INDEPTH: BIOLOGICAL WEAPONS

Red Lies: Biological warfare and the Soviet Union
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It was a horrible accident -- for the people who died and for what it revealed. It would show the world the effects of anthrax on a civilian population, and it would expose the existence of a massive biological weapons program in the former Soviet Union; a program, some fear, exists to this day.

"People began to die around the fifth or sixth of April," says Dr. Marguerita Ilyenko, a hospital administrator in Sverdlovsk, Russia. "Before that, the doctors had noticed that animals were dying, sheep, pigs. Then the people began dying. I get in my office in the morning, and Rosa Gazeeva, who still works as a doctor in our hospital, tells me 'Five people died on me overnight.' So I say 'are you out of your mind?'

"I threw down my purse, rushed upstairs. It really was a nightmare. Ambulances were constantly bringing in patients. Some were still alive, others already dead."

"In Sverdlovsk (now called Yekaterinburg), Russia, the faces of the dead on dozens of tombstones bear silent witness to one of the Soviet Union's darkest secrets: all mark one point in time; early April, 1979."

For years, there was very little information to explain why or how the people died. The cause of death was explained away with lies to conceal one of the most frightening developments of the Cold War.

While the world worried about the nuclear threat, the Soviet Union was secretly amassing the largest biological weapons program in global history. It involved thousands of scientists, who spent two decades turning deadly diseases like anthrax and smallpox into weapons of mass destruction. There are those who fear that work continues inside Russia today.

Sverdlovsk has a long association with death. Czar Nicholas II and his family were executed in Sverdlovsk. Today, if its one million citizens were asked to choose a sister city, it might well be Hiroshima.

In April, 1979, a horrifying accident happened at a secretive military base
called "Compound 19." Behind imposing walls, a deadly production line turned out tonnes of anthrax powder for the Soviet Union's biological arsenal. One April morning, a small amount of the dust was accidentally released through the ventilation system. The invisible plume was blown over a working class neighbourhood and nearby ceramics factory.

Ivan Vershinin worked at that factory. His wife remembers the last time she saw him alive.

"By the time I got home, the ambulance was already there. The doctors said 'put some clothes on him right away or he'll die at home.' I said good-bye to him and the ambulance took him away and that was it.'

The sick began pouring into hospitals all around Sverdlovsk. Some were vomiting blood, many complained their lungs were on fire. Most died within 48 hours, as doctors frantically searched for the cause.

Dr. Marguerita Ilyenko was the director at one hospital.

"I walked up to one of the patients," she remembers. "I can still see him before my eyes, and he is talking to me, he is still alive. But right there in front of me, I can already see death spots forming all over his body! On his neck, on his back, doctors know what this means. Then he began to vomit and died. It was a very quick death."

Tamara Markova arrived at another hospital, searching for her husband.

"I got there, but he wasn't on the list, so they went to look for him in the morgue and they found him," Markova says. "I forgot to tell you -- when they were conducting the autopsy, the doctor said his lungs looked like jelly. They were completely destroyed."

The city's chief pathologist, Dr. Faina Abramova, was urgently called back to work, late at night, to observe one of the very first autopsies. She remembers one victim's brain membrane was covered with something that looked like a hat.

"It was red, so there was hemorrhage," she says. "So we were wondering what could cause this? I remembered that when I was a student, we learned that anthrax causes lesions in the brain. When this happens, the lesions resemble a cardinal's hat. But where could this anthrax have come from?"

"They were trying to convince us that the illness came from meat. They said that somewhere outside the city, an entire herd of cattle had fallen ill and that the anthrax had come from them."

It was reasonable to suggest it had come from a farm around Sverdlovsk. Anthrax is a spore that grows naturally in pastures. Animals occasionally eat it when they graze, and people can pick up the infection if their skin comes in contact with diseased animals. It is not usually fatal in humans. There was another important difference. This anthrax had been inhaled, and the Soviet military knew it.

**Compound 19**

Behind the walls of Compound 19, the Soviet army was secretly coping with its own casualties.
In the aftermath of the accident, the Soviets would lie to their own people in order to conceal what they were doing from the outside world.

