear weapons program took place in the 1980's and 1990's.

The laboratory is named for the man considered the father of the Pakistani bomb, though he was removed from his post under American pressure two years ago, and is suspected by American intelligence agencies of bartering in Pakistani nuclear technology.

"We couldn't ignore this, given the enormous damage it did to our effort to keep North Korea from expanding its arsenal," said one senior administration official. "But there was a lot of pressure not to embarrass Musharraf," who may or may not have known of the exchanges, the official said. He noted that the action "comes at a moment when people aren't going to pay a lot of attention."

In fact, it was announced first by the Pakistanis themselves, who said the action would not impede their nuclear program. A statement from the United States Embassy in Islamabad said the laboratory was charged with "material contribution to the efforts of a foreign country, person or entity of proliferation concern, to use, acquire, design, develop and or secure weapons of mass destruction," but did not name the country that had received the goods. The Khan laboratory is about 20 miles from Islamabad. It has long been the centerpiece of Pakistan's nuclear weapons program, and North Korea has apparently tried to replicate part of it.

The Khan laboratory includes a uranium enrichment plant that uses centrifuge technology similar to what North Korea is believed to be developing. Dr. Khan is believed to have brought the design to Pakistan from the Netherlands nearly three decades ago.

"The question facing us," said one senior administration official, "comes down to this: Is the Khan lab proliferating with the knowledge of the Pakistani leadership? Or is it on its own?" In private conversations, Mr. Powell has urged Mr. Musharraf to regain control of the laboratory, American officials say.

To this day, American officials say, they do not know the location of the North Korean uranium project. But they have concluded that North Korea is moving forward quickly on an effort to build a cascade of centrifuges needed to enrich uranium.

The secretary of defense, Donald H. Rumsfeld, told Congress recently that the North Korean program could begin producing weapons by the end of next year, sooner than initial American estimates.

At the same time, North Korea is openly preparing to restart its plutonium weapons program, its much better known effort to build a weapon. That program was frozen from 1994 until American officials confronted North Korea with evidence that it was cheating on an agreement with the United States and proceeding with the secret uranium project.

<http://www.nytimes.com/2003/04/01/international/worldspecial/01KORE.html>

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Site Believed To Have Produced Ricin

From wire reports

U.S. forces are searching a terrorist compound in northeastern Iraq that is believed to be the site where militants made poison that was later found in London, the Pentagon's top general said Sunday.

U.S. and British forces attacked the compound over the weekend and killed at least 120 militants there. Army Gen. Tommy Franks, commander of U.S. forces in Iraq, called it "a massive terrorist facility."

The compound belonged to Ansar al-Islam, an extremist group the United States says is linked to Osama bin Laden's al-Qaeda terrorist network, said Gen. Richard Myers, chairman of the Joint Chiefs of Staff. He described it as a site "where Ansar al-Islam and al-Qaeda had been working on poisons."

"We think that's probably where the ricin that was found in London" came from, Myers told CNN's *Late Edition*.

"At least the operatives and maybe some of the formulas came from this site," he said.

The United States accuses Ansar al-Islam, which has several hundred mainly Kurdish fighters in northern Iraq, of working to make chemical weapons with al-Qaeda's help. U.S. officials have said the group is aligned with Saddam Hussein, but its founder has said he considers Saddam "my enemy." U.S. officials said before the war that they had evidence that Ansar had tested chemical and biological weapons at the site on livestock and possibly on people.

British police found traces of ricin, a powerful poison made from the beans of the castor plant, when they raided an apartment in London in January. U.S. officials have said that they believe the poison and those arrested in the raid were linked to Ansar. The group operated in a small enclave inside territory controlled by Kurdish factions in northern Iraq.

U.S. and British aircraft and missiles pounded the Ansar compound for days. U.S. AC-130 gunships also attacked before coalition and Kurdish ground forces went in, Myers said. "Some of the bodies that have been recovered are not Iraqis, they're not Iranians. We don't know for sure, but they're most likely al-Qaeda," he said.

The site has many underground tunnels to search, "and it may take us a week to exploit that," Myers said. He said officials were examining laptop computers and documents found there.

Ricin is relatively easy to make from castor beans. The toxin kills the body's cells by preventing them from making proteins. A small dose can be fatal and can take days to kill.

There is no treatment or antidote for the poison.

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ElBaradei Sees Return to Iraq with Full Authority

Reuters

Monday, March 31, 2003; 1:53 PM

By Louis Charbonneau

VIENNA (Reuters) - The head of the U.N. nuclear watchdog agency said on Monday his weapons inspectors' mandate to hunt for banned arms in Iraq was still valid and he expected to return to Baghdad with full authority after the war.

Inspectors from the U.N.'s International Atomic Energy Agency (IAEA) and the UNMOVIC monitoring and verification agency left Iraq two weeks ago after the United States informed the agencies that it would use military force to disarm Iraq.

"The IAEA mandate in Iraq is still valid and has not changed, and the IAEA is the sole body with legal authority to verify Iraq's nuclear disarmament," IAEA chief Mohamed ElBaradei told Reuters in an emailed statement.

"Our operation is interrupted because of hostilities. We expect to go back with full authority after the cessation of hostilities, to resume our inspection activities in Iraq," he said.

ElBaradei said the IAEA's authority to return to Iraq and resume inspections came from U.N. Security Council resolutions and the fact that Iraq is a party to the nuclear Non-Proliferation Treaty (NPT).

Countries opposed to the U.S.-led war in Iraq have begun to demand U.N. inspectors return to verify any discoveries of weapons of mass destruction announced by the United States or Britain.

Washington and London are expected to seize on any such finds as justification for their invasion. Western forces have already made much of their discovery of gas masks, protection suits and chemical warfare antidotes in captured Iraqi bases.

"If there are claims by coalition forces about discovering weapons of mass destruction... only international inspectors can make a conclusive assessment of the origin of these weapons," Russian Foreign Minister Igor Ivanov told the upper house of parliament last week. "No other evaluation and final conclusion can be accepted."

France also supports this view and wants the United Nations to play the leading role in the post-war administration of Iraq.

ONLY IMPARTIAL INSPECTIONS CREDIBLE

The United States has said that U.N. inspectors might only play a limited post-war role in Iraq, a position ElBaradei appeared to be calling into question.

"The world has learned over three decades that only through impartial, international inspections can credibility be generated," he said. "Iraq is no exception to that requirement."

Three months of inspections produced no proof Iraq had a full-scale program devoted to producing mass destruction weapons, though Iraq never managed to convince U.N. inspectors of its innocence as required under U.N. resolution 1441.

While UNMOVIC inspectors came across banned missiles and had a number of unresolved issues relating to chemical and biological weapons, IAEA inspectors found no clear evidence or indications Saddam tried to revive his nuclear arms program.

"We had made good progress since resuming inspections in Iraq in November," ElBaradei said about the IAEA's nuclear inspections in Iraq which resumed late last year after a four-year hiatus.

ElBaradei also said the IAEA intended "to provide the ongoing assurances sought by the Security Council that Iraq has no nuclear weapons program," indicating he saw a long-term role in Iraq for the U.N. agency.

<http://www.washingtonpost.com/wp-dyn/articles/A59677-2003Mar31.html>

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New York Times

April 1, 2003

Ideal Sensors For Terror Attack Don't Exist Yet

By Kenneth Chang

If something poisonous wafts onto a battlefield in Iraq, American soldiers would want enough warning to put on their gas masks. If terrorists release nerve gas in a subway station, officials would want quick identification of the toxin.

If someone arrives at a hospital with suspicious symptoms, doctors would want a fast test to determine whether the sickness is anthrax or just the flu.

After the World Trade Center and anthrax attacks in 2001, the federal government has doubled financing for counterterrorism research, including improved detectors, in each of the last two years. The research has generated promising advances, but "the perfect system doesn't exist," said Dr. Duane L. Lindner, deputy director for chem/bio programs at the Sandia National Laboratories site in Livermore, Calif.

Accurate systems are slow, bulky and expensive. The simple quick tests are prone to "false positives," finding danger where none exists.

Nonetheless, sensors have been installed in some crowded public spaces like Washington Metro stations and San Francisco International Airport. In New York and elsewhere, stations used by the Environmental Protection Agency to measure air quality are being modified to sniff for dangerous germs, as well.

Because no current technique fits the ideal — fast, accurate, simple and cheap — "people are forced to make various compromises," Dr. Lindner said.

For example, shining an ultraviolet laser in the air can disclose an approaching cloud of biological particles, because certain light frequencies cause biological molecules to glow faintly. That technique may provide a few minutes of warning to soldiers of a possible attack — time to put on masks. But it is ineffectual as a warning system in a city, where the particles would much more likely be pollen rather than anthrax.

In pursuit of better detectors, scientists are trying to exploit particles of gold, diamond film, lasers and even plants. Many researchers have set up companies, hoping to turn their endeavors into commercial products in a few years.

In the current war, Iraq has not yet fired biological or chemical weapons, so it is not known how well the American battlefield detectors will provide early warning, but they at least do not appear to be raising rampant false alarms. In

the first Gulf War in 1991, the chemical detectors repeatedly sent false alarms, mistaking diesel fumes and insecticides for chemical weapons.

Most current sensors for chemical agents use one of two techniques. One, surface wave acoustic detection, uses a thin membrane, usually made of quartz, vibrating at high frequencies. The membrane surface is coated to attract certain chemicals. If present, those chemicals stick to the membrane, slowing its vibrations.

The second technique, ion mobility spectroscopy, adds and subtracts electrons from the chemical molecules, making them electrically charged, and then pushes the charged molecules with an electric field. The speed that the molecules are pushed, bouncing through a gas, gives a measure of their size.

Neither technique is infallible. Surface wave detectors can be fooled by other molecules that also happen to stick to the membrane. Ion mobility detectors cannot easily differentiate between a nerve gas molecule and any other molecule of the same size.

Another technique, mass spectroscopy, which breaks apart a molecule, accelerates the charged fragments and bends their paths in a magnetic field, provides much surer identification. But it has not been widely used to detect chemical weapons, because most mass spectrometers are huge, weighing half a ton to several tons.

Dr. R. Graham Cooks, a professor of chemistry at the University of Notre Dame, is among the researchers who are trying to make something more portable. Using a variation of mass spectroscopy that does not require a magnet, he has built a mass spectrometer that weighs 36 pounds. "We're on our way to 25 pounds this summer," Dr. Cooks said, adding that the eventual goal is a couple of pounds.

Other reliable techniques for identifying chemicals, like gas chromatography, have usually required a skilled technician working in a laboratory.

Advances in microfluidics, or channeling liquids through a maze of pipes about as wide as a human hair, will allow the same analysis to be conducted by a hand-held device, like one made by Sandia that operates with the push of a button.

A more novel technique is Dr. Michael J. Sailor's "smart dust," shards of silicon that have been perforated with holes one ten-millionth of an inch wide, or about as wide as 20 hydrogen atoms side by side. The holes give the dust-size shards an iridescent sheen like that of soap bubble film. "They look like glitter," said Dr. Sailor, a professor of chemistry and biochemistry at the University of California at San Diego. The dust could be sprinkled outside or glued to a wall.

When chemicals are trapped in the holes, the wavelength of reflected light shifts. Different pieces of dust could be tagged to detect different chemicals.

"Very much like the bar code at a supermarket," Dr. Sailor said. "They have chemical smarts and tell you what they're seeing by changing color."

