Yale-UN Oral History
Rolf Ekéus
Jean Krasno, Interviewer
February 27, 1998
Washington, D.C.
Session 2

Jean Krasno: Last time in our interview we discussed many of the political relationships that UNSCOM had with different entities, and so today I wanted to really discuss more with you the functions of UNSCOM itself and more the technical aspects of it. You were mandated to investigate nuclear capacities, chemical weapons, biological weapons, and the missile delivery systems, which required a very broad scope of expertise – I was wondering if you could explain how you selected your team, and whether you did so solely on expertise or whether there was a balanced nationality?

Rolf Ekéus: Yes – this was perceived, as we talked last time, as first of all a technical job. We expected Iraq to cooperate and it was more a matter of verifying Iraq's declarations. From the outset, therefore, it was to focus on expertise, weapons expertise. We needed to have people who could assist, who had experience in such esoteric things as biological weapons, a very rare commodity as most countries had long since given up such programs or never had started such programs. In the chemical weapons area, there were more experts than in the biological, because the chemical weapons threat has been a more present threat, so many countries, not necessarily had chemical weapons, but many, say, the Scandinavian countries, had defense knowledge, how to defend one's self, you know, the character of gas masks, and all sorts of things. So, there was a passive knowledge about chemical weapons. In both these areas, I recruited personnel whom I

had been familiar with from my old job, as I had served so many years as the chairman of the international negotiations on creating a convention on the ban of chemical weapons, the one which was ratified last year, which I am extremely happy about, the one great success for the international community. So, during this chairmanship I got to know not only the negotiating diplomats but also their support staffs, which were frequently people coming from laboratories, chemical weapons laboratories, involved in trying to protect their national systems from chemical weapons. And even if this was a relatively world-wide concern, most West European states had some expertise, Australia, New Zealand, North Americans and so on. The chemical weapons experts constitute a small club, so I know practically every existing weapons expert in this sense. And I know their personal characteristics.

For me, I recruited chemical weapons experts based on the skills and proven capability to work, which I knew about because I had worked with them as experts for many years. So, that was a relatively easy task. But of course, I tried to widen the geographical distribution to get as many nationalities as possible.

Biological was more difficult. There you had only a few countries with expertise. In these countries, including my own country, Sweden, there are a small number of biological weapons experts, specialized in the protection against biological weapons, but it is a thin layer. You can use one expert a couple of times, but they can't go on forever and when they leave it is difficult to replace them. So, that narrowed the geographic to some of the major countries – so, we had Americans, Germans, Brits, French, and some Scandinavians, Australians, and so on, but six or seven countries provided almost all of them. In some cases, countries may even had had biological programs they kept secret

and therefore they didn't want to show that they had experts, and they were not prepared to lend their expertise to us.

In the nuclear field, it was even more esoteric, of course, since nuclear weapons are fundamentally only known in the five nuclear weapons states. Access to weapons experts even more limited in the nuclear field. We did know – you and I knew – that other states have these same sorts of weapons, and I would, jokingly, tongue in cheek, approach these states and asked them to provide us with experts, but they of course were nonplussed and they answered, "We don't have any nuclear weapons experts."

JK: So, it would be politically impossible for them.

RE: It was impossible to have a geographical spread beyond the five. Of course, when the concern was the fissionable material, then it was a little broader; you can use experts from the IAEA safeguards regime. But in the hard-core weapons analysis, we were stuck with the five. The Chinese had one as a commissioner, but fundamentally we were limited to the four nuclear weapons states. In the missile area, it was even more exclusive because it was about long-range missiles. Therefore, there we had only some major powers, I would say, 'the' major powers, again, the US, the UK, France, Russia, and Germany. Germany because of its historic geographical role, and Germany also because the former East German army had access to SCUDs, SCUD missiles, which were the backbone of the Iraqi program. The Germans were the ones with the detailed knowledge of that type of missiles. But there, you were limited again geographically; you couldn't get any experts, not even in such an advanced country, say, like Italy or Sweden, you couldn't get the missile experts from any of these countries.

JK: Yes – and China?

RE: No, we asked China, but they didn't want to assist, because again they had to protect their programs. What happens is, when you invited the experts, it creates a fraternity, I mean, women and men working together on a daily basis. They may keep their national secrets for a month or two, but then they start to talk to each other, saying "At home, we did it like that," and they compare notes, and they create sort of their own exchange. I think I understand these countries that had some expertise but didn't want to have their experts involved because sooner or later it would spill out. That was the way we did that. Expertise was the absolute priority, geographical distribution only a secondary concern.

JK: How did the team actually function? You spoke about using some of these experts a few times – was there a core group that was consistent?

RE: Yes. If you take, now, first of all, Iraq's prohibited capabilities. UNSCOM started with Iraq's declarations and tried to verify them. As we talked about last time, very soon we detected that the declarations were all false. We established in our headquarters in New York a small core group in each one of the weapons areas. Concerning nuclear weapons especially, we had a smaller specialized group as the bulk of the work was carried out by the action team on nuclear weapons in Vienna, inside the IAEA. But we had close contact. Ours was more of a support than a specialized team. Otherwise, we created small groups of specialized people to work with the declarations;

analyze how much Iraq had achieved; search for information on foreign suppliers for the prohibited programs, a very difficult task; and finally, try, through me as chairman, to get in touch with governments to obtain as much intelligence information as possible on Iraq's weapons programs. At the same time, the experts identified each task that had to be investigated, on the basis of the documentation that they had assembled.

They started planning inspections in Iraq. These early inspections were of an *ad hoc* nature, which meant that each inspection team was composed with a specific task in mind. We had identified three, four, five, six, locations in Iraq that we wanted to inspect. The planning was focused on verifying Iraq's declarations, which meant checking on the data given to us (which was usually incorrect), using photography, very similar to high-aerial reconnaissance, which provided pictures and helped to give an understanding of the different facilities in Iraq and their locations.