Long before this accident, the Soviet Union and many other countries had signed the Biological Weapons Convention. It was a promise to end decades of germ warfare research by both sides in the Cold War. The Soviets had eagerly helped write the 1972 treaty. But in the process, they realized just how far their own research lagged behind the West.

So at the very moment they were publicly signing the treaty, they were secretly laying plans to break it.

Within one year of the signing, senior Soviet scientists, like Dr. Igor Domaradskizh, received marching orders from the Kremlin to begin covertly advancing the biological arms race.

The Kremlin established a biological warfare research program called Biopreparat.

“I think one of the reasons was that it was assumed that due to the great achievements in the area of molecular biology and genetics in England, the States, probably Canada, that they had likely managed to be ahead of where we were at that stage,” Domaradskizh says. “Somehow we had to make up the gap that developed between us and those countries. And it was precisely because the convention had already been signed by them, that all this research was happening.”

The headquarters of Biopreparat was established down a tree-shrouded laneway not far from the Kremlin. From behind its walls, officials coordinated the efforts of 47 different research facilities spread across the Soviet Union. Thousands of scientists took deadly germs like anthrax, smallpox and plague, and studied ways of releasing them into the air as weapons; perfected formulas were turned over to military facilities for mass production and stockpiling by the tonne.

As the program continued to grow and seek out new scientific talent, one promising young doctor was recruited right out of medical school. At the time of the anthrax accident in Sverdlovsk, Ken Alibek was just beginning his career at Biopreparat.

“I was, what you say, hardliner,” Alibek says. “I was a Communist, and you know I was a person who believed this weapon was a part of the Soviet Union's arsenal.”

Alibek says he never stopped to wonder why doctors trained to cure diseases were now using them to make weapons of mass destruction.

"Nobody considered people's life something precious. You know for us, we didn't calculate individuals -- we calculated millions and millions. You know when you calculate millions, it's statistics; it's not tragedy."

So for a military that calculated deaths in the millions, the accident was but a blip on the learning curve. The KGB quickly descended on the city's hospitals to confiscate all medical records and alter death certificates. To ensure the final accident report cited food poisoning as the cause, Moscow despatched a more compliant pathologist named Dr. Nikiforov.
When Nikiforov’s paper came out, it was a complete surprise -- not only for us, but also for everyone," says Sverdlovsk pathologist Dr. Abramova. "All of the doctors who worked on this talked to each other. After the autopsy, all thought that this was a respiratory form of anthrax poisoning. In other words, it occurred through breathing. But this was just talk and it was quickly being muffled. Why? We were being advised to talk as little as possible."

A massive clean-up operation ordered to eliminate any trace of the military's anthrax. The city of Sverdlovsk was placed under a dusk to dawn curfew.

Teams of men wearing decontamination suits began making unexplained visits to the homes of those who died.

"An ambulance arrived and they sprayed everything in our house," Markova says. "They took away the linen and took away everything. They even sprayed our dishes."

Officials decided all of the dead would be buried together in a single section of the city’s cemetery. Hospitals were ordered to look after many of the burials because families were too frightened to retrieve the bodies of loved ones.

"We were given instructions on how the corpse was to be wrapped in polyethylene sheets with a chlorine solution inside," Ilyenko says. "Teams were formed around the city, mostly composed of police officers, but they wouldn't get close to the coffins. They were also afraid, and stood there smiling. They wouldn't carry the corpses, so I had to get our own guys, carpenters, plumbers. I told them 'guys, I'll give you a bottle of alcohol each. Just help us.' That's how, using our own cars, we buried these people."

Some of the only records of the accident that still exist are documents Dr. Ilyenko managed to hide in a safe. They list the names of the those who died in civilian hospitals, almost 70 people in all. She says that number doesn't include the many soldiers who would have died.

The Defectors

By the time of the 1979 accident, Compound 19 was already the target of intense interest by Western intelligence agencies. In London, suspicion turned to alarm with news of the mysterious deaths in Sverdlovsk. Dr. Christopher Davis was a biological weapons expert with British intelligence.

