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Articles & Other Documents:

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Washington Times
September 27, 2005
Pg. 1

Bush Seeks To Federalize Emergencies

Plan would skip states after disasters, terrorism

By Bill Sammon, The Washington Times

President Bush yesterday sought to federalize hurricane-relief efforts, removing governors from the decision-making process.

"It wouldn't be necessary to get a request from the governor or take other action," White House press secretary Scott McClellan said yesterday.

"This would be," he added, "more of an automatic trigger."

Mr. McClellan was referring to a new, direct line of authority that would allow the president to place the Pentagon in charge of responding to natural disasters, terrorist attacks and outbreaks of disease.

"It may require change of law," Mr. Bush said yesterday. "It's very important for us as we look at the lessons of Katrina to think about other scenarios that might require a well-planned, significant federal response -- right off the bat -- to provide stability."

The American Civil Liberties Union (ACLU) accused Mr. Bush of attempting a power grab in the wake of fierce criticism that he responded too slowly to Hurricane Katrina a month ago.

"Using the military in domestic law enforcement is generally a very bad idea," said Timothy Edgar, national security policy counsel for the ACLU. "I'm afraid that it will have unforeseen consequences for civil liberties."

Louisiana Gov. Kathleen Babineaux Blanco and Mississippi Gov. Haley Barbour declined the president's offer to federalize the state's National Guard troops in the aftermath of Katrina. So Mr. Bush wants Congress to consider empowering the Pentagon with automatic control.
Currently, the lead federal agency responsible for disaster relief is the Federal Emergency Management Agency (FEMA), which has just 2,500 employees and is a division of the Homeland Security Department. Mr. Bush has suggested that a more appropriate agency is the Department of Defense (DoD), which has 1.4 million active-duty troops.
"I was speculating about was a scenario which would require federal assets to stabilize the situation -- primarily DoD assets -- and then hand back over to Department of Homeland Security," the president said.
But stabilizing a crisis might require federal troops to arrest looters and perform other law-enforcement duties, which would violate the Posse Comitatus Act of 1878. The law was passed in the wake of the Civil War and Reconstruction to prevent the use of federal troops from policing elections in former Confederate states.
The White House wants Congress to consider amending Posse Comitatus in order to grant the Pentagon greater powers.
"There are two committees that are moving forward on hearings to look at what went wrong and what went right with Hurricane Katrina and to apply lessons learned," Mr. McClellan said. "And this is an issue that they should look at as they're discussing these issues.
"We are also doing a comprehensive review within the federal government," he added.
The ACLU cautioned against such a change of law.
"The Posse Comitatus Act is sometimes criticized as some sort of obscure, centuries-old law," Mr. Edgar said. "But you know, most of our liberties are centuries old. So that would be like saying the Bill of Rights is obscure and old.
"Our strict separation between military and civilian power is one of the things that separates us from Latin America, for example," he added. "Changing that would put us on a huge slippery slope."
Meanwhile yesterday, outgoing FEMA Director Michael D. Brown reportedly said he should have sought help faster from the Pentagon after Katrina hit.
Mr. Brown spoke to congressional aides from both parties a day before he is scheduled to testify before a special House committee probing the government's response to the storm.
According to a memo from a Republican staffer who was at the 90-minute briefing, Mr. Brown expressed regrets "that he did not start screaming for DoD involvement" sooner. The first substantial numbers of active-duty troops responding to the Gulf Coast were sent Sept. 3 -- five days after the storm hit and after a flooded New Orleans had plunged into anarchy.
The memo, obtained by the Associated Press, said Mr. Brown took several shots at Mrs. Blanco and New Orleans Mayor C. Ray Nagin. He said the two officials "sparred during the crisis and could not work together cooperatively."
He also called the governor "indecisive" and said she would not cede control of the Louisiana National Guard to federal authorities because "it would have undercut her image politically," the document said.
http://www.washtimes.com/national/20050927-121122-3262r.htm

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Honolulu Star-Bulletin
September 26, 2005

Team Trains For Bio-Chem Attack

A National Guard unit leads Hawaii's efforts against terrorism using nerve gas or germs

By Audrey McAvoy, Associated Press

Twice a week in the middle of Diamond Head crater, a team of men don red and blue astronaut-like suits and practice detecting biological and chemical agents such as anthrax or the deadly nerve gas sarin.
The 22-man Hawaii National Guard team is at the forefront of the state's effort to protect the islands against terrorist attacks of the worst variety. Experts say the unit, together with efforts to stay up-to-date with intelligence on terrorist threats, is among the leading reasons why the state is prepared to cope with a such an emergency.
"Certainly Hawaii is an attractive terrorist target," said Rohan Gunaratna, a terrorism expert at the Singapore-based Institute of Defense and Strategic Studies. "But the state has taken certain measures to reduce the threat by investing and developing intelligence, providing better training, and also keeping relevant agencies alert and better oriented."
The Diamond Head-based 93rd Weapons of Mass Destruction Civil Support Team is one of 55 such units that have been set up or are being set up around the nation. All 50 states and the U.S. territories, including Guam and Puerto Rico, will eventually have their own teams in place.