At a nature preserve near San Diego in November, Dr. Sailor and his colleagues showed that the smart dust could detect harmless ethanol vapors, shining a laser on them from 80 feet away. Dr. Sailor said it would take several years for the technology to evolve into effective weapons sensors.

The smart dust could also be used to detect biological weapons by putting antibodies in the pores that would hook onto viruses or germs.

In most cases, detectors for biological weapons are entirely different from those for chemical weapons. A nerve gas molecule is but a few ten-millionths of an inch wide. A virus like smallpox is about 100 times as wide, and an anthrax spore is several times larger yet.

Detecting biological weapons usually involves two steps, latching onto the germ and reporting that it has been latched onto. Typically, a crucial component in a biological sensor consists of an antibody, to hook onto a protein in the germ, that is attached to a fluorescent molecule that lights up.

To automate the testing is not easy. The samples collected by the E.P.A. stations have to be analyzed in laboratories, potentially delaying the discovery of a biological attack for up to 24 hours. Because most diseases take several days to incubate, a one-day delay would still leave time for treatment, but quicker notice would help.

A system developed at the Lawrence Livermore National Laboratory draws in air, traps particles in a liquid and flows them past beads coated with antibodies. "At this point, we have taken it to a government laboratory where we can test it with real pathogens, and that was successful," said Dr. Richard G. Langlois, a senior biomedical scientist who heads the project.

Livermore is working on licensing the technology to an aerospace company. Dr. Langlois estimated it could be a commercial product in a year, costing \$50,000 to \$100,000. "It's definitely not something everybody would have in their house," he said. "It's something for airports or convention centers."

Improved sensors might use pieces of DNA that would hook onto the germ's genetic material instead of antibodies. DNA is less prone to false positives, but the sensors would have to break apart the germs to release the DNA. The Pacific Northwest National Laboratory makes DNA-coated beads that could be used in such a sensor.

Dr. Panos Datskos, a scientist at the Oak Ridge National Laboratory in Tennessee, takes an entirely different approach. He uses micromachine technology, building a main detection element that is a strip one-250th of an inch long, one five-hundredth of an inch wide and one fifty-thousandth of an inch thick that bends when heated. The device is irradiated with infrared light.

Chemical bonds in molecules that stick to the strip heat up at certain frequencies, providing a fingerprint of the molecule in a few hundredths of a second. "The spectrum is very characteristic of something absorbed on the surface," Dr. Datskos said.

A more unusual idea is using plants and their natural sensors. Researchers at Penn State are trying to figure out the functions of more than 600 receptors in *Arabidopsis*, an often-studied flowering plant in the mustard family. They hope that some combination of the receptors react to specific chemical and biological agents and that they can genetically engineer the plants to glow green if they detect a harmful substance.

Unlike mechanical and electronic devices, such plant sentinels would require no maintenance beyond usual gardening. Also, "They are inconspicuous," said a researcher, Dr. Jack Schultz, a professor of entomology. "You can put them anywhere you want. Nobody will notice them."

Perhaps even more important than the type of sensors is determining their locations. Before the new international terminal at the San Francisco airport opened, Sandia scientists blew smoke through it to see where germs and toxins would drift. "We've extensively characterized the facility," Dr. Lindner of Sandia said. The airport is testing a variety of sensors.

When Sandia started work with the Washington Metro four years ago on a chemical warning system, it began examining air movement through tunnels and stations. In a chemical attack, should trains stop or rush to a station? Should ventilation be closed to prevent blowing toxin or turned up to dissipate the toxin to harmless concentrations? "There is no simple answer," Dr. Lindner said. The answers, he added, depend on the layout of the stations and other conditions.

<http://www.nytimes.com/2003/04/01/health/01SENS.html>

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Indianapolis Star
March 30, 2003

Tiny Town Still Has Big Deadly Stockpile

By Tammy Webber

NEWPORT, Ind. -- The first thing you notice is the quiet.

Nestled in a small valley just off Ind. 63 in western Indiana, Newport -- population 578 -- is a place where moms push strollers down the middle of the street, kids ride their bicycles full-tilt around the courthouse square and the only traffic jams are in October, when antique car enthusiasts converge to challenge the town's steepest hill.

But the bucolic calm is broken every day at noon by chimes emanating from two giant speakers in town. On Wednesdays, a separate, high-pitched tone wails from the black emergency radios in almost every home and business.

The tones, part of the town's warning system, are a reminder that residents live just a few miles from a government stockpile of VX nerve agent, one of the deadliest substances known and one of the weapons U.S. officials fear is hidden in Iraq.

"You about jump out of your skin," said Janet Hughes, pulling an emergency radio from beneath a table at the Vermillion County Courthouse, where she manages the Purdue Extension office. "You never quite get used to it." Yet for decades, residents didn't think much about VX. The chemical was manufactured at the Army's Newport Chemical Depot until 1969, when President Nixon issued a moratorium on production and transport of chemical weapons. The final two batches have been stored there since.

Over the years, activists have tried to call attention to the stockpile. The federal government in 1997 signed an international treaty agreeing to destroy chemical weapons by 2007. But for most Newport residents, VX was more a curiosity than a threat.

That all changed Sept. 11, 2001.

Residents in Newport and surrounding areas knew the VX stockpile was vulnerable -- and so were they.

And though the government plans to begin destroying the chemical in October, the war in Iraq and heightened terror alerts are fresh reminders that VX is still part of their lives.

"Ever since the war started, I think, 'What if?' " said resident Tanya Bright, sitting in a local park where children dragged sticks through the dirt and neighborhood boys, fishing poles at the ready, dug for worms. "Without VX, Newport would be the perfect place to be."

A little drop'll kill you

Just a drop of VX on the skin could paralyze and kill a person in minutes.

In Newport, more than 1,200 tons of the oily liquid are stored in almost 1,700 casks, the Army said before the terrorist attacks.

The government no longer acknowledges how much is there or precisely where it is stored -- only that the casks were moved from a steel storage shed and scattered in bunkers throughout the 7,000-acre complex.

After the terrorist attacks, it also established a 5-mile no-fly zone around the depot and assigned about 100 National Guard troops to protect the stockpile, supplementing civilian security guards there before the attacks.

There's no doubt the community has changed, said Newport Chemical Depot spokeswoman Terry Arthur.

"We never had a military presence here, and now we have a military force," she said. "After 9/11, it changed the culture of the installation, and it changed the atmosphere here."

There's still plenty of small-town hospitality. Last year, some women knitted winter caps and baked cookies for the Guard troops, then put up a sign saying, "Thanks for guarding us." Everyone knows everyone, but residents quickly welcome strangers. Ask a question, and they drop what they're doing to have a long conversation.

But beneath it all is an edginess, one that can't be erased by official assurances that the risk of an accident or attack at the facility is extremely low.

That edginess is why many in Newport and other nearby towns have picked up emergency radios from the county emergency management agency, along with plastic sheeting and tape to seal doors and windows in case there isn't time to evacuate.

It's why each Wednesday, when the National Weather Service sounds its weekly test, residents listen closely, knowing the county is simultaneously testing the high-low tone that would signal imminent danger from VX.

It's why schoolchildren participate in VX drills in which they are herded onto buses that would take them to the "safe place" -- a restaurant about 15 miles north of town.

It's why people in the courthouse run to the window when they hear an airplane, why they called authorities recently when a rental van was parked too long outside one of the windows.

And it's why sheriff's deputies instantly surround cars that stop on Ind. 63 near the depot, asking for ID and warning occupants it's not a good place to linger.

"We're not nervous, but we are more aware," Hughes said.

Residents know VX was developed as a contact hazard. But there is a chance it could vaporize if involved in an explosion or fire, meaning people would have to remain in sealed buildings until the winds blew it away.

So the courthouse has an emergency plan and is sealing doors in a windowless basement room -- stocked with blankets, water and flashlights -- where the 50 or so workers could gather in case of an accident. The plan is assessed every two weeks.

"When the war started, I just wanted to go and get the plastic out and get the tape out," Hughes said. "It's just in the back of your mind that (VX) is still sitting down there.

"I'll be glad when they do ship it out of here."

VX to be neutralized

Down at the depot, crews are busy building a neutralization facility where the VX will be destroyed, six casks at a time, beginning in seven months.

A solution of hot sodium hydroxide and water will be mixed with the VX, causing a chemical reaction that will neutralize the nerve agent. The byproduct, a caustic chemical called hydrolysate, will be tested to ensure the VX is destroyed, then trucked 220 miles to a disposal facility in Dayton, Ohio. There, bacteria will be used to destroy the hydrolysate.

If all goes well, the VX should be gone by next May, Arthur said. The former VX production facility is expected to be dismantled by early 2007.

Then it will be the end of the line for a depot that has been part of the community since World War II.

Built in 1941, the depot began manufacturing the plastic explosive RDX after Pearl Harbor. When the United States began developing the atomic bomb, it produced the heavy water needed for the Manhattan Project -- with up to 10,000 workers, some bused in from other towns, helping to build that particular plant.

The VX plant -- the only place the nerve agent was made in the country -- was built in 1962 and operated until 1969. TNT was made at the depot for a few months in the mid-1970s, but the facility has sat idle since 1975.

"We never thought too much until they brought in the troops," said 80-year-old Paul West, who worked at the depot in the late 1940s, stacking RDX munitions.

Sen. Evan Bayh, D-Ind., who helped secure the estimated \$795 million being spent to destroy the VX, said it's time to end this chapter of U.S. history.

"This is part of the legacy of the Cold War," Bayh said. "We never used VX, and our country doesn't develop chemical weapons anymore. But it will be good to know that a concern will be lifted from the minds of the people and the community."

County officials are planning a new life for the depot, as the area's first industrial park -- a more promising use for the facility in a farming county with a 7.4 percent jobless rate, said Ed Cole, executive director of the county Economic Development Council.

"The depot has been an asset to the county over the years, but it's been up and down," he said. "Now it could turn out to be a tremendous benefit."

<http://www.indystar.com/print/articles/3/032690-3713-009.html>

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National Defense

April 2003

Pg. 24

U.S. Rushes To Upgrade Chem-Bio Gear

Research and development programs remain unfocused, say critics

By Harold Kennedy

If and when U.S. troops come under chemical or biological attack, they will be better prepared than they were during the 1991 Persian Gulf War, military officials said. In the past decade, funding for the Pentagon's chemical and biological defense program has tripled, rising to almost \$1.4 billion in 2003.

As a result, individual protective gear has improved "significantly," according to Michael A. Parker, who recently was named head of the Army's new Chemical Materials Agency. Previously, he was deputy commander of the Army's Soldier Biological and Chemical Command, at Aberdeen Proving Ground, Md.

"Our war fighters in all services have the best individual protective equipment in the world, and it's going to get even better," Parker told a congressional panel.

Reporters got a look at some of this equipment—some already deployed and some still in development—during a recent briefing at Battelle's new Eastern Regional Technology Center, near Aberdeen. Battelle, headquartered in Columbus, Ohio, is a non-profit institute that conducts research and testing to help U.S. military services develop clothing and equipment to protect against chemical, biological and radiological hazards. Here are a few of the many kinds of equipment that were on display at Aberdeen:

The joint service lightweight integrated suit technology. The JSLIST, as it is known, is replacing all existing chemical-protection suits throughout the services. Since production began in 1997, more than 1.5 million have been delivered, most of them to the services.

Every service member who is deploying to the Persian Gulf region has been issued at least two of the JSLIST suits, Army Brig. Gen. Steve Reeves, program executive officer for chemical and biological defense, told reporters at a Pentagon briefing. The Marines, he said, have three.