"The professionals in the field were convinced that there was a large and growing program," Davis says. "What that program contained, where it was headed, just how complex it was, is another issue. It's difficult to accuse large buildings of bad things, you know. You've got to have someone inside them walk out and say we're doing x, y and z. And then you can say, uh huh, well we thought so."

It would take ten long years, but that's exactly what would happen, with the defection of Vladimir Pasechnik in 1989. Pasechnik was the administrative head of Biopreparat when he was whisked out of Moscow by British agents.

"I came to the conclusion that one possible way to stop the program will be bring the news
"He confirmed how much of a cover-up we'd been subject to," Davis says. "I think surprise is not quite the word; it's a sort of gulp feeling, and you think "oh dear." You've got a very strong impression of a deliberate planned program. We're talking, you know 25 to 30,000 people working on the program; uh maybe more in different capacities over a large number of years.

It is sometimes difficult to convey the sheer magnitude and sophistication of it. And it's easily said oh, they had a big program. It wasn't just big, it was massive."

By the time Vladimir Pasechnik defected to Britain, Ken Alibek had risen to become Biopreparat's chief scientist. During a scientific exchange visit to the United States, Alibek came to the unsettling conclusion the U.S. was not engaging in similar biological weapons research. With the CIA's assistance, he defected to the West, bringing with him firsthand scientific knowledge of the Soviet's secret program.

"They were shocked; shocked because you know they couldn't imagine that the Soviet Union had such an enormous, very powerful and sophisticated offensive program," Alibek says.

In the years since the Sverdlovsk accident, Alibek and a research team had taken the Soviet military's anthrax and made it even more deadly. He developed a process to take ground up anthrax spores and coat each particle in plastic and resin. It kept the anthrax aloft four times longer, increasing its ability to infect people.

"The main idea was just to make it more efficient. Just, for example, using a pretty small amount of this weapon to cover as much as possible territory, populated territory, [ to kill as many people as possible.]" Alibek says.

Over remote parts of the Soviet Union, Alibek's new anthrax and other biological weapons were tested on animals. The various substances were later placed inside cantaloupe shaped balls that could be packed inside the warheads of intercontinental ballistic missiles.

Richard Preston , author of books and articles on the effects of biological warfare, "It appears the Soviets had enough biowarhead material on hand to be able to knock out the top 100 cities in the United States."

"It appears that the Soviet government had developed intercontinental missile systems that were targeted on North America. They were loaded with such things as smallpox, black death, anthrax and the Marburg virus, which is a close cousin of ebola, and causes this massive hemorrhagic bleeding in human victims," Preston says.

Ken Alibek is now a consultant to the Pentagon. He has warned a Congressional committee the U.S. still has much to fear from the Russians.

"Until the Russians have provided a complete accounting of the biological weapons activities, it's very difficult to believe that they have ceased all these activities," Alibek says.

His words fell on receptive ears. The Soviet Union may have collapsed and Russian officials may insist all biological weapons research has stopped, but there are fears the Russian military may still be developing such weapons on its own.
"I see a lot of very very suspicious signs," Alibek says. "We need to understand we don't have to believe in everything that Russia says. There is a Russian expression: believe, but check. So we need to check; we need to be sure that nothing is going on."

It's one of the ironies of this massive biological weapons program that its only victims, so far, have been the Russian people themselves -- offering the world a rare human example of the horribly real effects of biological weapons.

"What we know about the effect of nuclear weapons is largely from studying what happened to human populations in Hiroshima and Nagasaki," Preston says. "What we know about anthrax is largely what we can tell from what happened in Sverdlovsk."

In an overgrown corner of the Sverdlovsk cemetery, the forgotten shallow graves of at least some of the soldiers who died inside Compound 19. Weather and time have worn away the only bare reminder of their existence. What the world cannot yet establish is whether the program they worked for has really ended -- or continues, buried and hidden, like its victims.

The Work Continues

In the spring of 1990, a limousine carrying British Prime Minister Margaret Thatcher was on its way to the Kremlin. A defector named Vladimir Pasechnik had just told British intelligence the Soviets have a top secret biological weapons program. Thatcher was ready to confront President Mikhail Gorbachev. Publicly their meeting was a cordial one. Privately, Thatcher accused Gorbachev of lying to the West, while secretly violating an international treaty. Gorbachev refused to confirm anything. It was just another in a long series of red lies.