[interrupted]

Then we recruited the experts. I was heavily involved in picking our own core groups. I knew most of the members of the core groups through my earlier work. Together we had a broad knowledge of what's out there. So, we recruited a team, normally led by one of the members of the core group, but not always, or of personalities in the weapons specialties. We designated the leader of the team early in the planning process. The leader was going to be working with the core group in New York, and also with the new data system. We created a data-handling system, thus assembling a body of information to serve the three core groups. They identified the problems and went to the chairman with proposals for inspections or other actions. Together we discussed and analyzed the merit of the proposal, and afterwards we put the team together. The

inspection team was put together on the basis of relevant skills. In the beginning, say, we wanted the chemical team to go to the notoriously well-known, well-bombed Muthanna, the big chemical weapons facility in Iraq. There you needed to have such things as chemical laboratory specialists who knew how to take samples and handle samples; you needed the weapons specialists who knew how to recognize a warhead or a bomb; you needed specialists on protection against gas; you needed a medical support team; and you needed an explosive ordnance specialist, I mean an ordnance specialist both for the bombs from the war campaign which were still unexploded and very dangerous *and* for the Iraqi munitions which were also there, and dangerous. You had to put various skills together, good planning and good persons who had good social skills. You *composed* a team, based on a target.

JK: OK. So there were times when you needed a specific kind of expertise?

RE: The teams were tailor-made for every mission, I would say. We contacted governments and asked them to provide us with experts, and we created a team of experts. In Bahrain, in the Gulf, we established a regional headquarters. We assembled the teams there, instead of taking them to New York, to do the planning. The team leader, after having been briefed, prepared and instructed in New York, went to Bahrain and assembled, briefed and trained the inspection team there. There were other experts also, like photographers, computer specialists who could penetrate computers. There were many professions and specialties represented in these teams, highly qualified. There, they organized their work, trained for certain activities, prepared themselves, tested the material which was given to us by governments, I mean the detection

equipment, all sorts of sensors for moving in dangerous areas, gas masks, protection suits, and so on. And then they were flown in to Baghdad. We had our own transport airplanes in Bahrain, two big planes which were ours, a C160 and later a C130. Bahrain was an area where we had the procurement for the operations inside in Iraq – you couldn't buy much in Iraq, so you had to buy it outside. The team was flown in to Iraq and there it was met by the local team we had there. We had a senior Swedish military officer, an admiral, who was organizing our Baghdad monitoring center which we built up gradually in Iraq.

JK: Who was the Swedish commander?

RE: It was Admiral Goran Wallen, who was my senior military advisor when I was leader of the Swedish delegation on the European Security Talks – there again I took someone whom I worked with and trusted – and he was the one who was in charge of local support. We had strong local support. First of all, helicopters, we had a number of helicopters, five helicopters in the end from Chile. In the beginning, there were three big German Sikorskis, CH-53s. These were later exchanged for five smaller helicopters. We had a helicopter crew of some 50 persons who were permanently based in Baghdad with the task of helping to transport the inspectors to the field, to make surprise or quick moves in support of inspection, and to be a platform for close-range photography. We had the U-2, high-range photographs and if we saw something odd on the U-2, we could send out a helicopter and take close-range photography. If it was still even more suspect, then the ground team could take care of it.

The helicopters also gave operational support to the inspections. They were used to survey large locations and in cases in which UNSCOM suspected that Iraq might try to withdraw important equipment out of the back door. We would put a helicopter in there to cover the area, and we were able to keep track of movements both inside and outside the area. UNSCOM's helicopter force was also used for other purposes, but these are the more typical examples.

In the center, we also built various laboratories, big chemical laboratories.

JK: In Baghdad?

RE: In Baghdad. Of course, they couldn't be super-big laboratories. When UNSCOM needed advanced laboratory work, it had to turn to larger laboratories outside of Iraq for that. There's the US, there is the UK, there is Finland, Norway, Sweden, each of them has large and effective big laboratories which helped the Commission with chemical analysis. But for early detection at the most notorious sites, we calibrated mobile laboratories that we put into the Baghdad monitoring center. We could calibrate them to identify most 'common' precursors and chemical warfare agents. In the monitoring center, we had a laboratory team assisting the inspectors so they could take chemical samples from the field during the day and go back in the afternoon and put the chemicals into the laboratory. The inspection team could thus obtain early leads. That helped it in planning for the following day. In the center we also built what we called an operations room, which was a big round room with television screens all over, and they were linked up to cameras that we put out at the different facilities we wanted to survey in a continuous and systematic fashion. Thus, in real-time we could watch locations which

we did not have time to inspect. We just checked on them so we would not need to go back visiting, which expanded the capability of the sample enormously. With U-2 oversights, with the sensors on the cameras, with chemical sensors outside suspected production facilities, our monitoring team could cover practically all of Iraq's suspect activities. Once a week the chemical filters were collected and inspected. It was possible to detect quickly if prohibited items were being produced at the location. This was an effective system.

The monitoring and verification teams in Baghdad were led by Admiral Goran Wallen. We also had medical support there; we had everything needed for a first-class operation. It was a beautiful outfit. We had physical training, and so on, for people participating in sports or which were for relaxation, recreation, and rest.

JK: Did you have security guards?

RE: We had guards. Of course, this was heavily protected.

JK: And they were armed?

RE: Yes. We had UN guards. Outside was a layer of Iraqi guards. So there were two layers. We had our guards, and they had their guards. We were also subject to intensive eavesdropping from Iraq, so therefore we built inside the building protected facilities, especially for sound. I don't want to go in depth in that, but we made it difficult for the Iraqi intelligence service to listen in. Not the whole building could be protected, but you know, we build special 'speak' rooms inside, where you could speak freely. The

telephone communications were also secure. We went to great lengths to protect ourselves against counter-intelligence. All these things were run by Admiral Wallen. He oversaw the inspection teams, but the team leader was the one in charge of the actual inspections.

The inspectors went out in the field, to investigate, look and take samples. Each team normally carried out a series of site inspections. They stayed a week, ten days, two weeks, normally in that time span. One to two weeks, maybe ten days was the norm. Then the team returned to Bahrain to write its report in a more secure location. The report's final conclusions were the responsibility of the leader of the team, but the idea was that it should be jointly produced. If the team members couldn't agree, it was still the leader who signed the report and wrote the conclusions, but those who disagreed had the right to put their disagreement in the report – not only the right, but it was an *obligation*, we tried to make an obligation for that. Then the team leader returned to New York and reported to the Chairman and the core staff in the UNSCOM headquarters. They got more information and that helped plan for the next mission. That was the rotation.

