

THE INSPECTIONS MAZE

■ HOW UN INSPECTORS UNCOVERED IRAQ'S BIGGEST BIOWEAPONS FACILITY ■

IN FEBRUARY 1995, a team of United Nations Special Commission (UNSCOM) inspectors left Baghdad on a bus headed for Al Hakam, an hour southwest of the Iraqi capital.

For years, UNSCOM suspected that the remote, 10-square-mile facility was producing more than just pesticide and chicken-feed supplement, as the Iraqi government claimed. Some inspectors were certain it was a biological-weapons factory.

But this visit, like those before, failed to resolve the question.

"The Iraqis became very skilled over the years at deception and denial techniques," says Jonathan Tucker, a member of a UN inspection team that visited Al Hakam in 1995. "At the time of our visit, there was still some uncertainty about whether Al Hakam was, in fact, a bioweapons production facility."

It took a several teams of weapons inspectors – from the US, France, Sweden, Britain, Russia, and other nations – a year of digging before Iraq admitted that Al Hakam was producing biological weapons.

With a new UN resolution expected to pass this week, inspectors will be back in Iraq later this month armed with new technology and the lessons learned at Al Hakam. The UN estimates that there are some 700 sites to examine. But if Al Hakam is any indication, the Iraqi inspection games are just beginning.

By Ben Arnoldy & David S. Hauck
Staff writers of The Christian Science Monitor

1 The suspicions:

AL HAKAM WAS SUPPOSEDLY for civilian purposes only. But its remote location, guard towers, and high barbed-wire fence seemed strange to inspectors. The unusual distance between buildings appeared to be an attempt to provide containment for potential toxic leaks. And for an alleged chicken-feed factory, only three scrawny chickens were seen strutting around.

Inside, the equipment appeared legitimate at first glance. There were fermentation tanks and controllers connected by snaking pipes. But a closer look revealed an unusual degree of jury-rigging.

"The fermenters had been cannibalized from different plants, the piping was of different sizes, and it had all been welded together," says Mr. Tucker. "The equipment was clearly not state of the art, but it was good enough to produce anthrax and other bugs."

This was precisely the dilemma facing inspectors. While the ragtag gear could be used for legitimate purposes, these same components could also produce deadly weapons. Inspectors say that biological-weapons are among the hardest to detect because of the "dual-use" nature of the equipment.

To Richard Spertzel, head of UNSCOM's bioweapons team, the fermentation tanks suggested something sinister. They were quite small, more in line with the production of bioweapons than single-cell proteins, an additive to chicken feed.

"Single-cell protein [producers] don't mess around with a 2,000- or 5,000-liter fermenter," he says. "Most of them scoff at anything under 100,000."



2 Cat & mouse:



RIHAB TAHA,
KNOWN AS 'DR. GERM'

'It's not a lie when you're ordered to lie.'

– An Iraqi scientist to Richard Spertzel when the scientist was questioned on the truth of his testimony

AS PART OF ITS MONITORING mandate, the UN required that Iraq provide monthly records for Al Hakam, such as raw-materials orders, water-consumption data, and quality-control measures. The Al Hakam scientists obliged, but their accounting didn't add up.

"It was so embarrassing how they presented their science, because even mathematically it wasn't correct," says one UN inspector.

To try to get to the truth, inspectors conducted grueling interviews with Iraqi scientists in Baghdad hotels. Tucker says that this was an arduous process because the scientists were unable speak freely.

"Iraqi officials insisted on hav-

ing a minder sitting in on all the interviews," he says. "People knew that they could be signing their death warrant if they said too much."

Mr. Spertzel says that the minders would make eye contact, gestures, and even coughing noises to keep scientists from revealing too much. Some scientists couldn't explain the details of their supposedly legitimate jobs. Others changed their stories midstream – one, notably, after strangely ducking under the table several times. Rihab Taha, head of Iraq's biology division, smashed a chair in frustration after a tough interview.

Despite the obfuscation, UN inspectors made several unsettling

discoveries. For example, much of the equipment used at Al Hakam had been transferred from Salman Pak, a known bioweapons facility that was destroyed during the Gulf War. Inspectors also discovered that the entire biotech team at Salman Pak was now working together at Al Hakam.



UNSCOM INSPECTORS AT AL HAKAM

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– UNSCOM inspector Jonathan Tucker

3 Dissension in the ranks:

BY THE TIME TUCKER'S MULTINATIONAL TEAM visited Al Hakam in February 1995, the evidence was mounting. But there was still disagreement over what it meant.

The biggest point of contention was Al Hakam's ventilation equipment – or lack thereof. French and Russian inspectors contended that if Al Hakam was a biological-weapons facility, it would need a sophisticated ventilation and containment system. Without one, Iraqi scientists would be endangered.

This, says Tucker, was exactly what the Americans and British thought Iraq wanted inspectors to conclude. "I believe that the Iraqi government made a deliberate decision to put their workforce at risk by not installing an effective containment system, so as to avoid creating obvious signatures of illicit activity," says Tucker, a se-

nior fellow at the US Institute of Peace in Washington. Another inspection team that looked at the biopesticide production line found two anomalies.

