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INSPECTIONS ON REQUEST: COMING TO TERMS WITH THEIR SCOPE

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Coming to terms with the scope of inspection on request (challenge inspection) presents a particular difficulty in negotiating the Chemical Weapons Convention. As originally conceived, challenge inspections would have been rather dramatic measures of last resort, of high political profile; procedures whereby suspicions of one State Party about another's compliance with the Convention could be illuminated for the world's gaze. As ideas evolved on workable procedures to implement inspections of this sort, the perception of challenge inspection began to alter. Although not to be equated with routine inspections in the chemical industry, inspections on request are now portrayed as less confrontational than earlier visions of challenge.

Although this metamorphosis has softened challenge inspection to inspection on request, the scope remains very broad; the inspections could be asked for "anytime, anywhere" and could not be refused. They might be requested at a chemical plant, an ammunition depot, a nuclear missile assembly plant, a communications facility, a mobilization point, a military command complex; the list is endless and comprises any civil or military facility with its associated military, commercial and domestic sensitivities. Even though the existence of certain sites may be highly classified, if another State Party asks for an inspection at one of them, denying its existence is not a plausible option. One of the major negotiating difficulties has been to elaborate provisions and procedures for inspections on request which balance the need for them to be sufficiently rigorous to have a good chance of detecting non-compliance with the need to protect classified information unrelated to chemical weapons. A further perceived difficulty relating to the possible compromise of sensitive information concerns the one national (or perhaps more) of the requesting state who will be accorded the right to be present as an observer to witness the conduct of the inspection, although not a part of the inspection team *per se*.

How can the need for intrusiveness and the need to protect classified information be reconciled? The answer does not lie in making life as difficult as possible for the inspectors. On the contrary, a spirit of cooperation between the receiving state and the inspecting team is worth fostering from the start. Psychology, as elsewhere, plays an important role in the conduct of inspections. A sensible, practical working relationship needs to be cultivated between the chief inspector and representatives of the receiving state. But this can only develop as the inspection proceeds. Relations are likely to be at their most

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strained during and immediately after the reception and briefing. On the pragmatic principle that the less time inspectors are on-site, the less likely is information to become compromised, the receiving state will, as a working rule, want the inspection team to leave the site as soon as possible. This is most likely to be achieved if the receiving state is seen as being helpful and taking steps to assist the inspectors in their task. A willingness to demonstrate compliance by granting reasonable requests without unnecessary fuss goes a long way towards building up a store of goodwill that is in the receiving state's interests to nurture. As this builds up, and convincing and reasonable explanations are given by the receiving state to the inspectors' questions, it is likely that the inspectors will become more sensitive in handling difficult situations unrelated to CW. If a good accord has developed between the two parties, genuine attempts by the receiving state and the inspection team to find ways of resolving difficult situations are likely to succeed.

It is much easier for representatives of the receiving state to be confident about such an accord if, at each site, national representatives and local staff have worked out in advance a program for inspection and have determined the bottom lines for access at all sensitive areas. In the context of the CWC, the guiding principle for managing these inspections ought to be for the receiving state to decide in advance the irreducible minimum of, for example, a missile, an aircraft, or a room, which *for genuine security reasons* needs to be hidden and for which appropriate degrees of managed access need to be elaborated. The initial offer of access might be quite restrictive, but might well suffice. If it does not, progressively less restrictive access can be negotiated until the bottom line is reached.

The UK learned lessons about unhappy inspectors during six national practice challenge inspections (PCIs). During early PCIs, inspectors became increasingly frustrated at having to fight repeatedly for access inch by inch, particularly so if hard-won access, say to a building, revealed it to be entirely empty. This frustration usually led to renewed and heightened suspicion and to increasingly vigorous demands for greater access. To try to avoid this the procedure of Random Selective Access was conceived. Two examples may suffice to illustrate its application.

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At one site--an RAF station where nuclear weapons were stored--the receiving team decided that, rather than try to restrict access *a priori* to the minimum that could be ceded on a blow-by-blow negotiating basis, they would propose that of *X* visible storage bunkers in an obviously highly secured area, the inspection team could itself select which 20% of them it wished to enter. This approach achieved three goals:

- (i) it placed the initiative with the inspection team; it was they, not the receiving state, who made the choice of where to go;
- (ii) it prevented the inspectors from acquiring an overall picture of the capacity and contents of all the bunkers at that time; and
- (iii) it effectively illustrated to the inspection team that, as their choice could not have been predicted, none of the bunkers contained CW materiel.

In some of the bunkers chosen, nuclear weapons were indeed stored. Having made its choice, the inspection team was asked to wait while certain masking operations were undertaken in the bunkers to hide certain visually sensitive features. Representatives of the receiving state entering and leaving the bunkers were checked to ascertain that they were not removing anything. At the time the inspectors did not have the portable non-destructive interrogation apparatus subsequently available to them. Had they done so it would have been a rather simple matter to demonstrate that the weapons' payloads were not chemical.

Random Selective Access was used very effectively at another site where components for nuclear weapons are designed, developed and produced. One particular building was considered especially sensitive. The receiving team divided it into some forty zones which did not all necessarily correspond to internal building subdivisions. When the inspectors asked to enter the building they

were informed that unrestricted access would not be granted because of the nature of the activities within. But they would be allowed access to up to 20% of the zones into which it had been divided; the choice of zones would be theirs. Again, the inspection team was offered the initiative. The free choice of zones to all intents and purposes precluded the presence of CW related items in any of them. As on the earlier PCI, extensive use was made of shrouding in each of the zoned areas, and each shrouded object or area was considered too small to contain material relevant to the CWC. In some very sensitive zones further sub-zoning was used with a fresh percentage choice of sub-zones being offered to the inspection team. Limiting the number of zones available for inspection and the use of shrouding prevented the inspectors (one of whom was a nuclear scientist) from piecing together the purpose of the building or the quantities and types of materials being handled.

Random Selective Access and associated shrouding of sensitive displays and items of material and equipment are just two of several possible procedures for managing access to sensitive areas of a facility. Others include the removal of sensitive papers from office spaces and securing them in safes, logging off computer systems and turning off data-indicating devices, the use of non-destructive interrogation devices such as X-ray, ultrasonics and neutron activation analysis for determining munition payloads and, perhaps the most prosaic and therefore most easily overlooked, careful control of dialogue.

The ability to be at ease with the inspectors to the extent of being able to offer them access to chosen areas in extremely sensitive locations is only possible if the receiving state has planned adequately how it will manage inspections on request *at each facility where it considers there are areas to which it cannot give unrestricted access*. Fall-back positions and bottom lines need to be determined in advance of any inspection. These should be based on the policy of demonstrating compliance with the CWC by active cooperation using skilled and imaginative managed access, and not based upon keeping as much as possible hidden at all times, irrespective of sensitivity.

What follows is taken from the Sussex-Harvard rolling CBW chronology. The intervals covered in successive Bulletins have a one-month overlap in order to accommodate late-received information. The basic chronology, which is continuously updated, is fuller and provides complete citations of sources. For access to it, apply to Julian Perry Robinson at the Science Policy Research Unit, University of Sussex, Brighton, BN1 9RF, England.