JK: Now, you brought in a lot of information, which I want to pick up at various different times, but I wanted to build on what you were saying in terms of the various countries contributing expertise, technology, and so forth. What kinds of sources of intelligence did you have, in terms of what governments provided for you, and eventually what UNSCOM was able to provide for itself?

RE: One of the first things that I did when I took the post was to write to a large number of governments selected based on the criteria of advancement in weapons area, of proximity to Iraq, or with traditional ties to Iraq, and ask them to provide us with all the information they had regarding Iraq's prohibited weapons programs. In the first round, only one country answered, and that was the United States of America. However, over time, the Commission succeeded in establishing its credibility, so we got more information. And what I mean by credibility was ability to protect information given to us, so we were not suspected of leaking information to other governments or to the media, or anything; it was important to protect the information.

Any 'mistake' there would harm us because the source would immediately dry up. So that put us into some serious confrontation, say, with the American Congress, which wanted the Commission to publish the names of the supplying governments or companies, suppliers of Iraq's prohibited programs, probably to punish them. Our practice was to share information picked up in the field about deliveries to Iraq's weapons program with the government of the country from which the delivery had taken place. We asked that government to give us access to the management of that company so we could interview them and investigate the character of their other deals. They may have delivered only one machine, but there could also have been a matter of hundreds of machines. If the government was nervous about allowing our specialists to carry out the investigation of the company—they were too good, probably – they could undertake the investigation themselves and respond to the Commission. That could be good information, but it was clear that it was frequently filtered. Our policy was to take information on suppliers, keep it for ourselves and only share it with the government

concerned. In that sense, we created a highly protected system, a very professional handling of all the data.

We also obtained other information, such as reports from defectors, photographic information, and with time, we established a good working relationship with many organizations, which could help with certain information. The long-term effect was, however, that the Commission became more knowledgeable about Iraq than any individual government or any individual intelligence agency. None of them could match our knowledge. That was because we had assembled a great deal of information in a comprehensive manner and combined it with the unique material obtained through the inspection activities.

JK: How long did it take to be able to build that, though?

RE: It took several years. We started in 1991; we received some intelligence information from governments had, after the initial dry run. But most of that information was such that it was colored by the providing government's wish to point us in a certain direction, or it was carefully packaged, not anything like raw data, but prepared data, which was often biased by a particular political agenda by the supporting government. We had to look through these things and handle the information provided it in the most responsible fashion. But with time, governments started to understand that our experts had the capability to assess the detailed information, they could put the details, the small pieces of information, into the larger context and see the whole picture – really like being given a piece of a puzzle, you can't understand what it means if you just pick it up, but if you put it into the bigger picture you suddenly see what it means.

Our people had the full puzzle to work on, so these bits and pieces had a meaning to us, even small things had a meaning to us. Say, one statement by a defector, off-hand, could be extremely important. A name about the person operating in Iraq, who said, you know 'Mohammed Adbel Sahaf' or whoever it was, had no meaning for an investigator without access to the big picture. But for the Commission it could become a very decisive piece of information, only the name, nothing else, in the broader context.

We organized the Commission in two major units, one which dealt with 'information collection and analysis,' formally called the Information and Assessment Unit (IAU), which was tasked with analyzing the huge amount of data obtained through inspections or through supporting governments. Then we had an 'operations unit' which planned and prepared the operations. The IAU had to identify missing information and helped me in tasking the operations unit to obtain that information. The beauty of it was that it was an extremely simple organization, and very effective, I mean, cost effective. We kept it to a minimum, and got maximum value.

JK: The next question I wanted to ask you is, how much was revealed through your system of investigation, and then how much was revealed through information sources, in other words, like the two sons-in-law who had defected and then provided information?

RE: Yes, and there is a third source, also. The Iraqi Ambassador to the UN often stated on TV and to the press that the Commission had not found anything on its own and everything it had obtained had been through the Iraqi government. This was not true. Well, Iraq gave us a little in the beginning: in the missile area, they declared only half of their actual holdings of SCUDs. The rest was detected by UNSCOM. Another part of

the Iraqi missile program was a secret program to produce SCUD-type missiles, which was disclosed by the UNSCOM inspectors in spite of Iraq's efforts to hide the program. In reality they declared only 25 percent of their real capability. The rest was discovered by the Commission.

JK: Yes – exactly, because then they had a whole secret program.

RE: Precisely. And they did that because it was known that Iraq had longer-range missiles, attacking Israel and Saudi Arabia, so it couldn't deny that. In the chemical field, Iraq was known as a notorious user of chemical weapons, so there Iraq declared a large amount of chemical weapons in its original declarations. They had to be changed then, of course, I would say some sixty percent of their real holdings were declared. That is quantity-wise, that was mustard gas and that was sarin, tabun, soman, nerve agents, and various sarin-mustard gases. But, they kept totally secret the VX program, this highly advanced nerve agent, which they didn't declare at all. So even there, their reports were faulty. In addition to the false declarations of chemical warfare agents, Iraq only reported a limited part of its chemical munitions, such as rockets. The missile warheads for chemical warfare were detected later.

That was the good news, so to speak. Now, we come to the bad news, which was that in biology, they denied having anything. And that was face-to-face, when they lied. Tariq Aziz, the Deputy Prime Minister at that time, flatly lied and said, "We have no biological weapons." So, that program was 100 percent secret. The Commission's expert detected and identified in 1994-95 a full-scale biological weapons program. And in 1996 the big production facilities were destroyed under the supervision of the

Commission. The same goes for the nuclear area. They said, "We have nothing, we have no nuclear weapons program, we have nothing whatsoever." And then, we cracked 100 percent, I would say, of the nuclear program, very early on, with very good support. So, that became known. The full-scale nuclear program consisted of uranium enrichment for weapons purposes. Enrichment through centrifuge was the best method, and was something they kept for the later stage. The EMIS, electromagnetic isotope separation method, was the one we detected first. Iraq used large calutrons for that. David Kay revealed this one. But they also worked on other enrichment methods, such as chemical enrichment, and they worked on, or tried at least, laser enrichment, but didn't get far with it. But still, it was an effort by them. That was gradually detected by us.

Then on the nuclear weapons warhead side, that was something we had known a little about, suspected, but that came from the breakthrough with Hussein Kamal's defection and the documents which were found. So, they tried to produce nuclear missiles, and the degree of advancement on that, and where the work had been done was disclosed in documents which were handed over to us after Kamal's defection, in August 1995.