Having a unit in the islands enables experts to swiftly identify potentially dangerous substances and start treating those exposed without having to wait for help to arrive from the mainland.
On Oahu, the team is trained to reach the scene of an outbreak within three hours and any site on a neighbor island within five hours.
The unit trains with the fire department's hazardous materials teams and authorities in all four counties at least once a year.
Hawaii is also one of only 12 states where National Guard soldiers are trained and equipped to decontaminate people exposed to chemical, biological or nuclear agents.
In addition, the Hawaii National Guard operates a backup communications system that would enable the governor, mayors and other leaders to communicate by phone and e-mail in the event the state's existing infrastructure collapses after a debilitating attack or natural disaster.
The satellite-based network -- one of only 12 under the command of National Guard troops nationwide -- is designed to let the state avoid a communication breakdown of the kind that hampered the rescue effort in New Orleans after Hurricane Katrina.
The more than 44,000 active-duty soldiers, sailors, airmen and Marines stationed at Hawaii military bases, meanwhile, are able to back up state efforts. Maj. Gen. Robert Lee, the state adjutant general, said military commanders have assured him they will come to Hawaii's aid in a domestic security emergency.
Such abilities should also help the state cope with a hurricane, tsunami or other natural disasters.
Hawaii's distance from the rest of the country may have helped ensure that it has the extra resources.
Lee said the chief of the National Guard put Hawaii on the list to receive the decontamination training and the backup communications system after he explained how critical these capabilities were for the nation's only island state.
Hawaii has been similarly aggressive on the intelligence front.
Gunaratna said Hawaii has been studying which chemical agents terrorists might be developing to use and then investing in how to cope with these substances.
"They are constantly training and they are constantly looking at the capabilities of terrorist groups," Gunaratna said. "They understand what the terrorists know and they are preparing the countermeasures."
Gunaratna told delegates at a homeland security conference in Waikiki last week that al-Qaida had so far been prevented from obtaining biological and chemical weapons because it was having difficulty recruiting capable scientists.
http://starbulletin.com/2005/09/26/news/story4.html

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Christian Science Monitor
September 29, 2005
Pg. 1

Military Wary Of Disaster Role

Some worry that a revision of its homeland mission would take away from war capabilities.

By Mark Sappenfield, Staff writer of The Christian Science Monitor
WASHINGTON -- When President Bush asked Congress this week to consider whether the military should take the leading role in disaster response, he was merely picking up where other politicians have left off. Washington has long sought to induce the Pentagon to take a larger share of homeland security in times of crisis - from the war on drugs to the war on terror.
The notion has enraged civil libertarians and wary members of Congress, who fear the power of a military let loose on its own people. Yet in many respects, the greatest opponent of giving the military more authority at home has been the military itself.
It is a reluctance born of a martial ethos - the insistence that the military exists to fight the nation's wars, not to act as police. The fact that America remains at war in Iraq and Afghanistan has only deepened those reservations. So far, the Department of Defense has not taken a public stance on the president's idea, yet among many in the military community, there is concern that any major revision of the military's homeland mission could be both unnecessary and counterproductive.
"The military needs to focus on its core competencies - fighting wars," says Loren Thompson, a defense analyst at the Lexington Institute in Arlington, Va. "If we load the military with every mission that other cabinet agencies don't do well, then it won't be able to do its job well."
Indeed, Mr. Bush appears to be turning to the military in part because it was the only federal institution perceived to be competent in the aftermath of hurricane Katrina. Now, he and others are saying that the military might be the

only federal asset able to respond quickly and effectively to disasters that overwhelm local police, fire, and emergency teams - as Katrina did. "Is there a natural disaster of a certain size that would then enable the Defense Department to become the lead agency in coordinating and leading the response effort?" Bush asked at a briefing last weekend.