The JSLIST suit consists of a top with a built-in hood and separate trousers, explained Robert J. Coughlin, Battelle's vice president for systems analysis and engineering. It comes with multipurpose overboots and protective gloves. At 9.6 pounds, the JSLIST is more than a pound lighter than older versions. It can be worn 24 hours a day for 45 days, compared to 30 days for its predecessors. It also can be laundered six times, unlike older suits, which cannot be washed at all.

Still a factor for the JSLIST suits, as was for earlier versions, is heat stress, particularly as the weather in Iraq warms up. During a recent news briefing on the Army's Technical Escort Unit, a member of the unit, wearing a JSLIST outfit, fainted under hot television lights.

The joint service general purpose mask. The JSGPM is being developed to replace the decade-old M40/M22 series of gas masks being used by Army and Marine ground troops and combat vehicle crews and the MCU-2/P series employed by the Navy and Air Force. Lighter and less bulky, it is designed to improve the wearer's ability to see and breathe. It features a single, wide eyepiece, rather than two smaller eyepieces.

The JSGPM, however, won't be fielded until 2006, leaving U.S. troops facing Iraq with the M40/42 and MCU2/P series. But those masks are "big improvements" over their predecessors, said Coughlin.

The M40 mask features an externally mounted air filter canister, making it simpler to replace, Coughlin explained. Also, it can be mounted on either the left or right side of the mask, making it easier for soldiers to shoot, whether they are right or left-handed.

“They’ve come a long way from the equipment that they used when I was in the Army,” Coughlin said.

The joint chemical agent detector. The pocket-sized JCAD is small enough to be handheld, worn in a pouch or posted in a network in buildings or around base perimeters. It also can be installed in military ground vehicles, aircraft or ships.

JCAD is designed to detect, identify and quantify nerve, blister, blood agents and toxic industrial chemicals at low levels to allow sufficient time for protective measures to be taken. It is intended to replace all of the chemical point-detection systems now being used by the services, including the chemical agent monitor and the improved chemical agent monitor.

JCAD’s prime contractor, BAE Systems, of Austin, Texas, is scheduled to begin low-rate initial production later this year. The Defense Department plans to buy more than 257,000 of the detectors over the next five years.

Meanwhile, the ICAM is still in production. In 2002, its manufacturer, General Dynamics Armament and Technical Products, in Burlington, Vt., received a \$6.3 million order to continue making the devices through the end of this year.

Since the ICAM was introduced in 1995, more than 13,000 units have been produced. The ICAM is three times more reliable, 10 times easier to start and less expensive to maintain than the original CAM, according to the Army’s NBC defense program manager’s office.

The joint biological point detection system. JBPDS is the first biological warfare agent-detection program for all of the services. It is similar to the humvee-mounted biological integrated detection systems that were deployed around the Pentagon after the 2001 terrorist attacks. In addition to ground vehicles, JBPDS can be installed in ships, aircraft and buildings to provide biological detection and warning to all service personnel. It is portable and fully automated. JBPDS also is fielded at “high-value military sites,” Johnson-Winegar told a Senate hearing.

Current versions of JBPDS will identify 10 biological warfare agents simultaneously in less than 20 minutes. Later editions will be able to recognize up to 26 agents at the same time.

JBPDS can operate remotely up to five kilometers by either hardwire or radio modem. A single command center can operate networks of as many as 30 JBPDS systems. Each JBPDS includes both global positioning and meteorological capabilities.

The joint warning

and reporting network. JWARN still is in development. If it works as planned, it will be is a system of software and hardware that collects, analyzes, identifies, locates and disseminates information on nuclear, biological and chemical threats.

Despite all of the attempts to improve military capabilities, “seemingly intractable problems still plague the effort to defend against chemical and biological attack,” said U.S. Rep. Christopher Shays, chairman of the House Subcommittee on National Security. “Research and development remains unfocused, and in some cases, duplicative. Procurements are behind schedule.”

Counting the 1.5 million JSLIST suits and older versions, the Defense Department has a total of 4.5 million CB protective suits, according to a General Accounting Office to Shays’ subcommittee. In 2000, the department directed military units and supply centers to locate 778,924 defective suits. “As of July 2002,” the GAO report said, “as many as 250,000 of these suits remained unaccounted for.”

In an interview with CBS 60 Minutes, Anna Johnson-Winegar, deputy assistant secretary for chemical and biological defense, acknowledged the GAO report, adding: “I can tell you with complete confidence that we have made every effort reasonably possible to identify the location of those defective suits, and they have been either returned or destroyed.”

The fact is, she said, “we have made a concentrated effort, over the last several months, to ensure that each and every individual is provided with adequate protection.

“We have the new, improved protective gear that is provided to every service member prior to deployment. We have made significant improvements in our detector capability, so that we know when a chemical or biological agent is in the area.”

<http://www.nationaldefensemagazine.org/article.cfm?Id=1071>

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Pentagon Spending On Chem-Bio Defense Exceeds \$1B

By Elizabeth G. Book

The Pentagon's rising budgets for chemical and biological defense equipment are proof that the department is serious about countering these threats, said a senior official.

"There is a need to quell the panic and provide some sense of assurance to the masses" that defenses are in place, said Anna Johnson-Winegar, deputy assistant to the Secretary of Defense for chemical and biological defense. She spoke recently at a National Defense Industrial Association meeting.

In 2004, the Pentagon requested \$1.1 billion for chemical and biological defense equipment, she said. That is a slight drop from the 2003 request, reflecting a shift of some programs—and their funds—to the Department of Homeland Security. Thirteen percent, or \$145.8 million of the 2004 request, would be dedicated to medical research toward new vaccines, in collaboration with other government agencies and institutions, such as the National Institutes of Health, Johnson-Winegar said.

The largest portion of the request, \$441.5 million, would be spent on contamination avoidance technologies. Johnson-Winegar cited a few key systems that will continue to be funded during the next five years. Among them is the Joint Bio Standoff Detector System (JBSDS), to track and identify biological weapons clouds. The Pentagon also plans to continue purchasing the Joint Biological Point Detection System (JBPDS), which can detect biological threats from 20 meters away, and can identify biological weapons agents within 15 minutes after the initial detection, she said. Initial low-rate production will continue on the Joint Chemical Agent Detector, a small, lightweight unit that can identify, quantify and warn personnel of imminent threats.

Individual protection accounts for 12 percent, or \$127.4 million of the chem-bio request. The priorities are masks, overgarments, boots and gloves, she said.

Some chem-bio programs will transfer next year to the Department of Homeland Security. "In Fiscal Year 2003, Congress provided \$420 million to support Defense Department homeland security support programs. That money is no longer in the chem-bio defense account," said Johnson-Winegar. "We continue to advocate for the programs," because they are vital to domestic first-responder agencies, she said. "While it is important to respond to the war fighter, it is also important to spin off appropriate technologies for civilian use."

<http://www.nationaldefensemagazine.org/article.cfm?Id=1073>

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Evidence Of Chemical Arms Found

By Jonathan S. Landay, Knight Ridder News Service

HALABJA, Iraq - U.S. specialists have found evidence that a Kurdish Islamic militant group linked by the Bush administration to al-Qaeda was concocting chemical weapons in the mountains of northeast Iraq, a U.S. military commander said yesterday.

The special-forces soldiers also found recipes for three forms of chlorine gas and for ricin, a deadly toxin derived from castor beans, American intelligence officials said, speaking on condition of anonymity.

U.S. aircraft, 100 American special-forces troops and more than 8,000 Kurdish fighters on Friday swept the Ansar al-Islam (Partisans of Islam) militants out of the sliver of territory they had held for two years in northern Iraq's autonomous enclave.

The commander of the U.S. special-forces battalion that participated in the attack said evidence the group had been making chemical - and possibly biological - weapons was uncovered in the ruins of a base devastated by American bombs.

The discovery could bolster President Bush, who has cited Ansar's alleged harboring of al-Qaeda terrorists, alleged links to Saddam Hussein, and suspected work on substances that could kill large numbers of Americans as among the reasons for the invasion of Iraq.

"We found various documents, equipment, et cetera, that would indicate the presence of chemical and or biological weapons," the battalion commander, who declined to be further identified, said in the town of Halabja.

He said samples from the site in the mountain hamlet of Sargat were being sent to the United States for testing. A senior Kurdish security official, speaking on condition of anonymity, said U.S. chemical-warfare specialists who began combing the site Saturday had detected traces of ricin. They appeared to have been thorough in their search, paying particular attention to one room in a bunkerlike building sunk into the face of a cliff.

The room was swept clean. The rest of the building was littered with trash, including latex gloves, bandage wrappings and boxes of ampules of penicillin. A broken freezer lay on its side in one room. Another was filled with mortar rounds.

The senior Kurdish security official said the bunkerlike building had served as Ansar's hospital.

While the group was crushed as a military force, remnants continued fighting sporadic gun battles yesterday with U.S. and Kurdish soldiers, who were pursuing them in snowbound mountains and cave-dotted ravines on the border with Iran.

Ansar may still pose a threat to secular Kurdish officials and American troops because a significant number of its 700 to 1,000 fighters remained unaccounted for.

The U.S. battalion commander and his officers praised the Kurdish guerrillas, known as peshmerga (those who face death), who carried the brunt of the offensive against Ansar.

"This was not a significant U.S. effort," the battalion commander said. "The real folks who carried the day were the peshmergas."

The American troops helped direct the attack, provided mortar and sniper fire for the peshmerga, and coordinated strikes by U.S. aircraft, including attack jets, B-52 bombers and AC-130 "Spooky" gunships. U.S. robot spy planes kept tabs on the fleeing militants.

"In a period of one day and a half, a terrorist organization was rooted out and neutralized," the battalion commander said.

He said 75 to 150 al-Qaeda members had taken refuge with Ansar after fleeing the U.S. military operations in Afghanistan. Several hundred Ansar and al-Qaeda militants were believed to have been killed, he said, citing "anecdotal evidence."

Another special-forces soldier, who declined to be further identified, said he witnessed one Ansar member detonate explosives he was wearing on his body, killing himself and a peshmerga.

An undisclosed number of militants, including an Arab who was said to have served with al-Qaeda in Afghanistan, were captured. But others were known to have escaped into Iran, the battalion commander said.

Two suspected al-Qaeda terrorists, one with the pseudonym Abu Afghani, escaped across the border and surrendered to Iranian Revolutionary Guards, the American intelligence officials said. Iran has agreed to hand over any Ansar members it captures, but it remains to be seen whether it will honor the agreement.

"Could a couple of guys get up over the mountains [into Iran]? Yeah, I think so," said Maj. Tim Nye, the spokesman for Task Force Viking, the code name for the U.S. special-forces unit.

The senior Kurdish security official discounted fears that holdout Ansar members might pose threats as assassins or suicide bombers seeking to avenge the assault on the group.

"Fighting is still continuing and they are still running away," he said.

Officials with the Patriotic Union of Kurdistan, the Kurdish rebel group whose fighters participated in the operation, said at least 23 Arab members of al-Qaeda were killed in fighting yesterday. The bodies were seen being taken to Halabja in the backs of two trucks.

<http://www.philly.com/mld/inquirer/5536103.htm>

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New York Times

April 2, 2003

Iraqi Agents Held In Plot To Poison Water Supply

By Alan Feuer

AMMAN, Jordan, April 1 — The Jordanian authorities have arrested several Iraqi agents in connection with a plot to poison the water supply that serves American troops in the eastern desert of Jordan near the border with Iraq, officials here said today.