Less than two years later, the Soviet Union would collapse, and with it, the elaborately constructed lies surrounding its secret biological weapons program. Boris Yeltsin, then President, would later admit his country had manufactured arsenals of deadly germs and diseases in violation of the Biological Weapons Convention. Yeltsin later tried to reassure the international community that the program was over, once and for all.

Western governments have spent the better part of this decade trying to verify that claim, and they remain deeply suspicious that some kind of biological weapons program continues inside Russia today.

The Kremlin's initial attempts to reassure the West began with an offer to inspect its biological research labs. A top secret facility in Obolensk, south of Moscow, was one of the labs that had long been the target of Western suspension. Inside these walls, scientists spent two decades turning deadly diseases like anthrax, smallpox and plague into airborne weapons. It was all part of a biological weapons empire known as Biopreparat, which, at its height, employed roughly 35,000 people. No one from the West had ever set foot here, but now with inspectors on their way, the Soviets had some cleaning up to do before company arrived.

Dr. Igor Domaradskizh was a senior scientist at the Obolensk facility when his boss, Vladimir Paseshnik, defected to Great Britain. He recalls how the Soviet government temporarily suspended their research work.

"So everything we were doing was taken under more stringent control," Domaradskizh says. "Gradually they would stop all our
The West was not easily misled. Former British intelligence agent Christopher Davis inspected the Obolensk facility. He still laughs at the excuse offered to explain away one suspicious test chamber.

"We were fully aware that they had undertaken explosive experimental work there. In other words, explosive dissemination of agents in the closed chamber," Davis says. "Anyway, so I said what are these marks here? You know, they look like explosion marks and what have you, damage etcetera. They said 'Oh no. No, that was due to one of the workmen when he put the door on, um it wouldn't go on properly, so he hit it with a hammer.' And I mean some of the things that came out. I mean if it were -- if the situation were not such, you'd have burst out laughing. I mean I think we did chuckle to ourselves. It was so absurd."

Absurd, yes. But it was a beginning. To eliminate Soviet suspicions of a secret U.S. biological weapons program, Washington invited Soviet scientists to inspect American military labs. That inspection team included Ken Alibek, the Soviet program's chief scientist and the man credited with inventing the deadliest form of anthrax ever known. Alibek had spent his entire career believing he was in a deadly biological arms race with the U.S.

"We thought the United States at least had such a program," Alibek says. "As a response to the United States program, we had to develop our own program; not just a simple program, a more powerful, more intensive, more sophisticated program."

The Soviets were brought to Fort Detrick Maryland, the headquarters of the U.S. military's biological research program. The Soviets had always suspected that this was where the U.S. secretly researched its own biological weapons, and once upon a time, those suspicions were correct. Back in the 1950's, in the earliest days of the Cold War, the U.S. not only trained its troops against biological attack, it had its own biological weapons program. Anthrax was the most popular weapon with the U.S. and its allies because it was a robust, long-lasting bacteria that killed very efficiently. The U.S., Canada and Great Britain conducted joint experiments, using a variety of animals, including rabbits, who were injected with anthrax to test its lethal power.

Those allied programs all came to an end in the early 1970's with the signing of the Biological Weapons Convention. So by the time Ken Alibek arrived at Fort Detrick, it housed only a handful of scientists conducting peaceful vaccine research. Feeling deceived by his own government, Alibek defected to the United States, providing the CIA with its most complete picture yet of the Soviet secret program.

Times were changing. The new Russian government was trying to show the West that deadly research, at labs like this one in Saratov, had come to an end. It allowed more inspections, and Biopreparat began laying off its highly skilled scientists. The U.S. realized those who remained would need to be converted to peaceful work. It came up with some money for joint vaccine research, there was even talk of exchange programs. But just as the West was finally beginning to trust Russia's intentions, a bombshell; it came from the labs at Obolensk, a facility the West thought it no longer had to worry about. While scientists here were researching improvements to Russia's anthrax vaccine, they created a deadly invention.