What this might mean for the military, however, is a task that the president has left to Congress. Sen. John Warner (R) of Virginia, chair of the Armed Services Committee, has said that Congress needs to consider amending Posse Comitatus - the Reconstruction-era law that prohibits federal troops from taking part in law-enforcement operations. The law does not affect National Guard troops, because they are called up by their governors and therefore under local control. But with so many Guard soldiers in Iraq, and with the scope of the damage in the Gulf Coast region, other lawmakers agree that Congress must consider expanding the authority of active-duty forces after a catastrophic disaster.

"[Katrina] does represent a significant change, and I think we'll have to explore carefully whether the only option we have to increase the effectiveness of response ... is to break the normal line that keeps the military out of certain civilian activities," Sen. Susan Collins, chair of the Homeland Security Committee, said at a Monitor breakfast this week.

It is a move that military leaders have resisted in the past. The issue is not so much Posse Comitatus itself, which legal experts say has many loopholes, but what Posse Comitatus represents. It is part of a doctrine that sees the American military primarily as a war-fighting force. It shields the armed forces from the burden of additional domestic duties - and the possibility of being involved in an incident like Kent State, where National Guard soldiers killed four antiwar protesters in 1970.

After the Sept. 11 attacks, Gen. Thomas White told Congress that Posse Comitatus "is fine the way it sits."

Today, any move to amend Posse Comitatus, say military analysts, would represent not only a move in the wrong direction, but also a misapprehension of the situation.

For one, it is unnecessary, they say. The active-duty military can already support disaster relief in a variety of ways that are in accord with Posse Comitatus - providing logistics and humanitarian aid, for example, as has happened in the Gulf Coast region. For law enforcement, emergency officials have the National Guard - and if one state's Guard is depleted by overseas deployments, it can ask for help from other states through their network of Emergency Management Assistance Compacts.

Defense Secretary Donald Rumsfeld suggested as much in a Pentagon briefing this week, noting that some 300,000 Guard members were available across the country even at the peak of the Katrina deployment. "And of course the Guard, as opposed to the active force, tends to have a higher proportion of people who do things that are appropriate in a domestic setting," he added.

Moreover, if a disaster is deemed too great even for the National Guard, the president has the authority to federalize the response, which would bring in active-duty troops as law enforcement - something that occurred in 1992 during the Rodney King riots in Los Angeles.

But federalizing disaster response can be a tricky prospect, fraught with tensions between Washington and state officials. Those tensions were apparent Tuesday, when Michael Brown, former Federal Emergency Management Agency director, blamed local officials for the ineffectual response to Katrina.

With no concrete plans in place, Secretary Rumsfeld said Tuesday that it is too early to pass judgment on the president's comments. But some observers wonder whether the current push to increase military involvement is simply a way for the administration to avoid the tough choices.

The military can help with logistics and planning and response, but "the important decisions that need to be made are political," says retired Col. Randall Larsen, founder of the Institute for Homeland Security. "It's not a four-star general who should be making them."

http://www.csmonitor.com/2005/0929/p01s03-usmi.html

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Washington Times
September 29, 2005
Pg. 21

Defining Deterrence

By Robert R. Monroe

Misunderstandings over "deterrence" are greatly damaging U.S. foreign policy and national security. Deterrence is based upon fear. We deter someone from an action against us by instilling fear of the consequences. To be effective, our threat of deterrence must be credible. Our adversary must absolutely believe we will carry out our threat.

In the case of nuclear deterrence -- since the stakes are so high -- he must be confident the consequences for him will be intolerable; that we will destroy all he holds dear; that we will do so rapidly and devastatingly; and that the loss to him will be far greater than any gain from his planned action.

A classic example was our wise and effective nuclear deterrence during the Cold War. The Soviet Union threatened to destroy America by launching nuclear weapons. We deterred this by the poised readiness of thousands of U.S. nuclear weapons targeted on those assets the Soviets valued most (their leadership, nuclear weapons, military forces, etc.).

But deterrence must also be intensely dynamic. We unceasingly pushed technology to the very edge. We continuously modernized our nuclear weapons and their delivery systems. We frequently tested our nuclear weapons so we -- and our adversaries -- would have no doubt about their effectiveness. We continually adjusted our targeting to match the values of changing opposition leaders. Our military forces exercised constantly in the realistic use of these weapons. And our nation's leaders often declared our absolute determination to respond to any attack with overwhelming nuclear force.

As a result, nuclear deterrence worked. It really worked. Our nuclear weapons -- prepared for instant launch -- prevented, for more than 40 years, use of even a single nuclear weapon, anywhere, despite countless crises and many hot wars. Nuclear weapons should receive the Nobel Peace Prize.