The small group of men were involved in a scheme to poison a water tank that supplies hundreds of United States troops at a military base in Khao, in an arid region of Jordan's eastern frontier near the Jordanian industrial town of Zarqa. While it was unclear how close they came to contaminating the water supply, no one was sickened or injured, the officials said.

There was scant information today about the plot, although officials said it was connected to the expulsion late last month of three Iraqi diplomats, who were removed from Jordan for undermining its national security. Officials at the Iraqi embassy here, which has been all but cut off from Baghdad because of the war, were unavailable to comment. In a separate incident, Western diplomats said today that four other Iraqis were detained last week for a bungled plan to set fire to a luxury hotel in Amman where many American journalists — and some American military personnel — are staying. The four, who are believed to be Iraqi intelligence officers, tried to burn down the top-floor executive lounge of the Grand Hyatt Amman Hotel with a primitive incendiary bomb, but the hotel's sprinkler system quickly extinguished the flames.

As early as last fall, the Central Intelligence Agency warned that the Iraqi government might conduct terrorist operations against the United States and its interests overseas if American forces invaded Iraq. Two weeks ago, the American Embassy in Amman released a statement warning Americans here to keep a low profile and to avoid places where Westerners gather, including restaurants, fitness centers, nightclubs and bars.

"We recognize and are concerned deeply about the potential for terrorist attacks against American citizens and interests as a result of the military conflict in Iraq," one American official said.

A network of Iraqi agents set up shop in Amman at the end of the first gulf war, when the city was flooded with thousands of Iraqi dissidents who fled the oppression of Saddam Hussein's government. While the agents have mostly concerned themselves with keeping tabs on the Iraqi exile community here, officials said, their extensive presence could easily be used to wage covert attacks against American targets.

There are reportedly thousands of American troops in Jordan, operating Patriot missile batteries and at bases near the Iraqi border.

Jordan is particularly sensitive and susceptible to terrorist attacks, given the many reports that American soldiers have been operating from its territory — an allegation that Jordanian officials have repeatedly denied. Military officials say they believe that Mr. Hussein may have stashed chemical or biological weapons deep in vacant stretches of the Iraqi desert near the border with Jordan.

Western diplomats in Jordan already live under tight security. Their travel is restricted, and their families were evacuated in February because of fears of a possible attack.

In October, Laurence Foley, an official with the United States Agency for International Development, was shot outside his house by two men who were later connected to Al Qaeda. In 1999, there was a foiled plot to blow up the Radisson Hotel in Amman.

Today, a crew of workers laid a new patch of carpet on the floor of the Hyatt's executive lounge, which provides a lovely vista of Amman's scattered white-stone houses and its dusty terraced hills. The smells of fresh paint and varnish wafted through the wood-paneled room.

Hotel officials denied that any attack had occurred and said the lounge had been damaged by a recent electrical fire. Near the ninth-floor elevator bank was a sign apologizing to the hotel's guests.

"The temporary Grand Club Lounge is in Suite 907 now due to maintenance reasons," it read. "Sorry for the inconvenience. The Management."

<http://www.nytimes.com/2003/04/02/international/worldspecial/02JORD.html>

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Inside Missile Defense

April 2, 2003

Pg. 1

Report: UAVs To Become Proliferation, Homeland Security Threat

Unmanned aerial vehicles, hailed for their discriminating use of force in Afghanistan and elsewhere, could pose a grave proliferation threat as the technology to turn them into cheap cruise missiles carrying weapons of mass destruction becomes more available, according to a March 19 draft report commissioned by the Nonproliferation Policy Education Center in Washington.

The report, titled "Controlling Unmanned Air Vehicles: New Challenges," also indicates that hostile UAVs could be covertly shipped to the United States in cargo containers, while cheap UAVs could be used overseas to bypass or overwhelm U.S. missile defense systems.

As civilian applications of UAVs emerge, the stage is set for "a new level of proliferation threats -- the very opposite of the discriminating use of force," according to the paper.

UAV proliferation ironically could boost adversaries' ability to oppose U.S.-led interventions, the report states, considering the emerging role of Predators and Global Hawks in Afghanistan and now in Iraq. The report also holds that a combination of cruise missiles and UAVs could assume a greater role in major global disputes, ranging from India vs. Pakistan to China vs. Taiwan. At the same time, existing international agreements and export controls need re-examining because current treaties do not specifically cite UAVs or sufficiently prevent them from falling into the wrong hands, the report states.

With about 600 UAVs produced in 40 countries worldwide, 80 percent of which can fly more than 300 kilometers, the report states UAVs could wreak havoc on missile defenses.

"You really have the poor man's cruise missile waiting to burst on the world," said Richard Speier, co-author of the report and a former Pentagon official who helped establish the Missile Technology Control Regime (MTCR), a multilateral export control agreement aimed at limiting the spread of missile technology. Unrestrained UAV technology would move so-called rogue nations closer to the "push-button warfare" of mid-20th century science fiction, Speier said. He produced the report with Dennis Gormley, a senior consultant with the Monterey Institute of International Studies' Washington office.

Accordingly, terrorists could combine such technology with Global Positioning System guidance, high-resolution satellite imagery from a growing number of commercial vendors and digital mapping technologies to plan missions, the report states. Loopholes in rules for dual-use technologies also could aid terrorists' efforts to turn UAVs into cruise missiles, the report says.

As a possible answer to some UAV proliferation problems, they suggest developing the UAV industry along the lines of the space-launch sector. Doing so would involve allowing companies to provide "services" overseas, while preventing the transfer of hardware out of the jurisdiction or control of a state considering or making a sale. "A recipient's insistence on hardware rather than services is a strong indicator of nefarious purposes," according to the report.

The report also says a homeland defense against cruise missiles and UAVs would cost in the \$30 billion to \$40 billion range, "which is never taken into consideration when debate occurs about the costs of national ballistic missile defense."

Threat to theater, homeland missile defenses

A top State Department official last June illustrated the danger of UAVs for the Senate Governmental Affairs international security, proliferation and federal services subcommittee.

Iraq has converted light reconnaissance aircraft into unpiloted vehicles as a way to deliver chemical weapons, Acting Deputy Assistant Secretary of State for Nonproliferation Vann van Diepen told senators June 11, 2002 -- more than six months before the Bush administration criticized U.N. weapons inspectors for ignoring the drones and cited them as "smoking gun" evidence of Iraqi violation of U.N. sanctions and possible WMD development. Monterey's Gormley also testified at the hearing.

The report says Iraq's homegrown UAV -- modeled on the Czech-made L-29s it once purchased but is said to have abandoned -- would allow it to spray chemical or biological agents along a line of contamination. While only 10 percent of a liquid anthrax payload would survive the explosive impact of an Iraqi ballistic missile, nearly the entire payload of an Iraqi UAV spray tank, containing about 300 liters, would be available for dissemination -- "a factor of 15 better than ballistic missiles."

While ballistic missiles are rockets that are powered in the early stages of their flight and coast the rest of the way, cruise missiles are powered until they reach their target. Due to that steady horizontal flight pattern, cruise missiles and UAVs could enlarge the effective lethal area of biological attacks by a factor of 10, the report states. Even if outfitted with conventional ordnance, the report speculates armed UAVs could have wrought massive destruction had Iraq deployed them against undefended coalition tent cities and planes sitting wingtip to wingtip in hangars during Operation Desert Storm.

In addition, while some government officials have said Iraqi drones can fly just 500 kilometers in any direction, and certainly could not fly to the United States, Speier said such assumptions are misleading. According to the report, UAVs and cruise missiles could fit in a cargo container and be transported by or launched from a ship. Some 13 million cargo containers arrive in the United States each year -- usually packed so closely together that they cannot be opened on board. The U.S. Customs Service examines just 2 percent of the vessels that contain them, according to that agency.

Further, "cruise missile and UAV proliferation is also likely to create unwanted dilemmas for American missile defenses," the report says. The better U.S. missile defenses become against ballistic missiles, the greater urgency its foes will place on producing cruise missiles and UAVs, the report says. "There are no simple or cheap solutions that readily return the advantage to the defender," the report concludes.

"The low cost of some cruise missiles and, especially, small airplanes modified to become UAVs, renders the cost-per-kill arithmetic of missile defense exceedingly unfavorable," the report says. For example, while each Patriot Advanced Capability-3 missile costs between \$2 million to \$5 million, that cost compares "unfavorably" to a \$200,000 cruise missile or \$50,000-per-copy kit airplanes that could be transformed into armed UAVs, the report says.

Meanwhile, cruise missiles and UAVs fly low and have low observability to air defense radars, which "will raise the cost of cruise missile defense dramatically," according to the report. The report points out that Airborne Warning and Control Systems eliminate slow-flying targets on or near the ground to prevent from overloading their data processing and display systems. UAVs travel so slowly that highly advanced radars likely would dismiss them as a non-threat, the report says.

President Bush and Defense Secretary Donald Rumsfeld have expressed concerns about possible offshore launch of UAVs by terrorists against the United States. Neil Planzer, the Pentagon's point man for easing restrictions on UAV flights in civilian airspace, declined to comment on ways to safeguard the nation against their misuse, as did Pentagon officials who released a Defense Department road map on UAV development earlier this month.

However, the report says a solution could lie in the unmanned airships NORAD has proposed. The airships would operate at an altitude of 70,000 feet and would carry sensors to monitor and detect offshore low-flying cruise missiles. "Several such airships would be needed together with fast-moving interceptors to cope with perceived threats," the report says. An alternative the report proposes could involve deploying 100 aerostats flying at an altitude of 15,000 feet.

One of the biggest problems facing national missile defense planners when it comes to defeating UAVs or cruise missiles involves information sharing, the report said. There is no means of furnishing warnings to the Coast Guard when questionable ships embark from "ports of concern," sensor data needs to distinguish between friends and foes, while NORAD's cooperation with the Federal Aviation Administration on linking radar assets still has holes, "especially when dealing with detecting low- and slow-flying air targets."

Preventing proliferation

The report suggests several ways to deal with UAV proliferation, ranging from sticking to the MTCR's current rules, which offer some flexibility; changes in policy, which could take years to become effective; and following the path of the space-launch industry, which allows other countries to use the best technologies -- rather than "dumbed down" versions -- and keeps the technology under the jurisdiction and control of the exporting country. For instance, some UAV satellite-controlled systems would leave their technology firmly in the exporting country's control, while giving another country access to top-of-the-line technology, the report says.

MTCR was improved at an annual meeting last fall to better regulate transfers of UAV technology, particularly in the area of defining range and payload. However, Speier pointed out that the exporting country determines what the range actually is, leaving a political loophole in otherwise much-improved technical requirements.

A second multilateral export control regime, the Wassenaar Arrangement, could complement the MTCR and "grow in effectiveness as the regime continues to be modified" to address UAVs, the report says. "But this has not happened yet," the experts said. They favor the stronger, and recently revised, MTCR.

The report reviewed existing treaties and found that none cover UAV technology. The report recommends altering existing agreements or drawing up new ones.

"Modern UAVs . . . were at most on the drawing boards when major international security policies were negotiated," the Speier-Gromley report states. The report cites a glaring omission of UAVs and cruise missiles from the list of proscribed systems in U.N. Security Council Resolution 687, the cease-fire terms drawn up after the 1991 Persian Gulf War. This omission was not entirely corrected until passage of Resolution 1441 nearly 12 years later, the report says.

While UAVs are "arguably similar" to cruise missiles and combat aircraft, they are not specifically referenced in the 1991 START I Treaty, the 1993 START II Treaty, the 1990 Treaty on Conventional Armed Forces in Europe and the 1987 Intermediate-range Nuclear Forces Treaty.