1 August The South Pacific Forum [see 31 Jul] adopts and issues a communique addressing US chemdemil operations on Johnston Atoll: "While noting the stringent precautions being taken by the United States, the Forum remained concerned by the substantial potential risks to the environment and peoples of the Pacific of the whole operation, including in particular shipments from FRG.... This is another example of the Pacific being used by the major weapons producing states as an experimental area" {ACR no. 9-90, p. 704.E-1.9}. The communique is to be discussed over the next two days at a "post Forum dialogue meeting" with senior government observers from Britain, Canada, China, France, Japan and the United States {DTel 2 Aug}.

1 August In the GDR, the Thuringian newspaper *Tagespost* asks whether recent outbreaks of illness in three villages in the Hermsdorfer Kreuz area may not be due to a concealed CW-weapons depot [see also 7 Jul]. A senior defense-ministry official says: "the National People's Army does not have any chemical weapons there. In addition, there is no facility of the Soviet Army in this area that would be suitable as a depot for poison gas" {*Neues Deutschland* 2 Aug in FBIS-EEU 7 Aug}. NVA Chemical Services specialists subsequently take soil and water samples from the area; their preliminary findings are reported to reveal no trace of CW agents {*Berliner Zeitung* 8 Aug in FBIS-EEU 10 Aug}.

1 August In a US district court in Hawaii, an injunction against the shipment of US nerve-gas weapons from Germany [see also 15 Jul] to Johnston Atoll is sought by Greenpeace USA, the Institute for the Advancement of Hawaiian Affairs and the World Council of Indigenous Peoples. The court denies the request for a temporary restraining order, but sets a date--20 August--for a hearing on a preliminary injunction. {AFP 2 Aug in FBIS-EAS 2 Aug, UPI as in IHT 11-12 Aug}

2 August Iraq invades Kuwait.

Attributing unidentified "US intelligence sources," the *Washington Times* later reports that the invading force carried CW weapons with it, mostly in the form of artillery shells. The report continued: "Intelligence sources said US satellites photographed specially equipped Iraqi troops unloading chemical weapons from stockpiles in Iraq during the buildup of forces before the invasion. In addition to artillery shells, intelligence analysts also discerned aerial bombs believed to contain deadly chemical arms being readied for Iraq's air force" {WT 6 Aug}. Yet according to the *Washington Post*, also attributing unidentified "US intelligence sources," no CW artillery shells were moved into Kuwait, although decontamination equipment was {WP 7 Aug}.

2 August At the CD, the leader of the French delegation, Ambassador Pierre Morel, speaks of a linkage between the CWC efforts and the Vienna and START talks, such that "any delays in the chemical negotiations relative to the other two would give increased military significance to the existing stockpiles and means and could jeopardize the general movement towards disarmament which is now under way in earnest." He presents a close analysis of the current state of the CWC negotiations, concluding that "they must now be advanced, by a political decision, into their final phase, which will be next year's session." He continues:

"We therefore propose that the Conference begin its next session in January 1991 by meeting at the ministerial level to examine the status of the negotiations at that time, identify approaches needed to complete them, set a relatively short time-limit and give the corresponding instructions to delegations. The latter would then get down to work with the conclusion of a final agreement clearly in mind and would negotiate under the ministers' direct control. Then, when the time came, the Ministers would return to Geneva to settle the final text of the convention" [see also 26 Jul]. {CD/PV.570}

2 August Argentina tells the CD that a Commission for the Study of the Draft Convention on the Prohibition of Chemical Weapons has just been set up by presidential decree. Among other functions, it is to serve as a bridge towards the establishment of an Argentinian National Authority as envisaged in Article VII of the Rolling Text. {CD/PV.570}

2 August Pakistan reiterates in the CD plenum its opposition to the inclusion of "ad hoc verification" provisions within the CWC: "We believe that the [verification] procedures presently being discussed are adequate, and that there is no need for another regime which could politicize the Technical Secretariat by giving it the right to initiate disguised challenge inspections against States Parties. We hope that the proponents of this concept will accept the fact that there is, as yet, no agreement even on the need for a further detailed discussion of the concept of ad hoc verification in the Ad Hoc Committee." {CD/PV.570}

2 August In Moscow, *Pravda* publishes an interview with the chief of the USSR Defense Ministry Chemical Troops, Col-Gen Stanislav Veniaminovich Petrov, in which he urges the Supreme Soviet to speed up its consideration of the five alternative plans for the USSR chemdemil program that had been submitted in March [see 1 Apr]. His view, he says, is that "the most desirable option is to create one or two highly automated, safe and ecologically clean facilities located in parts of the country where there is a low population density." He adds: "According to preliminary estimates, about R3 billion will be needed." {*Pravda* 2 Aug in FBIS-SOV 6 Aug}

Here and in other public releases around this time both by himself and by another senior Soviet CW defense figure, new information about past Soviet CW programs is disclosed {*Izvestiya* 7 Aug in FBIS-SOV 8 Aug; *APN Military Bulletin* June-July; *Pravitelstvenny Vestnik* no. 29 as in SovN no. 6539}. A figure of 40,000 tonnes of chemical agents, rather than the "no more than 50,000 tonnes" hitherto stated, is given for the total size of the Soviet CW stockpile. Mustard and lewisite account for one quarter of the "chemical weapons stocks existing in the USSR" with "phosphor-organic agents in ammunition" constituting the other three quarters. Of the 40,000 tonnes, "10,000 tonnes are stockpiles of chemical weapons that were accumulated in the prewar years and during the war...[and now] are obsolete and outdated and are of no value as weapons in the light of current requirements." Since 1970 "some 438 tonnes of various types of chemical weapons have been destroyed." During the 1980s, three "stationary installations" were built for destroying mustard and lewisite items that "could not be stored for safety considerations, and also to try out a technology of destruction." Two of these installations "have completed their service life." The third is for extracting arsenic from lewisite, a conversion process which is also

proposed in the draft *State Program for the Destruction of Chemical Weapons in the USSR*.

2 August In Washington US District Court, the American Legion and others bring a joint action against the US Government seeking to compel completion of the federal study, cancelled in 1987, on the health effects of Agent Orange on Vietnam-War veterans and their children. {AP as in *Sacramento Bee* 3 Aug, NYT 22 Aug}

2 August The US General Accounting Office issues an assessment of the Defense Department's reporting to Congress of its CW and biological defense research programs. The assessment considers the annual report on CBW program obligations, the descriptive summaries to justify budget submissions, and the BWC confidence-building data submissions to the UN. {GAO/NSIAD-90-102}

3 August The US Senate is told by Senator Inouye (Hawaii) that neither Soviet chemical weapons nor those of any other foreign nation [see 31 Jul] will be destroyed in the Johnston Atoll chemdemil facility. {CR 3 Aug, pp. S12129-30}

3 August In Kosovo province, Yugoslavia, the Albanian-language newspaper *Rilindja* publishes testimony by Dr Bernard Benedetti, a doctor for *Médecins du Monde* who had been in the province during the height of the troubles earlier in the year [see 20-22 Mar]. "I assert that more than 3000 young people and minors were poisoned in the January to May period"; and he said that the samples he had taken and had had analyzed by two laboratories in France suggested the involvement of a poison similar to the pesticide lindane. {*Rilindja* (Pristina) 3 Aug in FBIS-EEU 10 Aug}

4-9 August In Geneva, representatives of the US Congress and the USSR Supreme Soviet hold a conference on the prohibition of CW weapons [see 13 Mar], during which particular attention is given to the coming ratification by the two parliaments of the bilateral destruction agreement [see 1 Jun]. There is also discussion of the problem connected with, as Moscow radio puts it, "the absence to date in our country of a broad technical base for the destruction of chemical weapons" [see 2 Aug]. {*Izvestiya* 21 Jun in FBIS-SOV 25 Jun; Moscow domestic service 11 Aug in FBIS-SOV 13 Aug; CSM 12 Sep}