JK: In August 1995, Kamal not only told you the information but also gave you documents?

RE: As a consequence of Hussein Kamal's defection, Iraq gave us information about the documents. They didn't give us the documents, but they led us to them. But that was a consequence. But you see, the magnitude of the defection work was done by the inspectors. Then we come to debate about what type of intelligence. We had some

defectors, who briefed the UNSCOM team in 1991, about where Iraq was hiding some important nuclear-related documentation, and it was in September or October, I think, our team went there to a very central location in Baghdad itself. Both Hans Blix and I were quite hesitant to launch that inspection because we understood it could be dangerous for our team. I made the final decision on sending the team and they found in this surprise inspection a huge amount of documents. You will recall they were locked in for several days by the Iraqi authorities who forcibly took some documents from them. In the end Iraq handed back some, but it was clear they had retained some. That was when we got what we called the 'smoking gun.' We got the drawings about the nuclear weapons design; we got the data on the efforts to enrich uranium. This was a major coup by the inspectors, but a coup based upon a tip-off. So, it's always difficult to quantify. But it was always us who took it, you know. We had to act to make anything happen. So, nothing could be done by just giving the information. We had to process the pieces, normally without the full information. We put it to our analytical team, working in labs, and then when we understood the context we tasked the operations people with the operation, and then they came back and had this great success.

To sum up, Iraq on its own declared a quarter of their missile program, 75 percent of the chemical weapons, zero in biological, zero in nuclear weapons did Iraq declare. The Iraqi government thought it could get away with all this.

JK: Now, Iraq was not building all these capabilities completely on its own, indigenously. I mean, they had help from other countries and expertise, over the years, from other countries. Some of this information is coming out in the press, little by little, that the Germans had helped, the French, the Chinese a little bit. There was some

indication that Brazil also had had some people there. How many countries were actually involved in this?

RE: A large number of countries, of course some to a very large extent. I would say governments, I mean countries, companies, specialists. Sometimes, in the beginning of the 1980s, during the Iran-Iraq war, the West was too generous by giving dangerous technology to Iraq. In that sense, there was a government responsibility. However, during the 1980s, they gradually tightened the controls, the West tightened its controls. Less came out of the Western countries.

JK: Is it possible to talk at this point to talk about what companies, or what countries were involved?

RE: No. I think it is still important that this is kept confidential because the country will otherwise not give us information. For example, if country "Y" knows that one of its biggest companies has been involved with Iraq, and if they report to us and we publish it, the US Congress may react by passing legislation against that company and the country will be 'starved,' so to say. So, the process was to trust us, that we would not spill the beans. It's like a journalist having to protect his source. If you reveal your source, you can never reuse that source, and not even just that source, but probably others will feel that they won't be protected by you. You will destroy yourself. We didn't want to self-destruct and that's why we adopted that policy which was unpopular sometimes. But our task was not to punish various people who had been involved in exports to Iraq's weapons programs. We had to find Iraq's weapons and destroy them.

JK: Yes – you needed more information. You mentioned that when you went in the beginning to do your inspections, that some capacities had actually been bombed during Desert Storm. I was wondering what had been actually destroyed during the Gulf War?

RE: Well, that was a big story by Iraq. They wanted to say that *everything* had been destroyed, so that they had nothing to declare. That was the standard answer even when we could prove that they had imported certain capabilities and asked, "Where are these? Where is this fermenter, where is this chemical reactor?" "No, no, no," they would respond. "That was destroyed in the bombings." That type of response was common. But there was one big facility known and that was the al-Muthanna chemical facility, and that was thoroughly bombed, and no doubt a number of chemical storage materials, drums filled with various chemical agents, were destroyed in the bombing. Lots of buildings, bunkers were destroyed. Most buildings that were known were destroyed. The problem was that the biological program was not known, so the whole huge biological weapons production facility was un-touched, it was not hit, not damaged from the bombing. If you go to the missile area, none of Iraq's missiles were hit, in spite of the fact that the missiles were the number one target of the bombing.

JK: How could that happen?

RE: We investigated that and in the end, it was clear that Iraq simply put the missiles on big trucks and kept them moving. In the daytime, they blended the trucks into the traffic. Even if a satellite could spot such a missile, it took time to signal and analyze the

imagery and to order an attack. By then the truck was many, many miles away. With the precision bombing, the US could not destroy huge areas, which was a blessing of course for people in the area. It was pinpoint bombing. So, therefore the US military and missile crews needed exact information. Everything mobile was missed, including huge mobile launchers with an enormous erector arm for lifting up the missile like that.

JK: But they could get it onto trucks and move it around?

RE: Well, they were on big, flat trucks, yes. So, they were highly visible, obviously, but because of the movement, they were not hit.

JK: They were never hit.

RE: No. What was hit, then, were stationary facilities, especially chemical and production facilities, which were known.

JK: Now, you mentioned that they denied that they had any nuclear facilities.

RE: Any nuclear weapons *program*.

JK: Nuclear weapons program, right, right.

RE: They had the nuclear facility at al-Tuwaitha for civilian research, but not for nuclear weapons.

JK: Right. Were any of the nuclear weapons research facilities hit in the bombing?

RE: Yes, the al-Tuwaitha site, which is huge, like Muthannna, and notorious. It was what Israel attacked in 1982. Israel hit one of Iraq's reactors. We now have detected that this reactor indeed had served for weapons purposes, so now in hindsight we must, I guess, thank the Israelis; if you remember the large outcry, at the time. But that attack meant an important setback for the Iraqi weapons program.

[end of side 1]

[side 2]

RE: . . . this is one that we called the 'twin buildings.' Our photo-analyst would look at the outline of a location where we knew that nuclear enrichment had taken place and where the inspectors had been. If he saw a similar configuration at some other place in the country, we would send our teams there, and in at least some cases, it was indeed a twin facility. Iraq sometimes built two facilities of the same type. They had, from one country, for instance Yugoslavia—Yugoslavian construction workers built facilities, not for the weapons program but for enrichment use, or for electrical supplements, and then they said, "bye-bye" to the Yugoslavian workers. Iraq then constructed a similar building, they copied it, and there you got the twin facility unknown to the outside world. We had a number of such successes. However, the Iraqis learned after a while to camouflage the facilities and this made it more difficult for the inspectors.