Some language within those treaties could apply to UAVs, the report says, though "it is not at all clear that the treaties will ultimately restrict" armed versions. According to Speier, UAVs cannot be regulated internationally until they are officially regarded as aircraft, cruise missiles or as a distinct and separate category.

In examining the role of export controls, the report points to controversy over space satellite exports controlled by the Commerce Department, an agency devoted to fostering exports that came under fire for permitting the sale of sensitive satellite technologies during the 1990s. Commerce also would control the use of "civil" UAVs, which potentially could be modified by terrorists to disperse anthrax, the report says. The report questions whether Commerce should remain in charge of UAV technology, saying that the State Department takes a sterner look at

technology transfers. One U.S. proposal under consideration involves moving to the State Department control over all UAVs, civil or military, that are capable of delivering a 500-kilogram payload as far as 300-kilometers. Washington has imposed export controls on such UAVs and has established an assistance program to help other countries develop similar export controls, van Diepen said in his testimony last summer.

"Policymakers for a long time have somehow gotten in their minds that the only missiles worth worrying about are ballistic missiles," Speier said. "It's a critically important issue, its importance is growing and people are going to have to confront it."

-- *Jeremy Feiler*

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New York Times
April 2, 2003

Protective Suits May Face Real-World Challenge

By Andrew C. Revkin

As American-led forces push toward Baghdad, the shrink-wrapped \$200 suits that troops are carrying to protect against chemical and biological weapons could soon have their first real-world test, and experts and officials are divided over how well they will work.

The suits, made of a carbon-laced fabric imported from Germany, have been successfully tested against a variety of toxic substances in military laboratories and at a half-dozen military proving grounds over the last six years, according to the Pentagon.

But whether they perform just as well in combat, and particularly in the rising heat expected later this week, is another matter, government officials and independent experts said yesterday. Daytime temperatures between Baghdad and Basra are likely to approach 100 degrees from Thursday into the weekend, forecasters say.

The nine-pound suits are far more comfortable, durable and light than the gear used in the 1991 Persian Gulf war. But in high heat the new suits can still cause the wearer to sweat profusely and, together with a tightly sealed gas mask, bring on feelings of claustrophobia, military veterans who have worn them said.

In addition, protection is guaranteed only if the suit is properly put on, even in chaotic battlefield conditions.

Another potential issue is time. Once a suit is contaminated, it must be replaced within 24 hours. If there are protracted battles on contaminated terrain, even the current supplies could be exhausted, some government officials said.

Over the last two days, troops heading toward Baghdad have been placed on high alert for chemical attacks, military officials said, based on the idea that Saddam Hussein might lash out with everything in his inventory if defeat is near.

If that occurs, "this will be the real truth teller," said Ray J. Decker, the director of the office of defense capabilities and management at the General Accounting Office, which in 2001 criticized the Defense Department's handling of its stockpile of older protective gear.

Only on the battlefield can the reliability and performance of a new piece of equipment be judged, he said. "Did the equipment perform as well as designed, did the troops perform as well as they trained, and did the exercises reflect the realities of the battlefield?" he said. "This is what this will come down to."

In its report, the G.A.O. found, among other problems, that the Pentagon had lost track of about 250,000 defective suits of the vintage used in 1991. Supplies of the older suits could still end up being used in the current conflict if the 1.5 million new suits are exhausted — an unlikely but conceivable situation, some government experts said.

The new suits were first developed in 1993, both to improve the ability of troops to confront a chemical or biological threat in high heat and to cut costs by extending the life of the suits. The new layered, porous fabric allows air to circulate around the body while trapping lethal substances in tiny beads of absorbent carbon.

There are 1.5 million suits available to the armed forces around the world. Every service member involved in the current war has been issued at least two new suits, officials said, with each designed to last 45 days once the wrapping is removed. Already, because of alerts in some battles, some troops have had to put on their suits, starting the clock. The older suits lasted 30 days.

The new suits can also be washed up to six times in that span, while the older suits could not be washed at all.

In a possible reflection of lingering concerns, commanders in the field are telling troops in Iraq to don the suits over their conventional uniforms if a chemical attack is detected or imminent, even in high heat.

"The suits are always worn over uniforms for maximum protection," said Lt. Cmdr. Charles L. Owens, a spokesman for the United States Central Command in Qatar.

The Army field manual, in contrast, recommends that "individuals, when directed, wear the overgarment over underwear when heat stress is expected to be a significant factor."

Gus Pagonis, a retired three-star Army general who directed logistics in the 1991 war, said he was confident that the increase in combat training for chemical attacks since then would protect troops.

"In the last 10 or 12 years, the threat has become far more prevalent so they've done even more exhaustive training," he added. "That doesn't mean it's not going to be a hardship. But they've been trained for this."

<http://www.nytimes.com/2003/04/02/international/worldspecial/02SUIT.html>

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Milwaukee Journal Sentinel

April 1, 2003

Arms Control In A Battle Of Its Own

Retired UW professor doubts weapons checks can control nuclear threats

By Craig Gilbert

Washington - In the stark debate over war and peace in Iraq, a retired Wisconsin law professor named Gary Milhollin has occupied a distinctive niche.

The 64-year-old nuclear watchdog is both hard to pigeonhole and hard to miss.

You can read his pithy op-eds in the conservative Wall Street Journal and liberal New York Times. You can find him quoted by the hawkish Weekly Standard and dovish Pacifica Radio.

His broadsides against U.S. companies and politicians (for helping arm Iraq in the '80s) resonate with the left. His scorn for U.N. arms inspections (as ineffectual) and France and Russia (as Saddam Hussein's enablers) resonates with the right.

"There is a lot of blame to go around," says Milhollin, who left Madison for D.C. in the mid-'80s to launch his small but prolific research shop, the Wisconsin Project on Nuclear Arms Control.

Milhollin's most striking target in recent months was chief U.N. arms inspector Hans Blix. Writing in the Wall Street Journal, Milhollin dismissed the Swede as toothless and gullible. One op-ed piece was headlined, "Hans the Timid," the other, "Hans the Irrelevant."

Coming from a non-partisan arms-control activist, Milhollin's prewar indictment of the inspection process as a dead end was embraced by hawks.

But in the not-so-hawkish non-proliferation world - analysts and activists who worry about the spread of dangerous weapons - it's a minority view. Most arms-control advocates thought inspections should go on, and many regard the U.S.-led invasion with alarm.

The broader debate goes beyond this war, however.

The great dilemma raised by Iraq, Iran and North Korea is this: What do you do about radical nations that pursue the bomb in defiance of the world?

Can the traditional approaches - negotiations, inspections, sanctions, collective international action - cope with that? Milhollin is dubious. He says Iran and North Korea - much further down the nuclear path than Iraq - show that the "non-proliferation regime" is breaking down. He notes that Iran is now producing weapons-usable nuclear material without even violating its treaty obligations.

"If you want to stop the Iranians from getting the bomb, you're going to have to do a lot more than we're doing now, a lot more than international arrangements allow you to," he says. "Somebody is going to have to intervene in that program, if not peacefully, then by force - if you want to stop it."

Preventive war

Milhollin doesn't consider himself a "hawk" and insists he's "agnostic" about the Iraq invasion. He calls the war "an experiment in unilateralism. We're going to see how far you can get unilaterally and what it costs."

But he thinks preventive war can't be ruled out as a means of disarmament - that under certain circumstances it might save American lives.

"It is possible it's worth going to war with North Korea to thwart the threat that there will be half a dozen nuclear weapons circulating the world, in hands we can't even identify," he says.

Or not. The benefits of thwarting the threat have to be weighed against the many costs of war. But not intervening has risks, too, Milhollin says. In Iraq, he thinks U.N. inspections were never going to achieve their stated purpose unless Hussein volunteered to give up his weapons. His criticisms of inspections there date to the early '90s.

"It doesn't get you to disarmament," says Milhollin, who maintains a Web site on the Iraqi weapons program, *iraqwatch.org*. He says inspections really involve a different kind of bet: that containment and deterrence - without disarmament - will keep you safe.

"The real choice is either containment or war," he says.

Milhollin's disdain for Blix's work earned him plaudits from some conservatives. The Weekly Standard, the political journal that has most promoted "regime change," said he "gives activism a good name." At the same time, his views unsettled some traditional allies and drew fire on the left. "Mother Jones" magazine termed him a "war party pundit."

"That would be big news to most of the hawks around Washington who consider me a liberal," says Milhollin, who has been a vocal critic of the Bush administration on missile defense.

Milhollin has a history of working with people in both parties.

That's partly the nature of the field. Non-proliferation is a security concern for some, a peace or environmental issue for others. At times it brings the right and left together.

It's also effective activism.

"You have to be seen as credible both technically and politically," says the Indiana native.

Milhollin is a lawyer, not a scientist. He has an engineering degree, and he gained some technical fluency as an administrative judge for the Nuclear Regulatory Commission. As a watchdog, his M.O. is naming names - exposing exports of sensitive technology and material, typically from Western companies and countries to regimes pursuing weapons programs. It's activism through embarrassment.

Milhollin has "accomplished a great deal" as a "professional skeptic," says Natalie Goldring, a disarmament expert at the University of Maryland.

Milhollin is scathing in his comments about both parties (including Bill Clinton and George W. Bush) for not controlling exports better and letting corporate "greed" trump safety and security. He says peace-loving Europeans have been even worse offenders - the French, the Germans, even the Swiss.

"If Western powers sell the means to make horrific weapons, war is going to be the price we pay," he wrote last week in the Wall Street Journal.

Getting the word out

Milhollin's most important skill may be public relations. He is widely quoted and widely published. He has published four op-ed pieces in the New York Times since 1997, three in the Wall Street Journal since last fall.

"When you're small, you've got to leverage your research, and we leverage it through the media," says Milhollin, who normally carries a staff of five plus interns. His group is foundation-funded, with a yearly budget of \$700,000 to \$800,000. That funding used to flow through the University of Wisconsin, when Milhollin was still on leave from the school. Now, he is retired from the university and independent in all but name.

The non-proliferation world he operates in is not monolithic. It includes some who are protective of U.S. interests and many who are uncomfortable with U.S. power. It has long debated how to enforce a treaty-based arms-control regime among unwilling nations, a problem with lots of complicated trade-offs.

But Iraq, Iran and North Korea have altered the debate.

The administration's decision to abandon inspections "may have fatally wounded this instrument for any future case.

If you don't trust inspections in Iraq, why should you trust them in North Korea and Iran? What then is your strategy?" asks Joseph Cirincione, a non-proliferation expert with the Carnegie Endowment for International Peace.

As an alternative to war in Iraq, his group proposed much more coercive inspections. But Cirincione says the U.S. invasion has "shattered" the old international regime for controlling the spread of weapons.

"For those who disagree with the administration's approach, like me, it's incumbent upon us to construct a new strategy, a synthesis of the best of the traditional treaty approach and the new, more coercive approach. We don't know what that is yet."

'A new world'

The use of force is one subject of debate. But the biggest difference between Milhollin and many others in the arms-control world is that they tend to see international consensus and collective approaches as indispensable, and he doesn't.

"We have entered a new world where the United States is the world's policeman, like it or not, and other countries are just going to have to get used to that," Milhollin says.

That perspective is anathema to lot of arms-control activists.

"We cannot afford to dismiss and disregard and deconstruct the international non-proliferation regime that has been built up," says Daryl Kimball of the Arms Control Association.