6 August At the CD the Chairman of the CW Ad Hoc Committee, Ambassador Hyltenius of Sweden, issues a document summarizing the still-inconclusive consultations he had been conducting on the vexed issue of challenge inspection. The document records proposals for revisions to the Article IX treaty language he had proposed earlier in the session [see 17 Apr]. It also records agreement

to use the term "inspection on request" rather than "challenge inspection" [see 12 Jul], and to deal with investigations of alleged use under Article IX. {CD/CW/WP.316}

7 August In the USSR, the political committee of the Constitutional Democrats party adopts a statement asserting the citizen's right to carry weapons of self-defense, "including firearms and tear and nerve paralyzing agents," asserting also that such weapons should be made available by the state "at accessible prices." {Moscow world service 8 Aug in FBIS-SOV 9 Aug}

7 August Venezuela informs the CD that the regional CW seminar which it plans to organize for Latin America and the Caribbean [see 15 Mar] has been postponed until the first half of 1991. It is consulting with the UN Secretariat on its finalization. {CD/PV.571}

7-16 August In Geneva there is a new round, the 16th, of US-Soviet bilaterals on the CW weapons ban {TASS 17 Aug in FBIS-SOV 21 Aug; AN no. 2248}. A joint oral report is subsequently given to the CD. Work proceeds on the document that is to contain detailed provisions about the implementation of inspection measures within the framework of the June bilateral destruction agreement. This "inspection protocol" is due to be completed by the end of the year. Preliminary agreement is reached on the conduct of two bilateral trial challenge inspections. There are special expert consultations on US-Soviet cooperation in chemdemil technology. And there are discussions, too, on implementation of the Wyoming memorandum. The next round of bilaterals is to be held during the coming autumn {CD/PV.575}.

8 August France submits a report to the CD on its first exploratory practice challenge inspection, which had been conducted on 6-7 June at a "not particularly sensitive" army ammunition depot. A conclusion drawn in the report is the necessity of carrying out further trials. {CD/1029}

8 August Canada submits a report to the CD on its second national trial inspection. The NTI had been conducted in a multipurpose pharmaceutical site at the Merck Frosst Canada Inc facilities in Pointe Claire, Quebec. It focussed not so much on the production of a model Schedule-2 chemical as on its consumption and compounding, examining (a) the possibilities and impact on confidential business information of using an audit trail to verify compliance and (b) the use of quality-control procedures to complement audit-trail inspection. {CD/1030/Rev.1}

8 August In Saudi Arabia an enormous buildup of US and, later, other foreign forces begins following the Iraqi occupation of Kuwait

GLOSSARY OF ABBREVIATIONS FOR NEWS CHRONOLOGY

ACR	<i>Arms Control Reporter</i>	DN	<i>Defense News</i>	JDW	<i>Jane's Defence Weekly</i>
AFP	Agence France Press	DPA	Deutsche Presse Agentur	LAT	<i>Los Angeles Times</i>
AN	<i>Atlantic News</i>	DTel	<i>Daily Telegraph</i> (London)	NYT	<i>New York Times</i>
AP	Associated Press	DW	<i>Defense Week</i>	Obs	<i>Observer</i> (London)
CBW	Chemical/biological warfare	FAZ	<i>Frankfurter Allgemeine Zeitschrift</i>	PA	Press Association
CD	Conference on Disarmament			SFC	<i>San Francisco Chronicle</i>
CD/	CD document series	FBIS	Foreign Broadcast Information Service (Washington)	SovN	<i>Soviet News</i> (USSR Embassy, London)
CN	<i>Current News Early Bird</i> (US Dept. of Defense)	FR	<i>Frankfurter Rundschau</i>	ST	<i>Sunday Times</i> (London)
CR	<i>Congressional Record</i> (Daily Edition)	FT	<i>Financial Times</i> (London)	STel	<i>Sunday Telegraph</i> (London)
CSM	<i>Christian Science Monitor</i>	G	<i>Guardian</i> (London)	Tag	<i>Tageszeitung</i> (West Berlin)
CW	Chemical warfare	GAO	Government Accounting Office	TL	<i>Times</i> (London)
CWC	The projected Chemical Weapons Convention	HansC	<i>Hansard</i> (Commons)	UPI	United Press International
DerS	<i>Der Spiegel</i>	IHT	<i>International Herald Tribune</i>	WEU	Western European Union
		INA	Iraqi News Agency (Baghdad)	WP	<i>Washington Post</i>
		Ind	<i>Independent</i> (London)	WT	<i>Washington Times</i>
				WSJ	<i>Wall Street Journal</i>

[see 2 Aug]. It is later reported that the decision by the Saudi government to admit US troops was taken after US intelligence of Iraqi CW preparations had been disclosed to it {NYT 20 Oct}.

US officials reportedly tell NATO allies of intelligence suggesting that Iraq has moved CW munitions into southern Kuwait and that it has loaded chemical weapons onto aircraft {WP 8 Aug, FT 9 Aug, Reuter as in IHT 9 Aug}. But the Chairman of the US Joint Chiefs of Staff, General Colin Powell, tells a news conference that the intelligence is "somewhat ambiguous," saying also, however, that US troops had taken with them anti-CW protective clothing and medical supplies {AP and Reuter as in IHT 9 Aug, DW 13 Aug}. House Armed Services Committee chairman Les Aspin says he had been told that Iraq had "rather publicly loaded and then downloaded [chemical weapons] from aircraft. And they did it rather in the open expecting us to see it... I think it was a rather deliberate move on their part, probably...as [a military] deterrence to us" {WP 9 Aug}. There are reports of Iraqi *Scud* missiles having been moved into Kuwait, with much accompanying speculation about CW warheads for the missiles {WSJ 9 Aug}. But Israeli Defense Minister Moshe Arens tells an interviewer next day that "to the best of our knowledge [Saddam Hussein] does not have missiles with gas-carrying warheads" [see also 28 Jun] {Yedi'ot Aharonot (Tel Aviv) 10 Aug in FBIS-NES 10 Aug}.

President Bush, during a televised address on the crisis, says that any use by Iraq of its CW weapons "would be dealt with very, very severely" {WP 9 Aug}. Over the next few days, according to US officials speaking unattributably to the press, the message privately conveyed by the US Government to Iraq is that the US is prepared to use all of its capabilities in response to a poison-gas attack, including its force of tactical nuclear weapons {WT 16 Aug}.

Demand for anti-CW protective equipment nevertheless builds up rapidly within the region, creating a market which producers around the world rush to supply {WP 10 Aug, TELAM 10 Aug in FBIS-LAT 13 Aug, Ind 11 Aug, AFP 13 & 14 Aug in FBIS-WEU 15 Aug, DTel & WP 15 Aug, Reuter as in NYT 16 Aug, DW 18 Aug, TL 23 Aug, FT & WT 24 Aug, Obs 26 Aug}. The US Defense Logistics Agency has been operating 24-hour-a-day emergency supply centers nationwide, its orders including \$50-million worth of CW respirators and protective overgarments [see 1 May] {WP 22 Aug}.