And this was achieved in the best democratic manner. Successive presidents made the case, clearly and powerfully, to the American people. There were always opposing views, but public opinion overwhelmingly supported this strategy, leading to decades-long bipartisan support in Congress.

Contrast that with today. America faces an equally serious threat, not just from nuclear weapons but from other weapons of mass destruction (WMD) as well. Moreover, today's threats are more difficult, distributed, indistinct. However, U.S. nuclear weapons can just as effectively deter rogue, failed and failing states, and terrorist organizations in sanctuary states, as they were in the Cold War if we develop a totally different deterrent strategy and totally different nuclear weapons.

Yet for 15 years no U.S. president has informed the American people, in detail, exactly how important nuclear weapons are to our future national security, and exactly how our nuclear strategy and stockpile must be transformed. We have been frozen in time, looking backward at a Cold War stockpile of "massive retaliation" weapons which are ineffective in deterring today's adversaries. They simply have no credibility of use. For example, North Korea and Iran continue, undeterred, in their drive to acquire nuclear weapons, quite confident we would never a use a Cold War nuclear weapon that might kill or injure thousands of innocent civilians and spread radiation widely. But new, highly accurate, very low-yield, penetrating nuclear weapons, designed for reduced residual radiation and for nuclear effects explicitly tailored to defeat WMD-type targets, would have great credibility. This is not to say these weapons would be our first choice -- they would be our last.

But if diplomacy, economic measures and conventional forces were ineffective in deterring nuclear weapons proliferation to irresponsible, aggressive states or groups, it would be wise for the president to have an alternative to loss of U.S. cities.

In general, immobilization of our nuclear strategy and stockpile has been championed by those who refuse to learn from history, who are motivated by emotion rather than logic, or who seek partisan political advantage. They are wrong in most of their views. First, they're wrong in believing the U.S. achieves "deterrence" simply by having nuclear weapons. An overaged, untested, irrelevant stockpile won't deter current adversaries from anything.

Second, they're wrong in believing we should think of nuclear weapons as useful only in deterring launch of nuclear weapons (as in the Cold War). Rather, appropriate nuclear weapons give us the power to deter all types of actions by our adversaries (e.g., acquisition of WMD by rogue states). Third, they're wrong in trying to block the U.S. from designing and testing appropriate new, low-yield, specialized weapons. Nuclear deterrence is simply too important to sacrifice.

Fourth, they're wrong in believing our designing and testing new nuclear weapons will somehow contribute to proliferation. In fact, it's the only way to stop proliferation.

The Nonproliferation Treaty, cornerstone of global nonproliferation for 35 years, explicitly approves the U.S. (and four others) as nuclear weapons states, expected to design, test and produce new nuclear weapons as needed.

This treaty is structured as a bargain. Non-nuclear weapons states agree not to acquire nuclear weapons. States with nuclear weapons agree to try to prevent all others from acquiring them. To do this, modernization of U.S. weapons for deterrence is not only allowed but implicitly required.

In summary, until we clearly understand "nuclear deterrence" in terms of today's and tomorrow's world our strategy is at risk.

Robert R. Monroe, vice admiral of the U.S. Navy (Retired), is a former director of the Defense Nuclear Agency and a member of the Nuclear Strategy Forum.

http://www.washtimes.com/commentary/20050928-084419-6606r.htm

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Washington Times
September 30, 2005
Pg. 1

Israelis Urge U.S. To Stop Iran's Nuke Goals

'If we have to do it, we'll do it'

By David R. Sands, The Washington Times

The United States and its allies must act to stop Iran's nuclear programs -- by force if necessary -- because conventional diplomacy will not work, three senior Israeli lawmakers from across the political spectrum warned yesterday.

As a last resort, they said, Israel itself would act unilaterally to prevent Iran from acquiring nuclear arms.

Iran will not be deterred "by anything short of a threat of force," said Arieh Eldad, a member of Israel's right-wing National Union Party, part of a delegation of Knesset members visiting Washington this week.

"They won't be stopped unless they are convinced their programs will be destroyed if they continue," he said.

Yuval Steinitz, chairman of the Knesset Foreign Affairs and Defense Committee, said the best hope was for the United States and other major powers to make it clear to Iranian leaders now there was "no chance they will ever see the fruits of a nuclear program."

"Threats of sanctions and isolation alone will not do it," said Mr. Steinitz.