Goldring says the alternative to inspections - disarming Iraq through force - "tends to make a mockery of the word 'disarmament.' That's not what most of us mean when we use the word 'disarmament.' We mean peaceful change and negotiated change," Goldring says.

Harvard researcher Matthew Bunn says Milhollin "downplays" the value of international inspections. If they can't be made to work, he says, "We're ultimately not going to have a non-proliferation regime in the end."

Then the question becomes, what replaces it?

"I would say there's a pretty broad consensus - Milhollin is outside of that - that inspections are a good thing that have produced results in the past and have produced results today," says David Culp of the Friends Committee on National Legislation, a Quaker lobby that works on disarmament.

No common perception

Milhollin agrees that international cooperation is vital in some areas, including controlling exports. But for him, "it's easy to be cynical about multilateralism."

He thinks the U.S. can't count on the world to get together and deal with outlaw states, especially since Sept. 11, when "it's clear any loose nukes are going to wind up here."

"In order for the non-proliferation regime to succeed, the countries of the world would have to have a common perception of the threat, and they don't," he says. "Let's be honest with ourselves. The Russians and the French were perfectly happy to see Saddam remain in power. He was basically their guy."

Milhollin says the idea of a "disarmament war" has caused a "reshuffling of positions."

"Until now, peace and disarmament went together like hand in glove. Now you got somebody (Bush) who wants to do disarmament through war," he says.

"The arms-control community hasn't quite adjusted to the fact yet that we're in a war. When you're in a war, you've got to think about inflicting losses to other people to reduce your own. If you're at war, you need to win."

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Biotechs Target Chemical Weapons

Antidote research brings in funding for local companies

By Randi F. Marshall

STAFF WRITER

April 2, 2003

In the manufacturing plants of Long Island and the laboratories of New York City, scientists and corporate executives are fighting their own war against biological and chemical weapons.

They're searching for antidotes.

The growing potential for a chemical attack in Iraq or in the United States - and the possibility of millions of dollars in government funding for research - has led local biotechnology companies to focus substantial resources on the issue.

Soldiers generally rely on chemical suits and gas masks for physical protection. Those who might be exposed to chemical weapons also might be treated with antidotes such as atropine and diazepam. But experts admit that such protections are not enough.

"The two most likely chemical weapons that would be used against the troops in Iraq, for instance, would be mustard or nerve agents," said Leonard Cole, an adjunct political science professor at Rutgers University at Newark.

"We have the ability to respond to each of these, but only in a limited sense."

So some local companies have latched on to chemical warfare treatment as a potential blockbuster, especially since private financing of biotech ventures has all but dried up. President George W. Bush's 2003 budget devotes \$2.4 billion towards research and development for a bioterrorism response. Additional funds will go towards chemical warfare-related research. "I can imagine that companies, especially now with money tight, should be eager to look for money wherever it can come from, and the government could be a provider," Cole added.

On Monday, E-Z Em Inc. in Lake Success announced it had received Food and Drug Administration approval for its Reactive Skin Decontamination Lotion, or RSDL. The approval marked RSDL's last hurdle before it could be used by the U.S. military and "first responders" throughout the U.S. E-Z Em, which is manufacturing the product in its Montreal plant, expects orders to quickly pile up. "We've already gotten calls from police departments across the country," E-Z Em chief executive Anthony A. Lombardo said.

RSDL, developed by the Canadian defense department and O'Dell Engineering Ltd. in Canada, is a liquid decontamination lotion that can quickly neutralize a "broad spectrum" of chemical warfare agents, said Lombardo. Other local companies, such as Axonyx Inc. in Manhattan, are further from a final product, but still preparing for

potential onslaught of demand. Axonyx, a small biotechnology company, is at least two years away from marketing Phenserine, a pill to treat sarin gas exposure. "I think we've underestimated the problem [of chemical warfare]," Axonyx chief executive Marvin S. Hausman said. "It takes a long time to get them [the government] to move, but I think it [Phenserine] should be developed as quickly as possible to have it available in the U.S."

Several local companies are partnering with others. The Collaborative Group in Stony Brook has joined with Quick-Med Technologies, Inc. in Gainesville, Fla., to develop and market a compound to inhibit mustard gas' effects.

Quick-Med has a U.S. Army contract and is applying for Homeland Security funding.

"There is certainly an urgency to it," Quick-Med chairman Michael R. Granito said. "My hope would be that a year from now we wouldn't need it. But there's no guarantee of that."

Collaborative chief executive James A. Hayward expects the life sciences industry here to play a major role in homeland security and the war on terrorism. "We need everything from diagnostics to detection systems to therapeutics to prophylactic approaches," said Hayward. "It's just very easy to see how we [the region] could enjoy the benefits."

<http://www.newsday.com/business/printedition/ny-bzbio023201914apr02,0,5759172.story?coll=ny%2Dbusiness%2Dprint>

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Los Angeles Times

April 4, 2003

Pg. 1

Iraqi 'Chatter' Threatens Use Of Chemicals

Intercepted electronic transmissions heighten effort by U.S.-led troops to find any secret caches.

By Bob Drogin, Times Staff Writer

WASHINGTON -- Alarmed by intercepts of Iraqi communications mentioning use of "special" weapons and other fresh intelligence, U.S. special operations teams and mobile units of scientists and weapons experts have stepped up their search for suspected Iraqi caches of chemical and biological weapons, U.S. officials said Thursday.

The effort was given added urgency as armored columns of U.S. troops poured across the "red line," a radius about 50 miles around Baghdad, and began besieging the outskirts of the capital.

U.S. officials had warned that crossing the line could trigger a desperate counterattack by Iraqi artillery, missiles or drone aircraft capable of spraying lethal substances on massed U.S. troops. It's more difficult to target such attacks on fast-moving troops spread out across the desert.

But U.S. experts believe that Iraq can no longer rely on biological weapons to stop or slow U.S. forces, because microbe-based agents such as anthrax or botulinum toxin may not take effect for days or weeks.

"Any biological attack would take too long now to have a useful military effect," one official said.

Instead, U.S. military officials chiefly worry that Iraqi troops may try to use such deadly nerve gases as Tabun, sarin or VX. Such agents, which Iraq is known to have produced in the past, attack the central nervous system and can cause death in hours or even minutes.

U.S. intelligence indicates shells and warheads filled with chemical agents may have been stockpiled in hidden arsenals in and around Baghdad, and are in the custody of Republican Guard and Special Republican Guard units that are trusted by the regime.

U.S. Defense Secretary Donald H. Rumsfeld told a Pentagon briefing audience Thursday that "we've always believed" the risk of chemical attack "increased the closer that coalition forces got to Baghdad."

Although the Pentagon clearly hopes to avoid street fighting in Baghdad, some officials say that the danger of chemical attack is likely to recede if U.S. forces are drawn into the city's concrete confines. That's because poison gas would also endanger Iraqi troops and civilians in urban combat.

"Once you're mixed up with them, it doesn't make any tactical sense" to use chemical weapons, said a second U.S. official, "unless they're just reaching out in some irrational act."

The official said concerns about a possible unconventional attack also have mounted in recent days because of fresh electronic intercepts of Iraqi military radio transmissions and other "chatter" that use "euphemisms or code words" to refer to weapons of mass destruction.

"There are allusions to using special weapons," the official said. "There seem to be a lot more now."

Marines, already in protective suits, increased their precautions as they approached Baghdad's perimeter. They were ordered to keep special gloves and gas masks close at hand, and to sleep with protective boots on for the first time since the war began.

Special operations forces that have conducted clandestine raids deep inside Iraqi lines against suspected weapons facilities, and mobile teams of weapons experts and scientists who search sites and gather intelligence behind U.S. and British lines, also have been ordered to intensify their efforts, officials said.

No weapons of mass destruction have been used or discovered so far in the war. U.S. and British troops have recovered thousands of Iraqi chemical protection suits, respirators and chemical-weapon antidotes at several locations, but it's unclear whether they were meant for offensive purposes.

President Bush has cited Iraqi President Saddam Hussein's effort to produce such "weapons of terror" as the chief justification for the war, and administration officials say they remain convinced that the regime still may use such weapons as a last resort. Some skeptics, however, say the Bush administration may have vastly overestimated Iraq's capabilities and supplies.

The "mobile exploitation" teams of U.S. scientists, intelligence operatives and weapons experts have searched more than a half-dozen Iraqi factories, ammunition dumps and other suspected sites since the war began but found no proof of illegal weapons.

Based in Kuwait, they have compiled a list of more than 1,000 potential weapons sites across Iraq. They also have identified several hundred Iraqi scientists, technicians and officials who were involved in the covert procurement and production of illegal weapons.

So far, officials said Thursday, the special teams have conducted no interviews with significant figures in the Iraqi weapons program. "A lot of people of interest in weapons of mass destruction are in Baghdad and really aren't accessible," said a military intelligence official.

The teams also have made little headway so far in scrutinizing documents and other weapons-related materials gathered in Iraq. "The process is just starting," said another intelligence official.

"It may take years to find all of Iraq's weapons," warned Loren Thompson, a defense analyst.

But he added, "I'm certain they have them and I'm certain they are actively considering using them at this moment." U.S. Army Maj. Gen. Stanley McChrystal said Thursday that the military has "aggressively targeted" command and control facilities and potential delivery systems for weapons of mass destruction since the war began.

"We've tried to hit the artillery tubes that can shoot chemical or biological weapons," he told reporters. "We've tried to hit all of the rockets -- Ababil-100s, Al-Samouds. We've tried to locate all the Scuds with which he threatens his neighbors with chemical and biological weapons."

But McChrystal said he could not explain why Hussein had not launched whatever weapons he still has now that U.S. troops have crossed the "red line" and directly threaten his rule.

"We're not sure whether or not our deterrence has worked," he said. "We're not sure whether or not our disruption of his command and control may have stopped him. It may be a conscious decision; can't tell. We are assuming at this point that it may still come, and therefore staying postured for that."

Other experts offered other reasons for why Iraq has not used weapons of mass destruction, assuming it still has them.

First, they say, Hussein has insisted for years that he possesses no such weapons and his regime would undermine whatever sympathy and credibility it has in the international community if it should suddenly admit that it does. It also would guarantee that U.S. officials would show little mercy in the remaining days of the war.

"Basically, they're committing suicide if they use them," said Thompson.

It's possible, officials said, that the regime has not had the time or opportunity to deliver weapons to troops in the field. It's also possible that artillery battalions, missile batteries and other units deployed to fire such weapons were eliminated by airstrikes or other attacks, or that covert attacks by U.S., British and Australian special forces cut off crucial communications needed to authorize a chemical or biological attack.

Finally, some officials believe that Hussein may be keeping his chemical weapons as a last-minute bargaining chip to trade for survival or exile.

Asked why Hussein had not used any chemical or biological weapons so far, Rumsfeld said the regime may hope it can make a deal.

But if "they are holding out hope ... that there might be a deal cut, the use of chemical weapons would certainly end that prospect," he said. "They have to be balancing that."

And he added there is "not even a remote possibility" of a deal now short of unconditional surrender and the forced removal of Hussein and his regime.

"I think it's over," said Col. William Taylor, a military expert at the Center for Strategic and International Studies, who counts Secretary of State Colin L. Powell and retired Army Gen. Barry R. McCaffrey among his former pupils.

"If they use chemical weapons now, where are they going to put them?" he asked. "If you use chemical or biological weapons, there are so many risks, depending on the weather and the way the wind is blowing. It could blow right back in your face."

"We're very close to this whole thing being over and the population in Baghdad is going to do what the people did in Najaf -- throw up their arms and say, 'Thank God you're here.' "

Times staff writers Greg Miller in Washington and Maggie Farley at the United Nations contributed to this report.