8 August In the FRG, the Mannheim public prosecutor tells reporters that Imhausen Chemie [see 27 Jun] is suspected of having supplied Libya with plans not only for the chemical-weapons plant at Rabta but also for a second such plant, using a Federal research grant to pay employees working on the project {WP 9 Aug}. The US consul in Stuttgart later reports to the State Department that the second set of plans, code-named "Pharma 200," is believed by the prosecutor's office to be for the projected factory in the Sebha oasis [see 18 Jun] {*Inside the Pentagon* 23 Aug}.

9 August In Athens, the Iraqi ambassador to Greece, Abdel Fetah Al-Khezreji, tells a news conference that his country will use CW weapons if it is attacked. {DTel 10 Aug}

9 August In the US House of Representatives, the Government Operations Subcommittee on Human Resources reports its conclusion, after 14 months of investigation, that the Reagan Administration had "obstructed" the Federal health study of Vietnam-War veterans exposed to Agent Orange which the Congress had mandated in 1979 [see 2 Aug]. This obstruction then led to cancellation of the study in 1987, because of White-House fears of enormous compensation claims from veterans {NYT 10 Aug, *Science* 31 Aug}. A senior federal Health official, Dr. James O Mason, who had headed the National Centers for Disease Control at the time of the study, says the committee's report {House report no. 101-672} "is for the most part factually incorrect" {NYT 22 Aug}.

10 August China distributes a paper at the CD detailing its posi-

tion on challenge inspection. The paper refers to the consultations on the issue conducted by the Chairman of the CW Ad Hoc Committee [see 6 Aug] and says that the "Chinese delegation finds it necessary to reiterate [see 12 Apr] its principled position and suggestions, in the hope that they will be seriously considered and objectively reflected." The paper states that "in strict conformity with the purposes and objective of the future Convention, challenge inspections should be concluded in any facility, location or installation relevant to compliance with, and the implementation of the Convention." The paper then reaffirms the Chinese view that a challenged State Party should be "under the obligation to demonstrate compliance" while being allowed "the right to launch appeals concerning the abuse of the right to challenge inspection." Decisions on such appeals, on whether challenge inspections should be conducted, and on the findings of any such inspections, should rest with the Executive Council of the CWC international Organization. {CD/1031}

10 August In the CD, the CW Ad Hoc Committee adopts its report to the conference presenting a new Rolling Text {CD/1033}. As usual the report is in three parts: a technical section; the Rolling Text proper--i.e., the latest version of the draft CWC, now 164 pages long--in Appendix I; and, in Appendix II, additional material on which consensus is emerging.

14 August In the GDR, a team of Bundeswehr experts arrives, after 24 hours notice, at a Soviet army storage facility near Hohenleipisch to check for the presence of CW weapons. They find no such weapons nor any sign of recent storage [see also 18 Jul]. The inspection is the first to be conducted under the terms of a confidence-building accord between Moscow and Bonn. {TASS 13 Aug in FBIS-SOV 14 Aug; Reuter as in CN 15 Aug; TASS 16 Aug in FBIS-SOV 17 Aug}

14 August Canada furnishes the CD with a detailed study of the likely size and costs of the international CWC organization {CD/PV.573}. As regards the inspection needs laid down in the current rolling text (CD/961), the study has the following conclusion: "In round numbers, this exercise suggests that the Technical Secretariat will require about 600 inspectors to carry out its prescribed functions. The addition of support staff would bring this number up to at least 1000. If about half of the inspectors are absent at any given time, then the headquarters must be able to accommodate about 700 workers at any given time. It is projected that the annual costs of the Technical Secretariat will be about 120 million dollars and that there could be a one-time cost of up to 30 million dollars to electronically secure all sites. It is impossible to make any meaningful cost-estimate for the headquarters infrastructure at this time since neither its location is known nor the level of support which might be available from the host country." As yet there are no provisions in the Rolling Text for "ad hoc verification" or routine inspection of "CW capable plants." The latter might necessitate a further 200 or so inspectors, the study reckoning that about a thousand such plants exist. {*The Chemical Weapons Convention and the International Inspectorate: a Quantitative Study*}

Canada also furnishes an assessment of procedures for measuring the toxicity of chemicals. {*Toxicity Determinations and the Chemical Weapons Convention*}

14 August Iran introduces into the CD a report on the national trial inspection which it had conducted in June at a plant producing the organophosphorus pesticide DDVP from the Schedule-3 chemical trimethyl phosphite. {CD/PV.573}

14 August US Defense Secretary Richard Cheney, asked at a press conference at Fort Stewart, Georgia, whether US forces are prepared to retaliate in kind against Iraqi CW attack, says: "I cannot conceive of a situation in which the United States would want to use chemical weapons. The president has a wide range of options available to him in terms of our military capability, and he

would be the one who would ultimately make a decision about how to react." {Reuter as in IHT 15 Aug}

15 August Iraqi President Saddam Hussein offers Iran a peace treaty on Iranian terms, thus in effect formally ending the 1980-88 Gulf War.

15 August In Israel, the army announces that it has gas masks ready for distribution to all 4.5 million citizens within 4-5 days, but, despite great popular demand, government officials order delay {LAT 16 Aug}. There is much protest, and opinion within the government divides publicly {FT 21 Aug, WT 22 Aug}. The matter goes to Cabinet on 22 August, where it is decided to defer decision and to establish a subcommittee to recommend distribution when and if it saw fit to do so {FT 23 Aug}.

15 August In Florida, a US federal court indicts a Spaniard and a West German on charges of conspiring illegally to export to Libya, among other things, toxic chemical artillery shells from the United States. {SFC 16 Aug}

16 August The USSR expresses support at the CD for the idea of a special ministerial-level meeting to accelerate the CWC negotiation [see 2 Aug]. Soviet representative Serguei Batsanov speaks of the advance preparations needed to make such a meeting worthwhile. He reviews the political problems still outstanding, suggesting ways forward. On the issue of promoting universality of adherence to the CWC, he talks of "a possibility of introducing additional export restrictions on specific chemical products to countries which refuse to become parties."

He speaks, too, of the Biological Weapons Convention and of ways for strengthening it that might be considered during the 1991 Review Conference, notably as regards verification. He reaffirms Soviet support for the idea of a verification protocol, outlining possible provisions. For example, he suggests the compilation of "national biological registers," the facilities listed in which would be subject to inspection at any time without right of refusal. {CD/PV.574}

16 August US Ambassador Stephen Ledogar speaks at the CD about the gains made in the CWC negotiation thus far during the 1990 session, prefacing his review, however, as follows: "Progress was not...what we had hoped for this year. For the US part, our review of key chemical weapons issues was only concluded this month. But many others in this room contributed to the delay as well. And as the US made its conclusions known on several vital questions, a certain atmosphere of recrimination and finger-pointing replaced the dispassionate discussion of national perspectives that should be the medium of serious negotiation. We are likely to conclude this session of our conference, I regret to say, on a sour note."