So, that was only a partial success – more important was again the analytical work. You had to figure out where people had been working before. If Salman Pak were a suspected weapons laboratory, for instance, personnel having worked there were of interest to our analysts.

JK: OK – there were records of their employment?

RE: Yes. The Commission set up certain criteria defining what Iraq had to declare for us. We would ask, for example, "Do you have any places where you have inhalation chambers, or animal cages?" Iraq would declare, "We have this place, Al-Hakam." And so we went there, and we found various pieces of suspicious equipment and indeed animal cages. So, we asked them, "What were you doing?" And the answer: "Well, we are producing chicken feed."

JK: Chicken feed?

RE: Chicken feed, yes. And it was clear that they had done that. But it was a suspect place, and it was especially suspect because it was so remote, I mean, you put dangerous production in remote places from population areas. And it was double fenced. We were always interested in double-fenced locations. If it had a double fence and was protected by watchtowers and guards, there would be reason for suspicion.

JK: So, the U-2 photographs would pick that up?

RE: Yes. So, our analysts, whenever they saw a double-fence, immediately they would circle that location and then we would start to do inspections. We often began by sending a helicopter, and on occasion the aerial inspector would say, "Well, this is a normal military barrack." But it could also be something else. I mean, a chicken feed plant, highly protected by towers, double-fence, distant from everything? You know, if you produce chicken feed, you have to transport it to reach the farmers who would use it, and so on. A remote location was suspect, but we could do nothing about that until our analysts started to get proof of their production. Then, we came back, looked again, and then we could see that the animal cages were big, probably for monkeys, and you don't use such cages if you produce a little feed, I mean, it was for testing larger animals; they must have been testing weapons on them.

JK: Were the animals in the cages?

RE: There were some cages where there were animals left, but fundamentally the size and the structure of the cages were interesting. Then, we found – I was myself involved – when we asked for the drawings of the building, the Iraqis gave us drawings of the walls and the ceiling and the floor, but the middle under the ceiling was missing and they said, "We have lost that part; it has disappeared." What is telling in a biological facility is the ventilation system, which has to be highly specialized, a very advanced system which could trap practically every bacteria and every sort of virus from spilling out into the airways. Because if you brew micro-organisms, you must ventilate. You need oxygen in the room, but you also need to release it – you can't just take in air, you must release it – and without ventilation you release highly toxic material. You must have advanced

filters, and that means an advanced ventilation system. So what was missing from the drawings was that part of the building which contained the ventilation system. I told myself that this must be a biological weapons facility, because it couldn't be a coincidence that all of the parts of the building were represented with the exception of the ventilation system.

We detected separately that Iraq had imported advanced filters for ventilation, HEPA-filters. I led the investigation at that time. So I said, "Very costly, these filters." The Iraqis said, "Well, we have rules that all our farmers should have these filters because of the smell from the cows." The filters were so expensive, however, that the standard farmer couldn't afford to have one filter. So, all the lies – the Iraqis were snaring themselves with lies, beginning with the stories of chicken feed. They even showed us chickens at Al-Hakam, which were just brought there, I guess. They took journalists out there, media people (always very impressed with these things), CNN and others, to look at the chickens. The media then reported that the Commission was ridiculous. It was just a chicken farm and the inspectors were accusing these poor innocent Iraqis for weapons production. However, we would with time prove that Al-Hakam was the world's largest biological weapons production facility, containing inhalation chambers, and the particulars for testing, i.e., cages for animals and other things, and the equipment for biological weapons, fermenters and so on.

We gained a great deal of information from defectors. But many of them were notoriously weak in reading maps. There were sometimes extreme difficulties getting an exact location from a defector. He would say, "We traveled by road, and then we turned left and then we went there. "How long did you travel?" "Well, two hundred meters, maybe a thousand meters." It was often very difficult

JK: Did paperwork help you? Was there a paper trail?

RE: Paperwork was decisive. Very, very important. As I said, in the nuclear field, of course, papers are the practice, in the chemical also. For instance, the VX, we were cracking the program in a most interesting way. During the bombing of al-Muthanna, there was a huge bunker, you know, a concrete bunker, which did not blow up but collapsed. Iraq had tried to clean up all of the facilities after the bombing, but this bunker was too dangerous. There was unexploded ordnance there, bombs and so on. An inspection team went in there in autumn 1996, and entered this bunker. We had the construction engineers, structural engineers with us who went in at great risk because it could have collapsed further. There were broken pillars. It was already collapsed. Digging cautiously into the bombed bunker, it took days for the engineers to enter. And when they came into the inner sanctum, there was the office of the former Director of al-Muthanna. There was a safe which the team managed to drag out of the bunker, again with the help of the structural engineers – it was highly dangerous. So, the inspectors brought out the safe and broke it open. Inside they found reports about the VX production, and the purchase of materials, the precursors for the VX. Iraq by then had only admitted 25 grams of laboratory production of VX. But thanks to the new findings, we could show proof that Iraq had produced 4000 kilos of VX. They had said, "Twenty-five grams of it. We admit that." But 4000 kilos?

Then of course, we detected later on that they had imported 600,000 kilos of VX precursor. VX is the most poisonous of the nerve agents. 600,000 kilos, if you process it for weapons, it ends up as 200,000 kilos of VX warfare agents. Iraq refused to admit that

they had obtained it, or they said it had been destroyed, or bombed, or "We don't know where it is." The disappearance of the VX is still a point of contention with Iraq today.

JK: Today, still as of 1998, we have that clash.

RE: That was just one example of the importance of the paper trail, these fantastic, courageous, innovative things. The man who led that operation is a Dutch man, a Dutch colonel. Up to that point he had been working all his life in laboratories, but suddenly he has to risk his life, risk death. But he couldn't ask someone else; he had to enter the bunker himself with the structural engineer and the explosive ordnance people. These are heroes.

JK: Absolutely. You had mentioned that Iraq was moving missiles around by trucks and so forth. Did they move chemical materials for weapons around?

RE: Yes. We don't know – we haven't got absolute proof for that, but that is our operational theory, that they keep things in a mobile state.

JK: You had come to Yale on two occasions this past fall, and I was there during your presentation. I believe, if I have it correct, that you had mentioned that Iraq was moving these capabilities around, and I think you mentioned that in one case it was suspected that they had been doing it on an ice-cream truck.