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Bloomberg.com

April 3, 2003

U.S. Says It Has Bomb To Safely Destroy Iraq's Chemical Agents

Washington -- The U.S. Air Force has created a bomb designed to puncture containers of chemical or biological agents, allowing them to decompose without spreading into the atmosphere, officials said.

The Air Force has deployed 58 Passive Attack Weapon bombs to the Persian Gulf to be dropped on suspected storage facilities, according to the Air Force. The bomb is designed to penetrate the roofs of storehouses and fire up to 2,400 steel rods into containers of chemical agents. The agents would then harmlessly evaporate or decompose from exposure to direct sunlight, officials said.

"It is a quick reaction to answer some of the specific concerns we might have in Iraq," Marvin Sambur, the Air Force assistant secretary for acquisition, said in an interview. "It's a non-lethal type of weapon that basically puts out a lot of shrapnel-type of devices."

Coalition forces increasingly face the prospect of an attack with chemical or biological weapons by Saddam Hussein's regime the closer they come to Baghdad, Defense Secretary Donald Rumsfeld has said. U.S. forces have approached to within 10 miles of the capital's center.

U.S. forces have yet to discover any caches of chemical or biological weapons, bulk agent or facilities cited by the Bush administration as evidence for the need to invade Iraq to disarm the regime.

Combination of Weapons

The bomb's steel penetrating rods are made by General Dynamics Corp. and the dispenser by Textron Inc. The bomb would be dropped with a Lockheed Martin Corp. guidance kit designed to correct wind drift as it fell, the Air Force said.

U.S. fliers during the 1991 Persian Gulf War used a combination of weapons to destroy suspected Iraqi biological and chemical weapons facilities, including refrigerated storage bunkers, retired Air Force General Charles Horner said.

Fliers used conventional bombs to bust open the roofs of sites suspected of storing anthrax and botulism spores, Horner said. Those were followed by cluster bombs to burst open bottles and containers and expose the agent to sunlight that accelerates decomposition or incendiary devices to burn the agent, Horner said. Horner was in charge of the overall air campaign.

The new device could also be used to destroy containers of precursor chemicals that need to be mixed into a lethal agent, Horner said.

The new bomb was developed "in record time," Sambur said. "We were supposed to develop it in 180 days but we developed it in 92 days."

The new weapon "was developed to enable soft, surface targets to be attacked with a minimum of collateral damage," the Air Force said in a statement.

"Production was completed on time, with more than 15 percent more weapons delivered than originally proposed as we completed the program under budget," the Air Force said in congressional testimony this week.

Extensive Analysis

U.S. military and civilian scientific planners conducted extensive analysis on the impact caused by different munitions against suspected chemical and biological, a U.S. Central Command official told Pentagon reporters last month.

The official outlined for reporters different means that could be used to deny use of a facility short of destroying it, such as striking its electrical power source or dropping anti-personnel mines programmed to self-destruct with 48 hours.

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Washington Times
April 4, 2003
Pg. 16

Stalinist State To Buy Missiles From Russia

TOKYO (Agence France-Presse) — North Korea, locked in a nuclear standoff with the United States, plans to import leading-edge Russian missile and rocket systems via Syria to upgrade its ballistic missiles, a newspaper reported yesterday.

The Stalinist state is expected to use the hardware, including the high-tech tactical missile Iskandar-E and the multiple-launch rocket system Smerch, to upgrade the guidance system and other functions of its long-range missiles, the Japanese newspaper Sankei Shimbun said.

North Korea and Syria have a secret deal on the trade, possibly based on an agreement on scientific and technological cooperation, the conservative daily quoted military sources as saying.

The science and technology accord was signed when North Korea's No. 2 official, Kim Yong-nam, the head of the Supreme People's Assembly, visited Syria in July last year.

At that time, Mr. Kim handed to Syrian President Bashar Assad a personal letter from North Korean leader Kim Jong-il, calling for closer ties between the two countries.

North Korean missile engineers are already in Syria to prepare for the arrival of the Russian hardware, the report said. They are expected to arrange the further undercover shipment of the hardware by sea to North Korea.

The Russians have not been informed of the secret transfer deal, the report said.

In exchange for the shipment, North Korea will cooperate with Syria's development of ballistic missiles, the report said.

North Korea has ballistic No Dong missiles, which can strike almost all of Japan, and longer-range Taepo Dong missiles.

In 1998, Pyongyang sent shock waves around the world by test-firing a suspected Taepo Dong-1 missile, part of which flew over Japan's main island of Honshu and into the Pacific.

Five years earlier, North Korea launched into the Sea of Japan a No Dong-1 missile with a range of 810 miles after testing two types of crude Scud missiles.

According to South Korean Defense Ministry data, North Korea is currently testing Taepo Dong-1 missiles with a range of 1,550 miles and is also developing a longer-range Taepo Dong-2.

Some military analysts here have predicted that this year the North would test-fire a Taepo Dong-2, which could be capable of reaching parts of the continental United States.

North Korea has launched at least two short-range land-to-ship missiles off its coasts in recent weeks. It has angrily spoken of being eyed as the next target of a pre-emptive U.S. military attack to end its suspected nuclear-arms ambitions.

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New York Times
April 4, 2003

Iraq May Try Defensive Use Of Chemicals, Experts Warn

By William J. Broad

As coalition forces push toward Baghdad, they are preparing for possible attacks by chemical weapons, which Saddam Hussein's forces are known to have used in the past. But experts say the ways his and other armies have dispersed chemical weapons — bombs, rockets and artillery shells directed at troops — are not the only means to deploy them.

In fact, they say, Iraqi forces might even use chemical agents in ways that could be viewed as defensive, not offensive. The distinction depends in part on the chemical properties of the agents, in particular how long they persist on the battlefield.

For example, two experts on chemical weapons, Elisa D. Harris and Jonathan B. Tucker, said at a Congressional staff briefing last week that Iraq might use chemical agents to contaminate terrain, creating a sort of no man's land. In an interview, Dr. Tucker, a visiting senior fellow at the United States Institute of Peace, a research group in Washington that works on conflict resolution, said the nerve agent sarin was highly volatile, meaning it evaporates. So sarin's most effective use is offensive, against enemy troops. Used against the American-led coalition, with its extensive protective gear, he said, sarin would probably just slow an advance.

But other classes of chemical arms, Dr. Tucker said, including VX, another nerve agent, and a blistering compound known as mustard gas, might linger on the battlefield like pools of motor oil on the ground. If Mr. Hussein were to order Iraqi artillery to lob shells full of these agents into the path of American troops, he could create a contaminated zone where few would want to venture, even in protective suits. "These persistent agents can remain toxic for weeks," Dr. Tucker said, "so that could have a significant effect." Even if coalition troops drove through such chemical wastelands in protected airtight vehicles, he added, they would later have to spend a good deal of time in decontamination. "They're going to want to avoid that," he said. Dr. Tucker said that using chemical weapons to create a perimeter around a city under attack might be regarded as less drastic than attacking an advancing force. "It could be seen as defensive," he said. Michael Eisenstadt, a military analyst at the Washington Center for Near East Policy, a research group, said that persistent chemical agents could also be used to block certain lines of advance and "force enemy forces into kill zones." Iraq used a variation of that tactic in its final offensives in its war with Iran in 1988, analysts said. The Iraqis laid down mustard gas behind the Iranian forces, then bombarded the front lines with the short-lived but highly toxic sarin. The goal was to drive the retreating sarin-exposed troops into the mustard trap, Dr. Tucker and Timothy V. McCarthy wrote in "Planning the Unthinkable." Iraq is not a signer of the Chemical Weapons Convention of 1993, which 150 nations, including the United States, have signed. The convention renounces the development, production, stockpiling and use of chemical arms. In the past, Iraq has admitted to producing several kinds of chemical weapons, including nerve agents that penetrate the skin and lungs to disrupt the nervous system and stop breathing. Among the agents it has produced are tabun and sarin. Colorless and virtually odorless, these agents, developed by Germany in World War II, are up to 100 times as potent as the chemical arms of World War I. Iraq has also acknowledged making VX, an agent developed by British scientists in 1948 that is so potent that a drop on the skin can kill in minutes. In addition to nerve agents, Iraq has made mustard compounds, oily substances perfected in World War I that cause burns and blisters. The compounds got their name from their smell, said to be like rotten mustard or onions. United Nations inspectors could not confirm that Baghdad had destroyed all its chemical arms. Mr. Eisenstadt said that Iraq has few delivery systems needed to create a chemical no man's land. "They have a limited ability to use air and artillery, and we can shut them down quickly," he said. A more likely possibility, Mr. Eisenstadt said, would be hidden ground-based generators that could emit a fog of chemical agents. Coalition troops would unknowingly advance into the invisible clouds. "It doesn't require them to reach out," he said. "We would come to them."

<http://www.nytimes.com/2003/04/04/international/worldspecial/04WEAP.html>

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Dallas Morning News
April 4, 2003

Chemical Attacks Still A Top Fear

By Reese Dunklin And Richard Whittle, The Dallas Morning News

As U.S.-led forces zeroed in on Baghdad, Iraqi leaders vowed an ugly, bloody battle that stoked fears Saddam Hussein might unleash chemical or other weapons of mass destruction.

The troops are at Baghdad's door. Yet no such assaults have materialized, raising questions whether Iraq will resort to such tactics.

U.S. commanders – whose troops have donned gas masks and protective suits as the fight drew near the Iraqi capital – have expressed relief but remained wary.

After all, Iraq's Republican Guard had been defending Baghdad's southern edges with rockets and missiles that can carry biological or chemical weapons. Iraqi fighters wearing full chemical suits have been seen unloading large drums around the front lines. And an Australian military official said Thursday that Iraq has issued other equipment, instructions and antidotes.

U.S. Brig. Gen. Vince Brooks, during a Central Command briefing in Qatar, said he was optimistic, but "we don't think the fighting is over yet."

"And so there are still options available to the regime, including the use of weapons of mass destruction," he said. While U.S. officials and their allies stayed cautious, some private analysts suggested that Mr. Hussein and his aides might have reconsidered using weapons of mass destruction – in large part, because of the political consequences.

Across the globe, public opinion has tilted against the United States, viewed as an aggressor for invading Iraq, even as many longtime allies questioned whether Iraq had chemical or nuclear weapons.

Iraq has denied such an arsenal and maintained it has complied with United Nations restrictions. And three weeks into the war, advancing allied troops have yet to discover any caches.

So if a desperate Iraq turned to such an attack, it could dramatically sway support toward the U.S.-led campaign, the analysts said.

"The war was supposed to be about disarming Saddam of his weapons of mass destruction," said defense analyst Loren Thompson of the Lexington Institute. "Using chemical weapons would prove America's reason for going to war was valid."

Any international sympathy for Mr. Hussein would disappear, said senior analyst Christopher Hellman of the Center for Defense Information. Leading war opponent France, for instance, has indicated it could change its position if Iraq used the weapons.

"It seems to me that Saddam Hussein probably went into this conflict knowing he couldn't win it militarily," Mr. Hellman said. "Therefore, if he had a chance at survival, he had to win it politically. Any credibility he has in that arena, he loses it the instant he uses chemical weapons."

U.S. Defense Secretary Donald Rumsfeld theorized Thursday that Iraq had refrained from using chemical or biological weapons because it might be trying to find a third country to broker a deal to end the war without unconditional surrender.

Mr. Rumsfeld declared that there was "no chance" of that happening, but Iraqi leaders might be trying to persuade their population otherwise as a means to keep them under control.