First, when a sample of bacterial pesticide (BT) was examined under an electron microscope, it was observed that the bacteria lacked the toxin crystals needed to kill insects. Second, the BT particles were too small. Normally, BT particles are large enough to fall rapidly out of the air to avoid drifting onto adjacent fields. Not these.

"The particles were so small and light that they would tend to float a long distance downwind," Tucker says. "That is not desirable in a biological pesticide, but it is something you would want in a biological-warfare agent." Inspectors concluded that the BT line was being used to develop techniques that could transform anthrax into a more effective bioweapon.

5 The confirmation:

DESPITE THE ADMISSION that it had produced biological toxins, Iraq continued to maintain that it had not filled any warheads.

A month later, the story changed.

Hussein Kamel, one of Iraqi President Saddam Hussein's sons-in-law and head of Iraq's weapons program, defected in August. Though he didn't provide inspectors with any additional information on Al Hakam, he confirmed all the evidence. More important, he revealed additional information on Iraq's chemical, nuclear, and missile programs, much of

which UNSCOM had considered destroyed.

Following Mr. Kamel's defection, Iraq admitted to having an offensive biological weapons program. But, Iraqi officials contended, they had destroyed these weapons themselves in 1991.

Inspectors weren't buying it. "They kept growth media, they kept the scientists in place at Al Hakam. So what obliteration of the BW [biological weapons] program is

4 Cracking the cover:

IRAQ HAD TO RELY on imported equipment and materials to build its biowarfare program, and ultimately that practice gave it away.

UNSCOM chairman Rolf Ekeus requested that all UN member states provide export records for any dual-use equipment purchased by Iraq. From these records, inspectors learned that Iraq had ordered a high-power ventilator – the type the French and Russians said was necessary for Al Hakam to be a bioweapons facility. Through a series of interviews, UNSCOM followed threads between various project code names and determined that the ventilator was, indeed, intended for Al Hakam – but had not been installed.

Records also revealed that Iraq purchased a huge amount of growth media, or food for microorganisms. Growth media is typically used in hospitals to make diagnoses or to test for bacteria in water. But it can also be used to make anthrax, botulinum toxin, and gas gangrene.

Inspectors scoured Iraq, including Al Hakam, for growth media, but could account for only 22 of the 42 tons purchased. Iraq said the other 20 tons had been used in diagnostic tests.

"You could never in your lifetime use 20 tons in any hospital, in any diagnostic institute anywhere in the world," says one former inspector.

The missing media provided enough ammunition for UNSCOM to find Iraq in breach of its requirement to disclose fully its weapons programs. Desperate to get sanctions lifted, in July, Iraq admitted to producing 2,200 gallons of anthrax and 500 gallons of botulinum toxin with the missing material, enough to fill 75 missiles or 115 bombs.

However, when inspectors analyzed Iraq's new data with a formula known as a mass balance calculation, the numbers still did not add up. UNSCOM reckons that Iraq could have produced several times more toxin than it declared.



HUSSEIN KAMEL

that?" says one UN inspector. Kamel's information led inspectors to ramp up their search for bioweapons, as well as act on the new information about Iraq's other programs for weapons of mass destruction.

Victor Mizin, an UNSCOM inspector in 1994 and 1995 and currently a diplomat in residence with the Center for Nonproliferation Studies, says that Russia felt betrayed after Iraq's admission.

"They made Russians to look quite stupid, because Russia was ... supporting them vigorously, saying to everyone, 'Well, there's no biological weapons in Iraq,' " he says. "Suddenly when it was revealed, they let us down a little bit."

6 Destruction & exit:

FOR SIX WEEKS IN 1996, under a hot summer sun, the UN oversaw the destruction of Al Hakam. Structural engineers set explosives to fell the site's buildings. Biologists neutralized toxin cultures. Oxyacetylene torches were used to cut through double-jacketed steel fermenters. Some equipment was spared and tagged for monitoring purposes.

Part of the inspectors' job was to confirm that Iraq hadn't removed anything for illicit future use. "The year before, photographs had been taken of equipment on that site, so when we went a year later, we had these pictures to help assess whether items had been moved," says Olivia Bosch, a UN inspector in Iraq in 1996 and currently at the International Institute for Strategic Studies in London.

Though UNSCOM was successful in uncovering Al Hakam, Tucker says that ferreting out bioweapons will still pose a big problem for future inspectors. "Bio facilities can be considerably smaller than chemical facilities, because a militarily significant quantity of chemical weapons is on the order of several tons, whereas with a biological agent, it's in the range of kilograms," he says.

Tucker says that good intelligence is crucial, but that countries such as the US often fail to provide it for fear of compromising sensitive sources and collection methods. "If we want the inspections to work, [the US] will have to be willing to put some intelligence-collection assets at risk by sharing timely information with the UN," he says.

Future inspectors won't be able to rely heavily on export documents, because Iraq can now make crit-



AL HAKAM IS DESTROYED, SUMMER 1996

ical equipment and growth media, say inspectors. And while there are some new technologies to test for anthrax, there is no scientific silver bullet for the next generation of inspectors, says Spertzel. Ultimately, they will need to work through similar puzzles with the same mix of white-coat and trench-coat savvy. But, says Spertzel, "A good scientist has a good analytical mind."

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– Russian inspector Victor Mizin on Iraq's admission that it was producing biological weapons

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