Yosef Lapid, head of the centrist opposition Shinui Party in the Knesset, added that Israel "will not live under the threat of an Iranian nuclear bomb."

"We feel we are obliged to warn our friends that Israel should not be pushed into a situation where we see no other solution but to act unilaterally" against Iran, he said.

Mr. Steinitz, a member of Prime Minister Ariel Sharon's ruling Likud Party, stopped just short of a direct threat to bomb suspect Iranian nuclear sites.

Mr. Steinitz said Israeli officials estimate that Tehran is only two to three years away from developing a nuclear bomb and that time was running out for the world to act.

"We see an Iranian bomb as a devastating, existential threat to Israel, to the entire Middle East, to all Western interests in the region," he said.

"Despite all the different circumstances, we see similarities to what happened in the 1930s, when people underestimated the real problem or focused on other dangers. For us, either the world will tackle Iran in advance or all of us will face the consequences."

The Bush administration has led the diplomatic campaign to pressure Iran, claiming the Islamic regime for two decades has secretly pursued a nuclear arsenal. The board of the U.N.'s nuclear watchdog agency in Vienna over the weekend concluded Iran had violated international pledges on its nuclear programs and said the matter could be referred to the U.N. Security Council.

Iranian officials harshly condemned the resolution and insist the country has the right to pursue a peaceful nuclear program to meet its energy needs.

Israel has acted unilaterally before to halt a nuclear program by a hostile neighbor, bombing Iraq's Osirak reactor in 1981. Widely condemned at the time, the surprise raid is now credited with dealing a major setback to Saddam Hussein's nuclear ambitions.

Mr. Eldad said Israelis across the political spectrum see Iran as the country's most serious threat and one that cannot be ignored.

But he added that unilateral action by Israel was the "worst possible scenario," likely to inflame opinion throughout the Muslim world.

"If we have to do it, we'll do it," he said with a shrug. "If the United States and the world community do it, there is a chance the issue can be contained. If Israel has to do it alone, there is no chance the conflict can be contained."

Mr. Lapid said he was sensitive to criticism that Israel was trying to push Washington into a potentially armed conflict with Iran that many Americans now oppose.

"Our mission is to point out the dangers we see, to ourselves and to our friends," he said. "Avoiding speaking the truth does not mean you can then avoid facing the consequences of those facts," he said.

The lawmakers met with their U.S. counterparts, as well as with senior administration officials, saying they highlighted the Iranian danger in all their meetings.

Asked if he thought the message got through, Mr. Steinitz said, "I did not get the feeling we were talking to the walls."

http://www.washtimes.com/world/20050929-114709-2065r.htm

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British American Security Information Council
BASIC NOTES
OCCASIONAL PAPERS ON INTERNATIONAL SECURITY POLICY
20 SEPTEMBER 2005

Raising the stakes: Iran's resumption of nuclear activities

Andreas Persbo

Introduction

For over two years, Iran's nuclear activities have been a cause of concern for the international community. The International Atomic Energy Agency (IAEA) has concluded that Iran has failed in a number of instances over an extended period of time (from 1991 and onwards) to oblige with its safeguards agreement. Specifically, Iran has breached its safeguards agreement with respect to the reporting of nuclear material, its processing and its use, as well as the declaration of facilities where such material had been processed and stored.[1]

On 1 August 2005, Iran decided to resume uranium conversion at its uranium conversion facility (UCF) in Esfahan. Iran's decision to resume conversion was immediately followed by an E-3 (UK, France and Germany) decision to back an US initiative to send the question of whether Iran is in compliance with its safeguards agreement and its obligations under the 1968 Nuclear Non-Proliferation Treaty (NPT) to the United Nations Security Council (UNSC). . . . (Click on hyperlink below for complete paper.)

http://www.basicint.org/pubs/Notes/BN050920.htm

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Chicago Tribune
September 30, 2005

Military Analyzes Response To Storms

By Stephen J. Hedges, Washington Bureau

WASHINGTON -- Communications failures among military and civilian relief units responding to Hurricane Katrina made it difficult to determine how much damage had been done and who needed help, according to the U.S. Navy admiral who commanded the military response to the storm.

"The devastation [from Katrina] was so complete, so comprehensive, principally in Mississippi, that it was a little while before we had a grasp" of the situation, said Adm. Timothy Keating, the head of the Northern Command based in Colorado who led the military response to last weekend's Hurricane Rita. "The damage was so bad we couldn't figure out how bad it was."