RE: Well, it's serious. Not one, but many. What was the company name on the trucks? I have forgotten now. It was a special name, which was painted on the side. There were convoys of them.

JK: Convoys of them? What were they moving and how did you discover that?

RE: Well, we received information from various sources in helping us to identify that, and also the U2-photography was helpful. On the route, too, you could get U2-pictures. But you couldn't catch the trucks because they were not there by the time you arrived. I recall we managed in the end, this being 1997, to catch some of these trucks and investigate them.

JK: Were they carrying chemicals?

RE: At that time they were not, but they probably had been.

JK: You had mentioned at the time that the inspectors had discovered some important papers and then were kept from leaving the parking lot. That was covered in the media. At another time, I believe earlier in June of 1991, Iraq again tried to conceal some of its assets and resorted to intimidation, firing warning shots. Where did that take place, and what was going on?

RE: I think it was Abu-Ghurayb. That was of course David Kay's great moment.

JK: What was going on there?

RE: The inspectors came to a military installation and they were blocked at the entrance. We have some tapes about that. Two inspectors climbed the water tower at the entrance; UNSCOM now has the U-2, but this was the first of the 'over-head' inspections. They were looking down, and they saw the big clouds of sand when the convoy of big trucks were leaving the compound through the back door.

JK: So, that's what they had seen.

RE: So, they reported to the team leader David Kay and the team went around the facility. They were not allowed to enter the facility, as I said. The team went around and out on the steppe to catch up with the trucks that had carried big calutrons.

JK: Oh, and that was the calutrons?

RE: Yes, and the inspectors took good photos of them also. But then the soldiers of the Republican Guard driving the convoy jumped out of the trucks and started shooting. I followed that, from second to second. I sat on the thirtieth or thirty-first floor in UN headquarters in New York. We had a satellite dish with a tape, so David Kay could describe the events like a soccer referee, what was going on: "They are going away, we are going after them; now they are shooting," and that type of thing. Of course, I ordered our team to stop and withdraw, and reported immediately to the Security Council the same morning. This event started at two o'clock in the morning New York time, I

remember that slowly the sun was rising. It was June so it came up quite early. We could show pictures to the Security Council of the convoys and the Iraqi ambassador, al-Anbari said that the trucks were carrying agricultural equipment. Later on we caught the convoy and it carried calutrons, not agricultural equipment – but that was some three, four weeks later, when we managed to catch them. On that occasion, the Council sent me to Baghdad to warn the Iraqi government for the first time of the serious consequences because of that situation.

I met Mr. Hussein Kamal for the first time on that mission. I was leading a mission accompanied by Hans Blix who was the Director of the IAEA, and Yasushi Akashi, who was then Under-Secretary for Disarmament.

JK: Now, eventually you destroyed certain capabilities. How did you decide what to destroy, and how did you go about doing that?

RE: We prepared a program for destruction. It was no problem with weapons and munitions. You either cut it or you blow it up. It depends a little on where it is. The big problem was the artillery rockets filled with chemical agents. We found huge amounts in the south where Iraq had stored them. High-quality munitions were loaded on trucks and brought up to Muthanna, Iraq's largest chemical weapons production site. In Muthanna, we built two destruction facilities. One incinerator where we burnt mustard agent, at high temperatures. It sounds simple but it is a complicated job. If you do it wrong, it produces emissions, which are very dangerous. The incineration has to be totally controlled and it was a gigantic factory. Another way to destroy chemical warfare agents was through chemical manipulation, that method was for the nerve agents. We took

Iraq's production facility and turned it into a destruction facility, which was an elegant solution. We brought the weapons to Muthanna, emptied them, took care of the poison gas, and then destroyed them. So, it depends on what you are dealing with. With chemical weapons it was a great success.

You will recall that the Russians and the Americans now have great difficulties in implementing the chemical weapons convention. Iraq did not have as large quantities as these two powers, maybe a tenth or a twentieth of the Russian stocks. In Russia, they still have not managed to accomplish much destruction of chemical weapons. By comparison, we were able to destroy a considerable quantity of chemical weapons in just three years. So it was not bad.

Chemical reactors were destroyed by cutting. Particularly if the reactors were the glass-lined type, it was possible to cut them so that they could not be repaired because the pressure and demands are such. Buildings we blew up, using high explosives. The same goes for the fermenters, or you crush them. A lot of weapons, you just line them up on the ground, assure yourself that there are no explosives in them, and you run over the weapons with a heavy Caterpillar or something like that. You can't take destroy munitions individually; it takes too long a time. It is an enormous amount of effort.

JK: What about the nuclear weapons?

RE: Iraq had retained highly enriched uranium, corresponding to one nuclear device of say thirty or forty kilos. We removed the uranium from the country. It was a major operation.

JK: Oh, you took it out?

RE: Yes, we had to have an American contractor pack it and then we did something historical, we flew it out. Normally you don't transport highly dangerous nuclear material in that way. We didn't ask anyone for permission. We told ourselves, "This isn't proscribed, so, I hope, we won't be sued." We had to contract someone who would dare to fly that stuff. So, we contracted someone who desperately needed the money, and that was the Ukraine. The company, which was specialized in heavy air transport, was called 'Touch and Go.'

JK: That was the real name?

RE: Yes – 'Touch and Go.' They had rented or leased a big Russian transport plane – gigantic. It was a big Antonov, an enormous plane. So, they flew in. I was there at the Habaniah airbase when the plane landed. I oversaw the loading of the nuclear material, very well-pack stuff, and then they flew it to Russia. The Russians took care of the material, under IAEA authority. Other quantities of low-grade uranium were taken care of locally.

JK: It wasn't highly enriched.

RE: They had a big production facility which was also destroyed and blown up.

JK: That was blown up. And the calutrons, what happened to those?

RE: They were cut. I think we cut them. They were so heavy, they were big, heavy.

JK: And centrifuges?

RE: Centrifuges were found in bits and pieces, and we tried to destroy them, yes. Iraq tried to hide a lot, or manipulate the amount. That was the difficult part, to count the number of items in the nuclear area, because Iraq had melted so many things. Iraq destroyed many missiles secretly. The missiles were often exploded and put in the scrap-yard, so we could count the remnants of engines. In the nuclear field, Iraq had melted weapons components, at least so they say. Melted metal is difficult to identify. That is why melting makes verification much more difficult.