In the course of his statement he reiterates US CW armament policy, referring as he does so to "the sad developments of the last two weeks": "If we are attacked with chemical weapons, we must have a variety of response options, including the option to respond in kind so long as we still have some chemical weapons." {CD/PV.574}

17 August In the FRG, warrants are issued for the arrest of seven people, including a former BND agent, suspected, after several years of investigation [see 7 Dec 88], of illegal involvement in the Iraqi CW-weapons program. The suspects are associated with three West German companies: Preussag AG, the large north German construction and heavy engineering group based in Hannover; Water Engineering Trading GmbH of Hamburg, a small company said to have been set up by former Preussag employees to do business with Iraq; and Pilot Plant of Dreieich, a subsidiary of Karl Kolb GmbH, suppliers of laboratory and other equipment [see 9 Jan 89] {FAZ 18 Aug in FBIS-WEU 20 Aug; NYT

18 Aug; DerS 20 Aug; FT 24 Aug}. It is later reported that the decision by the Darmstadt prosecutors to take this action followed a new expert opinion received in July from a Swiss authority on the business which Karl Kolb GmbH had been doing with Iraq since 1983: the opinion reportedly was that the company had built six, not one, chemical plants, and that all were suitable for chemical-weapons production, including production of hydrogen cyanide, mustard gas and tabun {DerS 8 Oct in FBIS-WEU 10 Oct; WSJ 10 Oct; DerS 22 Oct in FBIS-WEU 24 Oct; *Hannoversche Allgemeine* 31 Oct in *German Tribune* 18 Nov}.

18 August "Iraq will not use chemical weapons unless the United States uses nuclear weapons against it" says Iraqi Foreign Minister Tariq 'Aziz during an American television interview in Baghdad [see also 9 Aug]. {INA 18 Aug in FBIS-NES 20 Aug; G 20 Aug}

21 August At the CD, the Chairman of the CW Ad Hoc Committee, Ambassador Hyltenius, introduces his report with its new Rolling Text [see 10 Aug]. He mentions specifically four new features of the draft CWC: the texts on alleged-use verification, on order of destruction, on amendments, and on settlement of disputes. As to the new Appendix-II material, he draws attention to the texts on jurisdiction and control, on old chemical weapons, and on "measures to redress a situation" (meaning the question of sanctions).

He reports that there is agreement that the leader of the Soviet delegation, Serguei Batsanov, should be appointed as his successor in the chair for 1991. {CD/PV.575}

The CD formally adopts the Committee's report at its next plenary session. {CD/PV.576}

21 August The Netherlands introduces into the CD a bid-book detailing its offer [see 6 Feb] to make The Hague the seat of the CWC Organization. Its CD ambassador draws attention to the disadvantages of establishing the Organization in the vicinity of the International Atomic Energy Agency. He quotes as follows from the bid-book: "The Netherlands is prepared to bear the costs of leasing a building to house the Preparatory Commission and the treaty Organization during the preparatory phase and for a considerable period of time after the signing of the treaty, which would cover half of the transitional period. The Netherlands would also meet the costs of furnishing and equipping the accommodation. One matter requiring further attention during the preparatory phase will be the training of inspectors. The Netherlands is studying the possibility of providing training facilities free of charge." {CD/PV.575}

21 August At the CD, Ambassador David Reese of Australia, in a valedictory statement, regrets the failure of this year's session to make progress on verification, saying: "We have failed because of the time it has taken some delegations to put their policies forward and because the differences in approach to the issue are still too wide to bridge." Yet, having dwelt on some of those differences and having alluded to the Kuwait crisis, he expresses belief in the possibility of a completed CWC being presented, after the proposed "ministerial meetings in the first half of 1991," to the UN General Assembly at its 46th session. {CD/PV.575}

21 August The leader of the Indian delegation tells the CD plenum that the 8th-year-pause proposal [see 28 Jun], "far from achieving the desired objective of universality, would in fact have the opposite effect, as States may tend to shy away from joining a convention whose future is uncertain and which does not ensure their security from the very beginning." He continues: "If at all, such an assessment needs to be made on the convention's entry into force by all States which subscribe to it, on an equal footing. The ideal way to ensure universality is to make the convention attractive for those who join it. To this end, the interests of those who possess chemical weapons must be matched by the interests

of those who do not, and who will accept curbs on their chemical industry--which plays an important role in their development--in the hope of achieving enhanced security." {CD/PV.575}

21 August The CD agrees that it should convene in three sessions of 10, 7 and 7 weeks respectively (rather than two sessions of 12 weeks, as at present and in earlier years) during 1991, the opening plenaries to be held on 22 January, 14 May and 23 July, and that there should be fewer plenary sessions {CD/1036}. New rules of procedure are adopted accordingly {CD/8/Rev.3}.

21-22 August In the USSR, a team of US specialists visits the chemdemil training facility at Chapayevsk. Team leader Dr. Robert Mikulak tells *Izvestiya* that the visit is taking place within the framework of the June bilateral CW destruction agreement [see 1 Jun]. A Soviet return visit is to tour the US chemdemil facility on Johnston Atoll. {AN no. 2248; TASS 22 Aug in FBIS-SOV 23 Aug; *Izvestiya* 25 Aug in FBIS-SOV 30 Aug}

22 August The Moscow weekly *Literaturnaya Gazeta* publishes a long article about the 1979 anthrax epidemic in Sverdlovsk [see 11-15 Apr 88]. The article dwells on the possibility that, as the US Government had subsequently suggested, the cause might have been a BW-weapon accident. But it also quotes Colonel A Khar-echko, chief of the military epidemiology institute in Sverdlovsk upon which those suspicions had fastened: "I believe that this absurd story has circulated because the majority of people are more ready to believe in fantastic things than in real and natural explanations." The article calls, on behalf of the editorial board, for a parliamentary commission of inquiry. {*Literaturnaya Gazeta* 22 Aug in FBIS-SOV 5 Sep, WSJ 28 Nov}

23 August The Federal German Economics Ministry announces that 59 West German companies are under investigation for alleged offenses concerning delivery of armament equipment to Iraq, especially CW-related equipment [see 17 Aug] {FT 24 Aug}. The companies are identified in a confidential Ministry report subsequently referred to in press reporting {WSJ 2 Oct}; many had already been named in the press {DerS 13 Aug}.

24 August The leader of the Chinese delegation speaks at the CD of the consultations on Article IX regarding challenge inspection [see 10 Aug], saying "we must not lose sight of the fact that this issue cannot be dealt with separately and in isolation." He goes on: "Facts have demonstrated that, while emphasizing the issue of verification, it is also necessary to accord due importance to such issues as the complete prohibition of the use and the thorough and unconditional destruction of chemical weapons; assistance; undiminished security, and old chemical weapons, giving them priority, or at least discussing in parallel." {CD/PV.576}

24 August The summer session of the CD ends.

25 August Arriving in Saudi Arabia from Fort Benning, Georgia, is the 608th Ordnance Company, a unit with experience in handling CW weapons gained on Johnston Atoll. {FT 28 Aug}

25-30 August In the USSR, the team of US specialists that had been visiting Chapayevsk [see 21-22 Aug] is in Dzerzhinsk, inspecting the country's largest chemical center, including what TASS describes as "special production facilities mothballed since the mid-1940s which are to be dismantled in the near future" {TASS 30 Aug in FBIS-SOV 30 Aug}. The team also makes a two-day visit to a chemical-weapons storage facility at Kambarka, where lewisite has been stored in steel tanks since the beginning of the 1950s {TASS 24 Aug in FBIS-SOV 24 Aug; *Vremya* 27 Aug in FBIS-SOV 28 Aug}.