Keating, in a meeting with reporters, also said the military moved more quickly to preposition forces in Texas and Louisiana for Rita, in part because of hard lessons learned from Katrina, which struck Aug. 29.

"Our ability to get eyes on target is critical, and that's another area where we made accommodations for Rita," he said, "because of what we saw, or didn't see, with Katrina."

Although advance military teams were in Mississippi and Louisiana before the hurricane hit, it was several days before large numbers of National Guard and active-duty military units and helicopters arrived. Active-duty troops were deployed only when it became apparent that state and local agencies, as well as National Guard units, were overwhelmed.

The Defense Department eventually deployed about 50,000 National Guard soldiers from all 50 states and another 22,000 active-duty troops to Louisiana and Mississippi.

Even some within the military have found fault with the response. National Guard units lacked satellite phones and night vision gear, according to Gen. Steven Blum, the head of the National Guard; that equipment was with units in Iraq. It also took several days to deploy what eventually became a fleet of more than 150 military helicopters to the Gulf Coast.

Keating said that while the Northern Command had deployed advance teams for Katrina, he only received authority to use active-duty troops on the day the storm hit the Gulf Coast. The authority came from Gordon England, the acting deputy defense secretary.

But with the power out and telephone lines and cell phone towers swept away, local, state and federal emergency crews and soldiers lost the ability to talk to each other. That failing, Keating said, is something that both military and civilian officials are examining.

During Hurricane Rita, he said, the Air Force launched AWACS aircraft to provide air traffic control to military aircraft working in stricken areas--a service that was not provided during Katrina.
http://www.chicagotribune.com/news/nationworld/chi-0509300347sep30,1,2113203.story

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Washington Post
October 2, 2005
Pg. C1

Ebola's Dogged Enemies

Team of Fort Detrick Scientists Labored for Years to Develop Vaccine

By Nelson Hernandez, Washington Post Staff Writer

By Day 3, Tom Geisbert knew the monkeys were going to die.

He could see it in their faces as he entered the monkey room in Suite AA-4, wearing the china-blue plastic spacesuit that serves as a uniform for the scientists of Fort Detrick's U.S. Army Medical Research Institute of Infectious Diseases when they are working with the world's most vicious viruses.

Healthy monkeys in the Biosafety Level 4 lab would often react to his suit by jumping, screeching and beating on their cages. But these monkeys glared sullenly at Geisbert with bloodshot eyes and expressionless faces.

It was Oct. 25, 1999. Geisbert had devoted nearly a decade to finding a vaccine for Ebola. Now he was waiting to see whether the vaccine he'd given the monkeys would provide any protection against the Ebola raging inside their bodies.

He pulled on the back of the cage, and a false wall expanded, slowly pressing a monkey against the bars, where Geisbert jabbed it in the thigh with anesthetic. Fifteen minutes later, he pulled the sedated primate from its cage. He drew blood: The white blood cell count was plummeting. The vaccine for a disease more lethal than smallpox was failing. It was a bad day in the fight against Ebola.

It would take four more years of such days before Geisbert and his team would make a breakthrough that could save lives by offering protection from an epidemic or a bioterrorism attack.

Each day, Geisbert steeled himself to witness the ravages of the virus.

When he checked on the monkeys on Day 4, the biscuit trays in front of some cages were full; the monkeys had stopped eating. By Day 5, he could see rashes on their arms and chests. On Day 7, the monkeys began to die.

By Day 11, as he dissected the last dead animal, Geisbert was resigned to starting all over again.

The Drawing Board

Ebola has fascinated Geisbert, 43, since he first looked at the tiny particle through an electron microscope, noting its spaghetti-like shape with the characteristic shepherd's crook on the end. Not long after, he co-discovered a strain that had broken out among research monkeys in Reston -- a tale that made its way into Richard Preston's 1994 bestseller "The Hot Zone" and made Geisbert a celebrity in the science world. He had made little progress since, testing four vaccine solutions, all of which had worked in mice but failed in monkeys.

Geisbert was exasperated, and so was his wife, Joan, who had worked in the lab longer than he had. "We share the same frustration and hard work that went into a lot of failed . . . studies: all the hours, all the time," he recalled. "We have always been, I'd say, just short of obsessed with getting the vaccines."

Geisbert knew that every time he and Joan went into the lab, they were risking their lives. Not that they were doing anything more dangerous than anyone else at the institute, a center for biodefense research in Frederick and one of only a handful of labs in the United States allowed to work with deadly, incurable diseases. The PhDs who swarmed the halls dealt with these things every day.