JK: What I wanted to clarify in what you're getting in to now, is that you, or UNSCOM, destroyed some things yourselves, and you were directly involved in it, but then Iraq destroyed some other things.

RE: The practical implementation was that Iraq normally carried out the actual destruction so UNSCOM didn't need to bring in heavy equipment such as Caterpillars to crush the munitions. Even the super-gun had to be cut.

JK: So, they did the work and you sort of supervised.

RE: Yes, in running the big destruction facilities, the management was ours, but the workers were Iraqis.

JK: And in the case of the melting?

RE: No, that was the secret destruction that Iraq did. The secrecy was our problem. In the end, we managed to find out almost everything Iraq had been buying. Also most of what they had produced was quantified. But the problem is to account for where these items are now. Most of the prohibited items we destroyed ourselves or Iraqi personnel under our supervision destroyed them. But then, this large chunk of imported items remains, and Iraq says, "They don't exist, we destroyed them secretly, in 1991 or 1992." Say, the missiles they concealed, they destroyed some of them secretly instead of giving them to us. They kept them and then when they were on the verge of being detected, they destroyed them. And then later on they told us, "Well, all of the non-declared missiles are in the scrap-yard." They didn't want us to go there because an investigation of how many missiles were secretly destroyed would show UNSCOM how many were concealed. It took us years to uncover it.

JK: Now, you were the Executive Chairman of UNSCOM for a number of years, and just handed over in July 1997, I believe. So, during your tenure, how satisfied were you, you were beginning to talk about that, that the capacities were destroyed. Now, if I understand you correctly, you were pretty satisfied that the nuclear weapons capability was destroyed.

RE: Yes. Everything, I would say, on the enrichment side.

JK: Everything on the enrichment side.

RE: We are still concerned about the warhead side, the warhead work. Iraq had explosive devices, and they had learned the techniques of building implosion devices. I am personally nervous about the account that they have given on this. They *had* components of nuclear warheads, and you ask, "There must be remnants," physically it can't disappear. Iraq explained that they had melted the evidence and it was therefore unrecognizable, and then what can you do? Of course, you wanted to see the documents containing the instruction to destroy, and the document containing the report that it has been destroyed, which are meticulously registered by Iraq. Even when they take out a pencil from the storeroom, they have to track this in inventory. I this case, they said, "Oral instruction, no paperwork remains." It is a lie obviously. So, that means if they carried out the destruction, they can show us the records; if they haven't destroyed it, of course, they have no records. So, these are the outstanding issues with us. But anyhow, the IAEA says that as Iraq has no material, it cannot in any event make any more bombs, even if they managed to keep some of the designs.

JK: Then on the missile part, how satisfied are you that they are accounted for?

RE: I think we accounted for practically all SCUDs, and all together 819 SCUDs were reported as imported from the former Soviet Union. We subtract from that number what was used against Iran, used against Saudi Arabia and Israel and so on, and what we

destroyed, and what was secretly destroyed. Recently we finalized that analysis, with the help of laboratories, to investigate which missile engines were fully operational and which were training engines as opposed to operational engines. Practically all have been accounted for.

JK: How many do they still have?

RE: The problem is that they produced 80 engines on their own as part of a secret program. When Iraq was forced to confess this secret production, they claimed that the quality was too poor for making operational missiles. Maybe the quality was poor, but maybe it was not. Again there, there are some serious question marks. We know that some of the missiles were flight-tested successfully, so at least in two or three cases, they were definitely lying when they said that they did not produce functioning missiles.

JK: And were those ground-to-air missiles, is that what they were?

RE: No, no. Ground-to-ground.

JK: Ground-to-ground.

RE: Surface-to-surface. Oh yes, all of them, because they are prohibited. Iraq is not prohibited to have surface-to-air missiles. Iraq had a number of SAM surface-to-air rockets. It is a classified number. What we did, suddenly our experts detected—our German expert—detected that Iraq was manipulating its surface-to-air defense missiles,

surface-to-air missiles, in order to make them surface-to-surface. I don't think you can take surface-to-air missiles of the type they had, they are too weak, to make them into real big missiles, but you can take components, and so to say, cannibalize. At that stage, we ordered Iraq to give us access to all their SAMs. So we now know exactly how many SAMs they have. Iraq had to present SAMs to us. We would tag each one of the SAMs, thus we have tagged every air defense missile in Iraq, which they are allowed to have. And then we regularly call up the numbers; we can say, "Let us see them." I don't want to give you any of the numbers, but you see – for example, we would ask to see 20 SAMs or 50, defined by the serial numbers on the tags.

Next month we are there, and at a given date and a given place, these 50 missiles should appear. UNSCOM missile experts would check them and make sure that they had not been taken out of the system. If Iraq is testing any of these, it has to notify UNSCOM. If they operate one of these, they also have to notify us. No testing is allowed to take place without our prior notification, so our experts who are now permanently based in Baghdad, can be present at the testing. In that sense, we have a complete control of their missile capacity. I, myself, devised the system of counting the SAMs.

However, Iraq has a legitimate right to defend itself. It should be enough that Iraq is able to defend its territory. So, they have the right to have SAMs and therefore we don't bother to know where they deploy the missiles. But UNSCOM reserves the right to count and verify that none of them has been taken out without our notification.

JK: Talking about the fact that it was never your mandate to completely eliminate Iraq's ability to defend itself, its territory. It has been argued that because there are other

countries in the region that either have nuclear or chemical weapons, or are developing them, that Iraq ought to be able to have those as well in its defense. Do you think that is an accurate argument?

RE: It is absolutely wrong. Iraq is special; it has used chemical weapons. No one else has, as far as I know, maybe some Iranians used them but it is unproven. Iraqi use has been proven in all the inspections, UN inspections, which took place during the Iran-Iraq War. No nation should retain these weapons, first of all. Biological weapons, chemical weapons, should be outlawed. No one should have them. Why should Iraq have them? And the same goes for nuclear weapons. Iraq signed the NPT anyhow, undertaking not to acquire the weapons. So, they have no legitimate right at all to nuclear weapons. Nor has Sweden, Germany, and the other non-nuclear weapons states which have signed the NPT.