28 August In Saudi Arabia, the commander of the joint forces, Lt-Gen Prince Khalid Bin-Sultan, responds as follows during a tele-

vised interview to a question about the CW weapons of Saddam Hussein: "we are fully aware of his limited capabilities, and we also know--and he knows it full well--that should he use [chemicals] it would cause the total destruction of Iraq. At the same time, with regard to the Saudi Armed Forces, we are prepared for this type of warfare. I would like to stress that towns and civilians are least exposed to this danger, because in fact Saddam will head first for the military concentrations." {Riyadh television service 28 Aug in FBIS-NES 29 Aug}

Shortly afterwards, the country's director of civil defense, Gen Hashem Abdulrahman, announces that King Fahd has ordered his government to purchase gas masks for every Saudi citizen and resident foreigner, some 12 million people in all. {WP 31 Aug}

29 August The US Army's chemdemil plant on Johnston Atoll is 32 months behind schedule and will go at least \$190 million over its \$371 million budget, according to a General Accounting Office report released today [see also 13 Jun]. {GAO-NSIAD-90-222; AP as in SFC 30 Aug; NYT 31 Aug}

30 August In Angola, the Chief of the General Staff states that the Angolan Air Force has never used chemical weapons. He is responding to accusations made in Lisbon by UNITA [see also 11 Jul]. {Luanda domestic service 30 Aug in FBIS-AFR 31 Aug}

30 August In West Germany, *Stern* magazine quotes documents that implicate a US corporation, the Foxboro Company, in the supply of know-how and components for an Iraqi CW-agent precursor plant. {*Stern* 30 Aug}

Several human-rights organizations in the country have announced their intention of bringing legal action against the Federal government and German corporations regarding involvement in Iraqi weapons programs [see 23 Aug]. Medico international of Frankfurt plans to sue the government for DM 500 million in compensation for the victims of Halabja. {FR 31 Aug}

September In the United States, the Congressional Budget Office releases its estimate of the financial costs to the United States of five pending arms-control agreements, based on data received from the On-Site Inspection Agency, the Arms Control & Disarmament Agency, the Office of Management and Budget, the Office of the Undersecretary of Defense for Acquisition, and the military services. The following summary table is from the CBO report {*US Costs of Verification and Compliance under Pending Arms Treaties*}. The costs estimated for compliance and on-site inspection are in millions of 1990 US dollars:

	<u>One-time costs</u>	<u>Annual costs</u>
Bilateral START treaty	410-1830	100-390
CFE treaty	105-780	25-100
Bilateral TTB and PNE treaties	85-200	50-100
Bilateral CW agreement	45-220	15-70

1 September East European government officials say that Warsaw Treaty countries, encouraged to do so by the United States, have agreed in principle to sell gas masks and decontamination equipment to Saudi Arabia for protecting its civilian population against Iraqi CW attack {NYT 6 Sep}. By early October large shipments from Hungary and Czechoslovakia are under way via Vienna, carried in Aeroflot cargo aircraft under British charter {Vienna television 25 Oct in FBIS-WEU 26 Oct}

1 September In the FRG, the last of the stockpiled US nerve-gas weapons is transported out of Clausen [see 26 Jul], to the cheers of local townspeople. The stockpile is now 50 km away, at Miesau, waiting to be entrained for Nordenham {AP as in NYT 2 Sep; *Mainzer Rhein-Zeitung* 3 Sep; Reuter as in IHT 3 Sep}. This next phase of the retrograde is scheduled to begin on 12 September, which it does {DPA 4 Sep in FBIS-WEU 5 Sep; SFC 5 Sep 9; DTel 13 Sep}.

2 September US Secretary of State James A Baker III testifies to the House Foreign Affairs Committee that the Administration intends to maintain a long-term military presence in the Persian Gulf area even if Iraq agrees to withdraw from Kuwait. He speaks of "a new regional security structure" within which the United States "will work with the rest of the regional and international community to prevent...Iraqi efforts to acquire and produce weapons of mass destruction." {NYT 5 Sep}

5 September British news media carry a report based on information from Israel and East Germany that Iraqi CW weapons may include ones capable of penetrating antichemical protection {Ind 11 Sep}. The weapons are said to involve "freeze-dried hydrogen cyanide" and "dusty mustard." Commenting on the report, the Director of the UK Defence Ministry Chemical Defence Establishment, Graham Pearson, discounts its suggestion that the gas masks of British forces, including those in Saudi Arabia, are vulnerable to any such penetration {*Chemistry in Britain* November}.

10 September *Der Spiegel* identifies 44 foreign corporations associated with the Libyan chemical-weapons-production effort, 29 of them West German. {DerS 10 Sep}

11 September In Moscow, *Krasnaya Zvezda* publishes an interview about the Soviet chemdemil program [see 2 Aug] with Major-General Professor I B Yevstafyev, who is chief of a Chemical Troops directorate. He says that "all eight of our storage facilities" for chemical weapons are located in the RSFSR (Russia). {*Krasnaya Zvezda* 11 Sep in FBIS-SOV 13 Sep}

12 September The "two-plus-four" treaty on German re-unification is signed in Moscow. Article 3 (1) contains the following undertaking: "The Governments of the Federal Republic of Germany and the German Democratic Republic reaffirm their renunciation of the manufacture and possession of and control over nuclear, biological and chemical weapons. They declare that the united Germany, too, will abide by these commitments. {Treaty on the final settlement with respect to Germany}

12 September In Bonn, there is further tightening of the network of foreign-trade controls aimed at blocking German involvement in foreign nuclear, biological or chemical weapons programs [see 1 Jun]. A committee of conference of the Bundestag and Bundesrat agrees on a strengthening of the projected law, "Improvement of the surveillance of external trade for the prohibition of nuclear, biological and chemical weapons" {FR 13 Sep in FBIS-WEU 13 Sep}. The law is expected to enter into force before the end of November {*Handelsblatt* 14 Nov in FBIS-WEU 26 Nov}.

13 September In the US Senate, the CW counterproliferation sanctions bill S.195--which had been approved on 17 May [see 16-17 May] but which still awaits referral to a House-Senate conference for reconciliation with HR 3033, the milder counterpart House bill--is introduced by Senator Helms as an amendment, subsequently adopted, to a bill, S.2927, amending the Export Administration Act aimed at removing old Cold-War restrictions from US foreign trade. {CR 13 Sep, pp. S13021-28}

14 September The *Los Angeles Times*, attributing an unidentified "leading Arab official," reports that, in "a test monitored by Western intelligence last year, the Iraqi military successfully fired a chemically loaded missile in northwest Iraq," describing the test weapon as "an intermediate-range ballistic missile" {LAT 14 Sep}. In Israel some days previously unidentified "senior security sources" had reportedly said that Iraq would probably soon have surface-to-surface missiles with chemical warheads [see also 8 Aug]. {*Yedi'ot Aharonot* 9 Sep in FBIS-NES 10 Sep}

Two weeks later, the *Washington Post* quotes unidentified US officials as saying that US intelligence sources have no evidence to indicate that Iraq has tested chemical (or biological) weapons on the *Scud* missile. {WP 29 Sep}

14-19 September In Kühlungsborn, East Germany, the GDR Academy of Sciences Society for Physical and Mathematical Biology and the GDR Committee for Scientific Problems of Safeguarding Peace and Disarmament join in convening a large international conference on "Prevention of a Biological and Toxin Arms Race and the Responsibility of Scientists."

15 September In Coventry, England, a workshop on CBW is held during the 5th IPPNW European Symposium, "Health and Security 2000: New Thinking in Europe."