"I think the job that compares closest to what we do would be a fighter pilot -- similar phenotype," Geisbert explained in an e-mail. His search for a vaccine has been reconstructed through interviews, correspondence and a paper published in the June issue of a scientific journal.

He and his wife, a veteran lab technician, gathered these virus jocks into a close-knit team: Lisa Hensley, who'd come to the institute fresh out of graduate school, looking to make her mark; Elizabeth Fritz, who switched specialties just to work with viruses; and Katie Daddario, who got into science, she joked, because "I like dead things."

Together with Hensley, Geisbert tallied up what he knew: that Ebola had made the genetic leap from an unknown host animal -- maybe an insect or a bat -- into monkeys in Africa. That the virus then jumped to humans in 1976 via contact with infected animals. That the most recent major outbreak, in 1995 in Congo, had killed 81 percent of the 315 people infected. That the victims had suffered gruesome deaths from massive internal hemorrhaging. And that Ebola had an equally nasty brother known as Marburg, which also had no vaccine.

Geisbert realized they had to break the wall of unknowns surrounding the virus: How does Ebola infect a cell? What does it do when it gets there? Why can't the immune system defend against it?
If his team knew what the virus attacked, it would understand how to defend against it.
He pondered what had gone wrong; the vaccines had all worked in guinea pigs and mice. But the virus acts differently in those species than in monkeys and humans -- the researchers just didn't know how, at least not on the cellular level.
The solution, Geisbert recalled, was obvious: They needed to infect more monkeys. Only this time, they would not let Ebola kill the primates. They would do it themselves.

21 Monkeys

Geisbert and his team moved around the lab carefully, making sure the curly yellow air hoses hanging from the ceiling and plugged into their hips did not become entangled with one another. The air running through the hoses roared inside the suits. It was almost loud enough to drown out the hoo-hoo cries of the younger monkeys and the doglike barks of the older ones. One by one, 21 animals were silenced by anesthetic, pulled from their cages and stuck in the thigh with a needle holding one milliliter of Ebola virus stock.
At the end of that first day, Aug. 6, 2000, the researchers sacrificed three monkeys, putting their small bodies, weighing nine to 14 pounds, on the exam table. Geisbert said the researchers communicated mostly through hand gestures -- a scissors motion or a clicking thumb when one of them wanted a pen -- as they drained the monkeys' blood and took samples of organs.
Before they could infect a single monkey, the researchers needed permission from the institute's Lab Animal Care and Use Committee, which enforces strict international standards on the treatment of animals in scientific research. Geisbert eventually convinced the panel that there would be no other way to understand the virus.
The work was stressful and exhausting, with shifts of 12 hours or more in the constrictive labs. The slightest mistake could ruin the research results, meaning a monkey's life -- valued at roughly $5,000 -- had been wasted. A major accident, such as a needle stick or an animal bite, might cost a human life.
They would do this for six days, killing three or four monkeys a day to gain something like a stop-motion series of photographs of how Ebola destroys the body. Frame 1: Healthy monkeys. Frame 2: Virus detected in the spleen and lymph nodes. Frame 3: The lymph nodes are swollen up to three times their original size, and the virus is floating in the bloodstream. Frame 4: Fevers ranging from 103 to 104 degrees, swollen livers and rashes on the arms and groin. Frame 5: Anorexia, dehydration and depression as the victims start to bleed internally. Frame 6: All the animals are dead.
After months of analyzing lab results, Geisbert and Hensley concluded that Ebola conducts a blitz against the immune system, first knocking out its early-warning radar, known as the dendritic cells.
If his team could find a way of protecting those cells, Geisbert thought, they might be able to give the body a fighting chance.

The Marburg Conference

The solution came over a stein of German beer. Geisbert and a scientist from Canada's Public Health Agency, Heinz Feldmann, were sampling the brews in Marburg, Germany -- where the Marburg virus was discovered -- after a long day at a conference in October 2000.
The hot topic of the conference had been a scientific article published a few months earlier. Viruses are covered in tiny spikes that allow them to stick to cells. The article suggested Ebola's spikes were toxic.
Geisbert and Feldmann technically were competitors in the field, but they also were close friends. Over beers, they discussed testing the paper's conclusions.
Feldmann had been working with a virus called vesicular stomatitis, known as VSV, which is harmless in almost all humans. The virus was genetically similar in some ways to Ebola. Thanks to advances in genetic engineering, it was possible to create VSV that grew Ebola's spikes. It was like one person having someone else's fingerprints.
If Ebola's spikes weren't toxic, as the other scientists suggested, they could possibly use the same method to create a vaccine. The immune system would mistake the retooled VSV for Ebola and produce defenses that could deal with it.
There was another advantage. Ebola's spikes preferred to stick to those early warning dendritic cells and infect them. A vaccine armed the same way would protect the cells most in need.
Geisbert left Germany fired up, but he'd have to wait three years before testing the idea. By then, the world had changed.