In the December 1997, issue of the medical journal Vaccine, the Obolensk scientists
claimed to have 'inadvertently' developed a new genetically altered strain of anthrax. Its most frightening attribute, this new strain overpowers Russia's anthrax vaccine, rendering it completely useless. North America's vaccine is different. But if this new anthrax defeats one vaccine, there's a fear it could defeat the other. At Fort Detrick, the study set off alarm bells.

"The idea of genetically engineered weapons has been of concern for some time," says Dr. Arthur Friedlander, the U.S. military's top anthrax expert. He is concerned by the implications of Russia's newly developed anthrax. 'It raises a concern that such an organism could be resistant to the U.S. vaccine if someone were to weaponize it," he says.

Fort Detrick's chief scientist, Dr. Peter Jahrling, has trouble assessing Russia's scientific motives. "That's the problem with all these biotechnology questions, is that for every offensive use, you can also cite a defensive use. It's possible to mount an offensive program under the cover of a defensive one."

If American scientists have difficulty assessing Russia's intent, Ken Alibek does not. The Russian scientists conducting this research were once his underlings at Biopreparat.

"I know them perfectly, all of them experts in developing biological weapons," Alibek says. "When they published an article regarding development of a new strain that would overcome immune system after vaccination with existing vaccines. For me the purpose of that work is clear...to develop a new agent to be used in biological weapons."

Igor Domaradskizh knows the scientists still at Biopreparat and questions their motivation. The current lead scientist was once Domadardskizh's protégée. "I don't know what can be done with anthrax so as to make the vaccine ineffective, change its genetic structure?" he says. "Maybe that's what he did, but what for? Then his work was of a military character. Such work isn't needed for peaceful goals."

After scientists at Biopreparat created their new "super anthrax," the U.S. government asked for a sample to test it against the North American vaccine. The Russians turned the request down flat.

By 2001, the U.S. had still not received a sample. But on September 4, The New York Times reported that the U.S. government was launching its own program to create genetically modified anthrax, at a laboratory of the Battelle Memorial Institute in West Jefferson, Ohio.

**Obolensk**

The Obolensk facility is concealed within miles of pine forest. "Corpus One" is the facility's biocontainment lab centrepiece. All around it are the other rundown buildings where Biopreparat scientists spent two decades secretly developing biological weapons. It was inside these labs that scientists recently created a new genetically altered strain of anthrax that may defeat the world's vaccines; renewing suspicions that Russia continues to develop biological weapons. When we were there in 1998, our requests for interviews were rebuffed at every turn.

For a facility with nothing to hide, our arrival at Corpus One provoked a tense confrontation.
"Is it possible for us to speak with anyone from the institute about the research that goes on here?" reporter Michael McAuliffe asked.

It began with polite denials from the facility's chief of security. Minutes later the police arrived, followed by agents of the First Security Bureau, the former KGB. Then armed soldiers emerged and surrounded our van, their presence at a peaceful civilian research facility was never explained. We were taken into custody, questioned for several hours and our cameras were seized. We managed to conceal our tapes.

"Of course it leaves us in highly suspicious," Christopher Davis says. "There was a point, in perhaps the early part of 1992, where we really thought we were going to move ahead into a new relationship, but it slid back, and retracted attitudes in Russia. If you ask me the straight question, which I think is what you're leading to, do you think the program continues today? My answer would have to be yes."

Author Richard Preston has written several best-selling books about biological weapons, and he says Biopreparat's labs are by no means the only concern.

"There is the big question about the closed military labs in Russia; the ones that the television people will never see," Preston says. Some of them are located near the city of Kirov, not far from Moscow. These are biological facilities that are absolutely controlled by the Russian military. Is genetic engineering taking place there with scientists who are not in contact with the West? Nobody knows."

More questions

Compound 19 is on the outskirts of Sverdlovsk, now called Ekaterinburg. It is one of the many secretive military complexes where deadly biological weapons were actually produced. For years, this facility churned out tonnes of lethal anthrax powder for the Soviet's secret arsenal.