"They have to be balancing that," he said. "Do they want to not use all their weapons and hope that they can get a deal – when it's not even a remote possibility – or will they go ahead and use them and totally eliminate the perception in their people that he might survive, because once he uses those, it's pretty clear there can't be a deal?"

Mr. Rumsfeld declined to say whether U.S. forces have any special military means of responding if chemical or biological weapons are used against them. "We've allowed as how we thought that they'd best not use those weapons," he said, "and I don't want to go beyond that."

Mr. Thompson added the window of opportunity for using the weapons might have passed.

He noted that Iraq most effectively fired chemicals and germs against advancing Iranian forces at long range during the countries' conflict decades ago. Now that the allies and Iraqi troops are fighting at closer quarters, Mr. Hussein risks disabling his soldiers, who are less prepared to handle unconventional attack.

"At this point, the threat is a rapidly diminishing military asset," Mr. Thompson said.

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Washington Times

April 4, 2003

Pg. 9

Inside The Ring

By Bill Gertz and Rowan Scarborough

Iraqi violations

It has not gotten much attention from a press corps interested in Iraq's chemical weapons, but the war already has revealed that Baghdad was in violation of its 1991 cease-fire agreement with the United Nations.

It was supposed to destroy any ballistic missile capable of traveling more than 93 miles. It hasn't.

Three of the ballistic missiles fired from Iraq at Kuwait were designed to travel more than the legal limit. Two went long, and one was intercepted by a Patriot PAC-III missile.

What's more, the 1st Marine Expeditionary Force found two al Samoud 2 missiles this week hidden on a farm near al Hillah. The al Samoud 2's range exceeds 93 miles.

In other words, Iraqi dictator Saddam Hussein was concealing prohibited weapons and U.N. weapons inspector Hans Blix did not find them.

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Washington Times

April 4, 2003

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Pyongyang Says Nuclear War 'Inevitable'

SEOUL — North Korea said yesterday the United States was just paying lip service to diplomacy in its standoff over Pyongyang's suspected atomic-weapons ambitions, and that nuclear war is inevitable unless Washington changes its ways.

North Korea's latest rhetorical blast came hours after the U.N. Security Council agreed Wednesday to initial talks on the crisis and after a U.S. official ruled out trying to coax Pyongyang out of isolation.

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Christian Science Monitor

April 3, 2003

Listen To The Nuclear Chatter

The noise of war distracts attention from dangerous escalation of threats.

By Larry Seaquist

GIG HARBOR, WASH. – As we immerse ourselves in the cacophony of military operations in Iraq, let us not forget to keep an ear cocked for the dangerous nuclear wrangling in the background.

Apparently wishing to put a lid on the Korean problem while dealing with Saddam Hussein, the Pentagon last month made a show of flying two dozen nuclear bombers forward to the Pacific island of Guam. The North Koreans responded promptly, shooting an old, nonnuclear missile on a "test flight" into their own coastal waters. They'd done the same two weeks earlier on the news of the US "warning order" telling the bombers to get ready. By twice choosing not to lob a newer weapon over the heads of the Japanese on a trajectory toward the US as they had last year, the North Korean regime seemed to suggest a degree of restraint. This week, they fired yet another missile, perhaps intending a fresh show of defiance.

Another nuclear duel is under way in South Asia. After inching back from last year's near-war mobilization, India and Pakistan reheated that confrontation a few days ago with matching "test missiles."

Welcome to the world of nuclear signaling. Welcome back, that is. The art of keeping the peace by threatening nuclear obliteration fell into happy disuse when the Soviet Union disappeared. At the time, it seemed the "nukes" themselves would become obsolete. Wrong.

So far, the new voices in these "conversations" are few: North Korea, India, Pakistan, Israel - the latter notable for keeping mum. But each lives in a region where local threats pull the great powers into the discussion. The trouble is that none of the members of the nuclear club - including the nuclear Goliath, America - has any experience in today's varieties of atomic tête-à-têtes.

Even among the old hands of the cold war, nuclear signaling was fraught with misunderstanding. Among today's rookie players, one side's nuance could well be gibberish to the other. We have no real understanding of what North Koreans intend with their bluster or how they interpret our gestures. Indeed, we don't know for certain who is in charge in North Korea. We can only be sure that these isolated men, deliberately starving their own people while they parade a huge army, don't think the way we do.

The pattern of nuclear proliferation is shifting, and with it the dynamics of deterrence. Formerly we worried about countries like Iraq and Iran making their weapons from scratch. But in the future, we'll deal also with shadowy networks of terrorists who buy their weapons on the underground market. Where does a superpower fly a squadron of bombers if it wants to grab the attention of a covert terrorist organization like Al Qaeda, with scattered cells all over the globe?

At heart, nuclear signaling is much more than just writing diplomatic notes on a warhead. By threatening catastrophe, each party hopes to extract a measure of safety from the mutual standoff. That's the theory. But instead of calming the situation, nuclear threats ricocheting among today's players may lead one of the smaller, inexperienced parties to panic and shoot.

Regardless of who pulls the trigger or why, a nuclear detonation would be a disaster. A mushroom cloud rising over the dead in any city could thrust civilization into an era of unlimited violence just when bio-weapons are creeping into our mass-killing capabilities. Clearly, humankind must steer in the other direction, toward managing disagreements with less deadly methods.

That's long-term. But how ought we handle the real nuclear threats zinging around right now? Piling on more threats isn't the answer. Flying nuclear bombers toward leaders barricaded in a small country may be macho; it's also escalatory and militarily meaningless should they and their warheads be hidden. With the most to lose, Americans

might find themselves more deterred by North Korea's handful of nukes than the North Koreans are by America's thousands of nukes.

As it is, the bomber gambit probably stiffened the North Koreans. Hearing murmurs from some in Washington that "you're next" after the US invasion of Iraq, the North Koreans may be thinking they need even more warheads to hold off the US.

The new White House language of preemptive strike disregards a bit of cold-war wisdom that still applies: Nothing escalates like the prospect of preemption. The cold-war nuclear confrontation didn't become really stable until intense, detailed negotiations gradually capped each side's escalation fears. Mutual understanding led, in turn, to a smaller, more relaxed nuclear posture for both sides. Now a new generation needs to repeat that experience. Like it or not, the nukes are here, and nuclear risks are rising. The urgent task is to devalue them. Until we can substitute an entirely different grammar, we need to encourage all the world's nuclear actors and their at-risk neighbors, large and small, old and new, to understand how each thinks as it sends and receives nuclear signals. Let's start talking about nukes, not with them.

Larry Seaquist, a former US Navy warship captain, has been the custodian of nuclear weapons at sea and a contributor to nuclear deterrence strategy in the Pentagon.

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Officer: Troops Find Vials of Powder

By **THE ASSOCIATED PRESS**

Filed at **7:32 a.m. ET**

NEAR BAGHDAD, Iraq (AP) -- U.S. troops found thousands of boxes of white powder, nerve agent antidote and Arabic documents on how to engage in chemical warfare at an industrial site south of Baghdad, a U.S. officer said Friday.

Col. John Peabody, engineer brigade commander of the 3rd Infantry Division, said the materials were found Friday at the Latifiyah industrial complex 25 miles south of Baghdad.

"It is clearly a suspicious site," Peabody said.

Peabody said troops found thousands of boxes, each of which contained three vials of white powder, together with documents written in Arabic that dealt with how to engage in chemical warfare.

He also said they discovered atropine, used to counter the effects of nerve agents.

The facility had been identified by the International Atomic Energy Agency as a suspected chemical, biological and nuclear weapons site. U.N. inspectors visited the plant at least a dozen times, including as recently as Feb. 18.

The facility is part of a larger complex known as the Latifiyah Explosives and Ammunition Plant al Qa Qaa.

During the 1991 Gulf War, U.S. jets bombed the plant.

On April 1, Iraqi Vice President Taha Yassin Ramadan, in a statement on Iraqi television, repeated Baghdad's position that it had no weapons on mass destruction. Referring to reports that gas masks and other chemical gear had been found elsewhere in the country, he said the coalition might plant weapons of mass destruction to implicate Iraq.

"Let me say one more time that Iraq is free of weapons of mass destruction," he said.

"The aggressors may themselves intend to bring those materials to plant them here and say those are weapons of mass destruction," he said.

<http://www.nytimes.com/aponline/international/AP-Iraq-Chemical.html>

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April 4, 2003

False alarm puts GIs in heavy gear

By Guy Taylor

THE WASHINGTON TIMES

CAMP UDAIRI, Kuwaiti Desert — Troops here got a full taste of what horrors of war may lay ahead yesterday when a chemical weapons alarm sounded and preliminary reports circulated that a blister agent had been detected in the air.

A basic chemical agent detector on the perimeter of a tent city here had indicated the presence of the blister agent, said Staff Sgt. Daniel J. Benner, a member of the 19th Material Logistics Support Unit based at Camp Udairi.

But further tests conducted quickly with more sophisticated detection equipment turned out negative, he said.

Soldiers specially trained in chemical agents were dispatched to the tent city. There, they used an advanced piece of detection equipment called an M-22 and concluded there was no blister agent threat.

However, an "all-clear" signal was not given before thousands of soldiers, mainly with the 4th Infantry Division and some with the 101st Airborne Division, had spent about 50 minutes tensely sweating and waiting in their gas masks and full-body protective gear.

The soldiers had quickly strapped on the masks and nuclear, biological and chemical agent protective suits, boots and gloves when the initial alarm sounded in the 85-degree heat about 3 p.m.

"What happened was that an M-8 alarm went off," said Capt. Harmon Esplin. "No chemical agent was detected."

It was not the first time troops at Camp Udairi, south of the Iraqi border, have had to don full-body protective suits and gas masks. Incoming missile alarms sound almost daily at desert camps here, which steadily are filling with 4th Infantry Division troops.

The 4th Infantry and a total of more than 30,000 troops attached to Task Force Iron Horse began arriving in Kuwait last week. They are hustling to unload their equipment from ships in the Persian Gulf and fill in positions in the desert that were manned before the war's start by the Marines, and the Army's 3rd Infantry and the 101st Airborne divisions.

The 4th Infantry troops are learning to deal with the trials of being in the war zone. "Whenever the alarm goes off, they automatically go to [protective posture] level four as a safe course of action," Capt. Esplin said.

Level four is the highest protective level and includes the heavy full-body suits with thick overhead hoods, rubber gloves and boots and a gas mask.

Some 101st Airborne soldiers, who remain at Camp Udairi repairing helicopters and maintaining base camp while their division continues to push toward Baghdad, said yesterday's chemical alert marked the longest amount of time they've had to spend in the chemical suits while enduring the intense desert heat.

Sgt. Cesar W. Andujo, who donned his full chemical gear and gas mask during the alert, said the heat and austere conditions in a big desert camp can make it difficult to ascertain exactly why an alarm has gone off.

"This is when it's really hard to tell what's going on," he said. "We stopped working for a little while and just waited to hear [what it was]. It's hard to work in that kind of heat."

After about 25 minutes in the suits, a rumor spread through a tent of the 4th Infantry unit that guards at one of the camp's gates had detected a blister agent.

After another tense 15 minutes of waiting, an "all-clear" signal was sent out.

"It was definitely alarming but there was some kind of calmness to it," said Lt. Melissa Bailey, an officer with the aviation brigade of the 4th Infantry.

"We all double-checked one another's equipment and we knew the equipment was on right."

<http://www.washtimes.com/national/20030404-84254728.htm>

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