Anthrax Investigation

The slide under Geisbert's electron microscope wasn't Ebola. It was anthrax.
It was Oct. 16, 2001, barely a month after the Pentagon had burned and the World Trade Center had been reduced to rubble. Now a new wave of terror gripped the country: letters filled with deadly spores.

Geisbert was asked to examine the anthrax powder found in a letter mailed to Sen. Thomas A. Daschle. It was the first of many samples he'd analyze over several months while federal investigators sought the source of the anthrax spores. It was possible that the anthrax had come from the institute itself. Geisbert and his colleagues took polygraphs and answered questions.

Meanwhile, Geisbert's binders full of Ebola research gathered dust in his office, amid the stacks of nature magazines on the floor and the wastebasket full of RC Cola cans. By the time he was able to turn his attention back to Ebola, in February 2002, his team had a lot of catching up to do: They were still crunching data from the 21-monkey experiment, thinking about a therapy for Ebola and talking about testing a promising vaccine that used another method.

That vaccine, developed by Gary Nabel of the National Institute of Allergy and Infectious Diseases in Bethesda, worked in monkeys. Nabel published his results in 2003, to much public acclaim.

Geisbert's feelings about Nabel's vaccine were complicated. He had helped Nabel test it in monkeys and said he was thrilled when it worked. Still, he was anxious to try out the idea he and Feldmann had discussed in Germany.

So were some other scientists, who were cautious about the new vaccine. Like any new discovery, therewas no guarantee it would work when it reached the human trial stage. Also, the vaccine hadn't been tested against Marburg. Geisbert and Feldmann were almost ready to test a pair of vaccines that together could protect against both.

Testing the Vaccine

It was time again for the monkeys. Twenty-eight days earlier, six monkeys had been given vaccines: Four were given a vaccine that protected against Ebola, and two were inoculated against Marburg. Now, on Aug. 19, 2003, Geisbert was going to see if the Ebola vaccine worked.

They injected the monkeys with a large, lethal dose of Ebola -- similar to what Geisbert might get if he accidentally infected himself with a needle or was bitten by an animal. The two monkeys who had been given the Marburg vaccine were the control animals.

Then they waited.

Day 3 passed, when Ebola would be expected to appear, and the vaccinated monkeys still looked good. The key was the blood samples: Geisbert didn't want to trust his eyes, worried that the vaccine might only delay Ebola's onslaught. But as the control monkeys turned feverish and their white blood cell counts dropped, the four vaccinated monkeys' counts stayed strong.

By Day 5, Geisbert's confidence was growing. When he walked into the monkey room, the biscuit trays in front of the vaccinated monkeys' cages were empty. They had healthy appetites, while the control monkeys were beginning to crumple.

Still, the researchers did not want to claim victory too soon. "All four monkeys look great this morning," Geisbert wrote in an e-mail to Feldmann and his colleague, Steven Jones, on Day 9. "We are at the point now, where each day that goes by where the monkeys show no clinical symptoms of disease, is essentially a logarithmic increase in probability for survival. Continue to keep your fingers crossed."

"I have everything crossed to be honest," Jones replied. "I don't think there are words to describe how I would feel if one of the animals died."

The next day, Geisbert drew blood from the four monkeys. The white blood cell counts were normal. There was no sign of the virus; the monkeys' immune systems had stopped the invasion. They were going to live. The scientists had done it -- they had created a vaccine for Ebola. Their results were published in the June issue of Nature Medicine. More testing would be needed, but the vaccine could make it into a human arm in five years.

The article included the results of one more test -- Marburg. The test, begun Aug. 10, 2004, was identical: Six monkeys, four of them protected, this time against Marburg, and the two controls.

The researchers waited expectantly -- for if this vaccine saved the monkeys, they might be able to give the world a one-shot vaccine for both Ebola and Marburg.

Three days turned into six, and six into nine; the monkeys looked healthy, their blood tests good. When Geisbert came in on Day 10 for another round of tests, he knew it had worked. The biscuit trays were empty.

http://www.washingtonpost.com/wp-dyn/content/article/2005/10/01/AR2005100101357.html

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