So, of course these weapons should be destroyed and not be there. Iraq is strong enough to defend itself with conventional weapons. It may be that they had difficulty defeating the Iranians, because there are three times more Iranians, sixty million plus versus Iraq's twenty million plus. But still. That's Iraq's argument against us, that we took away the capability to balance Iran and thereby diminished Iraq's chance to defend itself. But it is obvious that Iraq was the aggressor, used chemical weapons against its own people, against its neighbors, it has attacked Kuwait This is a very small price for an aggressor, a defeated aggressor. What happened with Japan after World War II? Many leaders were executed, the country was forced to adopt a totally new constitution; it was occupied and it had to change its life; and *forever* it was not allowed to have its own military. There you talk of serious steps. Or Germany after the war, cut into pieces, in

the beginning in four cakes but then in two, divided, all the leaders there prosecuted and hanged, and a totally new regime. Everyone involved in the old regime blackballed. There you talk about defeat.

Here we asked Iraq just to give up weapons that no serious country should have. Take Germany: it doesn't have chemical weapons, biological weapons, nuclear weapons, or long-range missile. It is one of the most powerful countries in the world. Japan the same. Why should Iraq have weapons of mass destruction? And they were the aggressors. So I think it is one of the milder responses to an aggressor, it's really nothing, "Just please don't do anything stupid, but just be like any other country." That is our only modest requirement.

JK: Saddam Hussein has continually accused UNSCOM of spying, and to what degree did you and UNSCOM have control over who was selected for the team, or any control over where that information went?

RE: In the beginning we had almost total control. Either I selected a person I knew and had worked with before or this person knew some other reliable individuals who could be recruited. But since then we have carried out more then 220 major inspections and almost 100 more special inspection, and, in addition, thousands of monitoring inspections. Of course, with time you lose this personal handle on it because of the size of the operation, and new people are picked. But the recruitment was still based upon the internal knowledge. We expand, we will take some inexperienced person, he works with you, he gains experience, he proposes a new team member, he is well-behaved, he is interested, he is constructive, he is helpful, he is promoted, and becomes more and more

trusted after a while. If you are unhappy, you talk to the person and don't ask him to come back. You build all the time, it is organic almost. Of course, there can always in that process, creep in a person who is spying on UNSCOM and leaking to Iraq. I don't know if it happens, but that is possible. To prevent that, we have developed operational procedures, and very carefully done, which makes it practically impossible for anyone to successfully spy on our work. The procedure is that you just don't reveal the inspection target. The big secret before an inspection is carried out is the target. So what you do is you don't inform the inspection team about the target. Only the chairman and the mission planner together with the team leader are fully in the picture. Also, the analysts who make the recommendation would have an idea of the target. The chairman makes the final decision, "these places should be inspected." The international team is assembled in Bahrain. The training starts and the team members are not informed where they are to go; they are kept in the dark. When arrive in Baghdad, they still don't know the exact inspection target. They stay in the hotel, they do some preparation; the team assembles at 7:00 in the morning to go out in the field, members still don't know where they should go. Only the chief inspector and his chief of staff know. The Iraqi minders are swarming around them, waiting, and as soon as the team starts going, say, south, they can de-alert east, west, and north of Baghdad. The team comes to a fork in the road and it takes the left, Iraq can de-alert everything down the other branch, on the right. And then the Iraqis work their own computers to calculate, "Which are the facilities ahead? It looks like there are chemists on board, the chief inspector is a known chemical specialist." So, all chemical facilities down the road are alerted: "Hide everything. Do what you can – in a few minutes you will have these inspectors all over." That's how it works, but the team members still do not know. They know when they come up to the door. Then the chief

inspector says we are here, he gives directions to the team, shows them the pictures taken in advance, line drawings, etc. The surprise is important. It influences the choice of platform for overhead photography—U2 or helicopters.

JK: That is very interesting information. What I was asking was really the reverse, is that how were you sure that you were keeping the information that was gathered confidential?

RE: That was, as I say, very important for our credibility to get people to help us. If they leak from us, that would harm the work of the Commission, because governments would be nervous to deal with us, if say, some of those Russian or American – I don't say they are them, but I mean, those are two big countries – would try to obtain information from the Commission. Every inspector signs an undertaking, binding, when he gets his contract, that he is to report *only* to the chairman, and he has no right to inform his own government. He promises to take instructions only from UNSCOM, *not* from any government. If he wants to give data to his national authorities, it has to be with the approval of the chairman. The inspector may ask for permission, and then the chairman decides if he should do it. They can tell some 'war-stories,' as we used to say. "I did that, I did that," you know, how the team operated.

But if he is giving away, for example, the name or number of companies they found on prohibited machines, this is breaking the rules. The government concerned can, however, approach us, and ask for permission. We give out data to those governments that have, I would say, bona fide interests, for instance, to find ways to help us. Or a government that just wants to know whether one of their companies has been involved in

illegal activities, you answer negatively, "No, none of your companies were involved." So that is also the track of information. But that is not spying. It is legitimate.

Principally, the Commission considers that data on Iraq's weapons is not public, more than what should be given to the Security Council in accordance with the resolutions. Thus the prohibited items are reported about, but not normally the foreign supplier. This practice is necessary to protect our access. Of course, there can be someone who sends us someone from a spy agency as an inspector. Frequently, however, we were able to identify the spies, they stick out, because you know, you cannot be a very, very specialized chemical expert without having worked your whole life as a scientist. Normally, you don't work in a spy agency. The agents may have had some chemical experience. Even there you know the background, and their behavior tells. Again, in the system you protect against that. That does not exclude the possibility that some planted agents could tell some stories to their bosses. But this is not, in effect, serious spying; we are very careful.

JK: Why would Saddam make those kinds of accusations?

RE: The overall policy is to undercut UNSCOM, which is the most effective body, through its work methods and the quality of its personnel. Iraq tries to politicize the question of inspections. That has been the policy for several years, to try to undercut the authority of the chairman so he is distracted. For instance, the dream is to influence the targeting of the inspections, to negotiate the selection of inspection sites in advance, which would leak and of course take away the possibility for tough inspections. It is the

hard-fought policy against UNSCOM. If you repeat and repeat, someone in the UN may say, "Oh well, there may be something in that, and this guy looks suspicious."

JK: Well, our time is up. I want to thank you so much for this interview.

RE: You are very welcome.