17 September Israeli Defense Minister Moshe Arens meets in Washington with US Defense Secretary Dick Cheney seeking, according to a prior report in the *Washington Post*, Israeli access to US satellite intelligence "that would enable Israel to target Iraqi military sites and chemical weapons facilities on short notice." {SFC 15 Sep}

20 September US forces in Saudi Arabia receive the first six of the Fuchs NBC reconnaissance vehicles [see 15 Mar] which the West German Bundeswehr has undertaken to provide {DPA 20 Sep in FBIS-WEU 20 Sep}. Sixty of the vehicles are being transferred to the US Army for use in the Gulf area {WEU Doc no. 1248}.

22 September The US nerve-gas weapons in West Germany [see 1 Sep] finally leave the country, on two ships out of Nordenham, bound for Johnston Atoll {AFP 3 Oct in FBIS-EAS 3 Oct}. Stormy seas had impeded their departure {*Journal of Commerce* 21 Sep}, which had begun on 18 September {*Pravda* 20 Sep in FBIS-WEU 24 Sep}.

24 September In Prague, the Czechoslovak Defense Ministry announces that an antichemical defense unit of 170 Army volunteers is being trained in readiness for deployment to Saudi Arabia, if so requested. President Vaclav Havel had just said at a press conference in Italy that Czechoslovakia could possibly participate in an international military action against Iraq. {WT 26 Sep; CTK 24 Sep in FBIS-EEU 27 Sep}

26 September In New York, US Secretary of State James Baker and Soviet Foreign Minister Eduard Shevardnadze begin a round of ministerial talks. A State Department official says they want to make nonproliferation "a new arms control agenda for the '90s," including chemical nonproliferation. {WP 27 Sep}

Speaking in Washington three weeks later, Secretary Baker says: "We will work with the Soviets to explore sanctions, both bilateral and multilateral, that might be imposed against those states that violate international nonproliferation norms or use weapons of mass destruction." {G 20 Oct}

28 September In Turkey, customs officials at the port of Mersin refuse to allow the transit to Iran of a cargo of West German chemicals, including about 100 tons of sodium cyanide, from a Polish ship that had arrived two days previously because of inadequate final-destination and end-use documentation; the ship returns to Antwerp {Ind 29 Sep; *Gazet van Antwerpen* 2 Oct; *Het Volk* 2 Oct; AFP as in Tag 4 Oct; *Keyhan* 4 Oct in FBIS-NES 25 Oct}. The West German Government is said to have attempted to block the shipment, supposing Iraq to have been the final destination {DerS 1 Oct; AP as in FR 1 Oct}.

28 September In the United States, the Chairman of the House Armed Services Committee, Congressman Les Aspin, tells reporters that US intelligence sources have reported that Iraq has produced a stockpile of biological weapons and will have a "militarily significant number" of them ready for battlefield use in a few months {WP 29 Sep}. His statement follows earlier reports in the press attributing unidentified US officials speaking of Iraqi BW weapons {e.g., ST 2 Sep}, and is reportedly confirmed by "Administration officials." During a public speech made ten days previously in New York, the Director of US Central Intelligence, William Webster, had said that Iraq "has a sizable stockpile" of biological as well as chemical weapons, adding, however, that this did not mean that "for every type of BW capability they currently have the corresponding delivery systems with which to be effective {prepared text, Foreign Policy Association, New York City, 18 Sep; NYT 29 Sep}. *Time* magazine reports that US forces are being inoculated against anthrax {*Time* 1 Oct}.

28 September The US General Accounting Office issues a report on the status of the 155mm binary artillery shell program. The canister supplier--Marquardt Corporation--is continuing to have problems meeting the delivery schedule for canister components and will not eliminate the fiscal-year 1988 program backlog before October 1990, which is one of the preconditions for de-fencing the fiscal-year 1990 procurement appropriations; additionally, completion of the DF production facility has slipped to October 1990. {GAO/NSAID-90-295}

1 October The commander-in-chief of the British Army on the Rhine says that British forces will not use battlefield nuclear weapons in reply to an Iraqi chemical attack. {PA as in FT 2 Oct}

1 October President Bush, during his address to the UN General Assembly, says: "As a world community, we must act, not only to deter the use of inhumane weapons like mustard and nerve gas, but to eliminate the weapons entirely." He continues, after referring to the June US-USSR CW agreement: "This isn't merely a bilateral concern. The Gulf crisis proves how important it is to act together, and to act now, to conclude an absolute worldwide ban on these weapons." {NYT 2 Oct}

1 October In Israel, the Government announces that anti-CW protective kits including gas masks are to be issued to all 4.6 million Israeli citizens over the coming weeks [see 15 Aug]. The kit is to be provided in sealed boxes, the unauthorized opening of which is to be an offense. Additional masks are being bought in Europe for the 1.7 million Palestinians living in the occupied territories, who, because, officials say, they pay no National Insurance taxes, are to be charged a token sum; they will also be required to sign a commitment not to abuse the kit {G, Ind, IHT & WP 2 Oct; DTel 3 Oct}. Unidentified senior IDF sources reportedly say that the decision to distribute the kits was greatly influenced by "the pressures exerted by the public, and especially by the political echelon. The decision to distribute the masks was unavoidable, even though there has been no change in the situational analysis that the probability of an Iraqi chemical attack is extremely slim." {*Ma'ariv* 2 Oct in FBIS-NES 2 Oct}

When distribution begins the following week, Prime Minister Yitzhak Shamir describes it as a purely defensive and precautionary measure, carrying no implication of any Israeli intent to attack Iraq. {G & NYT 8 Oct}

9 October In Czechoslovakia, the foreign affairs committees of both houses of the Federal Assembly approve the proposal of President Vaclav Havel to send antichemical defense specialists to

Saudi Arabia if they are invited [see 24 Sep]. {CTK 9 Oct FBIS-EEU 10 Oct}

13 October In Washington the Institute for Defense Analyses distributes for wider comment and criticism its June 1990 preliminary estimates of CWC inspection costs. The estimates had been made for the Office of the Assistant to the Secretary of Defense (Atomic Energy). They cover: (a) the cost of inspections conducted for both routine and ad hoc verification by the international Organization of the CWC, some fraction of which is to be borne by each state party; and (b) the additional costs to states parties of providing escort teams for the international inspectors, and of further security and protective measures. The estimates do not cover: (a) the costs of the National Authorities to be established under the Convention for interaction with the international Organization; (b) costs incurred by industrial entities in preparing themselves for international inspection; and (c) inspections on request (challenge inspections). A rather wide range of different inspection options and scenarios is considered, a sensitivity analysis of the principal variables being included with the estimates. The basic assumption about weapons facilities to be inspected under Articles IV and V is that 35 factories and 38 depots will be declared worldwide (with one of each in western Europe other than the FRG).

For the base case, taken as annual inspection of 36 Schedule-1 facilities worldwide, 70 Schedule-2 and 600 from the "ad hoc" registers, in addition to inspection of the declared weapons and chemdemil facilities, the conclusion is that inspection-related activities will cost the international Organization on the order of \$800 million (in constant 1990 US dollars) over the first 15 years of the Convention being in force. The costs to the United States, including an assumed 40-percent contribution to the international costs, would total somewhat below \$400 million over that period. {IDA paper P-2383} [See also 19 Jun 89, 14 Aug 90 and September 90]

15 October In New York, at the 45th General Assembly of the United Nations, the First Committee, dealing with disarmament questions, begins its work, due to end on 30 November.