Unlike Russia's scientific facilities, military facilities like Compound 19 remain top secret and closed to inspectors. No one from the West has ever been through the iron gates, so no one knows whether the production lines are still active or whether the underground vaults still contain stockpiles of biological agents.

Russia's most senior generals know the answer, and one of them has publicly suggested the military is maintaining some form of biological program. Alexandre Lebed is now a politician, but until recently, he was a prominent Russian general who rose to become Boris Yeltsin's security council chief. Answering a question once about the state of Russia's nuclear and biological arsenals, Lebed agreed "they are the weapons of wimps, but we have to preserve it; we have nothing else."

James Woolsey, former CIA director says "Russia is a chaotic place. The military often gets involved in things that they don't fully share with their political leadership." He finds the Russian military's continuing secrecy
"There has not been a long tradition of anything approaching civilian control of the military in Russia," Woolsey says. "The Russian military, historically, has not really been involved in coups and the like, but it has had a great deal of autonomy. It's difficult to assess how much of the information about what was going on with the offensive biological work had filtered up to someone like President Yeltsin or his immediate advisors. One just doesn't know."

Dr. Peter Jahrling knows that at least some of Biopreparat's former scientists are now working for the Russian military.

"Biopreparat did some cutting edge research," Jahrling says. "They clearly had great capability and they continue to have great capability. It's very clear that some of that capability was transferred over to the ministry of defense, which was the side of the house that developed these weapons for offensive use and the delivery systems and what have you. That whole side of the house is a black box. We still have not penetrated that and I don't know that we ever will."

The prospect of Russia's military launching a biological attack on the Western world seems extremely remote these days. With the country's deepening economic crisis, Russia's leaders clearly have more important things on their mind than world domination.

Poverty poses its own threat. There are reports that some of Biopreparat's scientists haven't been paid for six months, and thousands more have been laid off, with no hope of finding jobs elsewhere.

"Certainly with the decline of Biopreparat, a lot of very capable scientists lost their jobs and some have disappeared off the screen," Jahrling says. "Where they might have surfaced and what they might be doing, is a real concern. In the nuclear arena some of their nuclear scientists have surfaced in rogue states, and there's no reason to believe that similar things have not occurred with their with their former offensive biological warfare scientists."

That potential migration is worrying Western militaries, particularly in places like the Persian Gulf. Earlier this year, Canada despatched HMCS Toronto and other military personnel to the Gulf, as the world prepared for another showdown with Saddam Hussein. Concern over his biological weapons program prompted anthrax vaccinations for all Canadian military personnel. If Russia has in fact developed a new anthrax strain capable of defeating that vaccine, how long before Saddam buys either the formula or the scientists necessary to make it a weapon?

"We would be in bad shape if we were faced with a genetically altered strain that we had not yet been able to vaccinate our military personnel against," Woolsey says.

It hasn't happened yet, but former CIA Chief James Woolsey knows it's not out of the question.

"We're not really talking rocket science here. The information, in and of itself, might be enough for someone who had reasonably capable lab techniques and so forth. An experienced individual would be even more troubling, if he or she went to work with some Mideast government, say that was supporting terrorism."

The spectre of thousands of either unemployed or unpaid Biopreparat scientists selling their know-how to rogue states sends chills through the Western intelligence community. Even though the U.S. doesn't yet fully trust the Russians, it has recently taken the controversial step of giving Biopreparat even more money, to keep at least some of those scientists.
employed in peaceful research. It is only two million dollars.

Author Richard Preston fears it is too little too late. "Take one of the biggest virus laboratories in Russia, Vector, which is in Siberia," he says. "At its height, it was clearly a biowarfare lab; at its height, there must have been 4,500 scientists and technicians working there. Today, maybe a thousand. Where have the other thousands gone? Some have gone into other jobs in the Russian economy. But many of them have not been employed, and it's obvious that many of them have left Russia."

"When scientists in Russia don't have an opportunity to feed their children, when they sell flowers on Moscow streets, when they don't have an opportunity to buy sometimes food for their families, of course if they've got an opportunity to sell such results, nothing would stop them," Alibek says.