16 October The US-Soviet bilateral talks on the prohibition of chemical weapons resume for their 17th round, this time in New York. The agenda includes cooperation in chemdemil technology and progress in implementing the Wyoming Memorandum of Understanding, as well as the CWC. {TASS 17 Oct in FBIS-SOV 17 Oct}

17 October In Belgium, Ministerial Orders enter into force requiring export or transit licenses for additional chemicals on the Australia-Group warning list except where the destination is an EEC country {*Belgisch Staatsblad* 17 Oct, pp. 19852-54}. Previously only the nine core-group chemicals had been subject to such restrictions [see 20 Dec 89].

20 October Iraq, according to *Der Spiegel* magazine, had been more heavily assisted by the GDR in its CW program than had previously been supposed. The magazine says that, according to eye-witness statements and secret intelligence reports, fitters from the GDR were involved in construction of poison-gas factories at Samarra and Al-Fallujah {DPA 20 Oct in FBIS-WEU 23 Oct; DerS 22 Oct in FBIS-WEU 24 Oct}. Earlier reports by *Der Spiegel* of other forms of GDR involvement with Iraqi CW weapons had been denied by GDR Disarmament and Defense Minister Rainer Eppelmann {DerS 20 Aug; Reuter as in G 20 Aug}.

23 October In the US Congress, a House-Senate conference committee concludes the 1991 Defense Authorization Act. For the binary munitions program, the legislation authorizes neither the \$141 million in 1991 production funding of the Administration's original request, subsequently withdrawn [see 11 Jul], nor the \$28 million sought for fullscale development of the binary warhead for the Army's Multiple Launch Rocket System, and it further denies the \$5 million sought for advanced development of a new binary munition. And the legislation authorizes rescission of \$50 million unspent prior-year procurement funding.

For the chemdemil program, a total of \$382.6 million is authorized, \$28.2 million more than the original request. {CR 23 Oct, pp. H11935ff}

25 October Czechoslovakia, it is reported today, has notified the French Foreign Ministry that it has withdrawn the reservations it made when joining the 1925 Geneva Protocol. {*Svobodne Slovo* 25 Oct in FBIS-EEU 1 Nov}

26 October The US Senate approves the 1991 Defense Appropriations Act; the legislation had passed the House the day previously, with approval of the House-Senate conference report {DN 29 Oct}. The legislation rescinds only \$22.3 million of the prior-year procurement funding unspent on production of binary chemical munitions --\$27.7 million less than had been authorized [see 23 Oct]. On chemdemil it appropriates \$292.7 million, with \$5.3 million being earmarked for cryofracture research, and requires substantial changes in the management, scope and reporting of the program. It bars the Defense Department from sending any more chemical weapons to Johnston Atoll [see 3 Aug] once the European retrograde [see 22 Sep] is complete. {House report no. 101-938}

27 October The US Senate passes the Export Facilitation Act of 1990, which is the agreed House-Senate conference version of S.2927 [see 13 Sep] incorporating, among other bills, S.195, which is the "Chemical and Biological Weapons Control and Warfare Elimination Act" {CR 26 Oct, pp. S17179-91}. The House having done the same the day previously, the Congress thereby adopts CW counterproliferation sanctions legislation that will require, among other things, a one-year cutoff of US trade with companies that aid development of chemical or biological weapons overseas; and once the President determines that a country has used CW or BW weapons, sanctions must be applied. The legislation is opposed by the Administration on the grounds that it "does not give the President sufficient flexibility to impose or waive sanctions based on a consideration of the nation's security interests" {CR 26 Oct, p. S17184; WP 31 Oct; NYT 1 Nov}. It now goes forward for signature or veto by the President.

27 October At the close of the 101st US Congress, House-Senate disagreement on new legislation to benefit Vietnam-War veterans exposed to Agent Orange [see 2 May] remains unresolved. {WP 30 Oct}

27 October President Bush attends the summit meeting of the South Pacific Forum [see 1 Aug] in Honolulu where he pledges that no further US chemical weapons, beyond those currently en route from Europe, will be sent to Johnston Atoll [see 26 Sep]. {DTel 29 Oct; Reuter as in DTel 1 Nov; *The Economist* 3 Nov}

29 October From Thailand, the leader of the Karen National Union of Burma, General Bo Mya, announces that the Burmese army is planning to use chemical weapons in an attempt to wipe out the country's Karen and other insurgents. He says that a recent arms

shipment from China had been the first to contain chemical weapons. {*Bangkok Post* 30 Oct in FBIS-EAS 30 Oct}

29 October In Saudi Arabia medical personnel attending a course on the treatment of CW casualties are told by the commander of the US Army Medical Research Institute of Chemical Defense, Colonel Michael Dunn, that more than 95 percent of people affected by nerve and mustard gas in past wars have survived. He spoke of an international conference he had attended in Kuwait City in December 1989 where there had been "a very free exchange of information" with both Iranian and Iraqi doctors on chemical-casualty care. He quoted a figure of 45,000 for people affected by Iraqi mustard gas during the Gulf war, the fatality rate being about 3 percent as compared with about 5 percent for people affected by Iraqi tabun and sarin. {AP as in WP 30 Oct}

30 October Lt-Gen Prince Khalid Bin-Sultan, commander of the joint force in Saudi Arabia, speaks as follows during an interview broadcast from Cairo: "Everyone knows that the Gulf crisis has increased the military confidence and knowledge of the masses as a whole, such as knowledge about protection from chemical warfare. Training is good, and chemical masks and clothes are available. The best method of defense against these weapons is certainly to destroy them before they reach their targets." {Cairo domestic service 30 Oct in FBIS-NES 31 Oct}

31 October US Vice President Dan Quayle speaks as follows during an interview on MacNeil/Lehrer News Hour: "A Saddam Hussein who has chemical capability, biological capability--would like to have nuclear capability--cannot continue to have that capability even if he withdraws from Kuwait." {Reuter as in CN 1 Nov} [See also 2 Sep]

1 November In Saudi Arabia, the commanding general of US troops, General Norman Schwarzkopf, tells a reporter that there was little chance that Iraq, which he said may possess hundreds of medium-range missiles, has succeeded in attaching chemical warheads to them which it could deliver on a vast scale. {NYT as in IHT 2 Nov} [See also 14 Sep]

3 November In Israel some 3.4 million gas masks have by now been distributed [see 1 Oct], according to an official spokesman. {Jerusalem Domestic Service 3 Nov in FBIS-NES 5 Nov}

3-7 November From the Czechoslovak Ministry of National Defense, a "reconnaissance group" visits Saudi Arabia in connection with the possible deployment there of a Czechoslovak antichemical unit for the assistance of the Saudi population in the event of CW attack [see 9 Oct] {CTK 7 Nov in FBIS-EEU 8 Nov}. The unit would be stationed in the rear support area about 160 km from the Iraqi border {Prague domestic service 7 Nov in FBIS-EEU 8 Nov}. Saudi Arabia formally invites Czechoslovakia to send in the unit {Prague domestic service 7 Nov in FBIS-EEU 8 Nov}

4 November In New York, what TASS describes as the first part of the 17th round of US-Soviet bilaterals [see 16 Oct] comes to an end. Progress has been made on the drafting of the inspection protocol for the June bilateral agreement [see 1 Jun] {TASS international service 4 Nov in FBIS-SOV 5 Nov}.

7 November US combat troops in the Persian-Gulf area are being issued with a 145-page Army intelligence manual, the *Desert Shield Order of Battle Handbook*, describing Iraqi forces and doctrine. On Iraqi CW it is reported to say: "Chemical weapons are utilized when planners assess fire support or force size as insufficient to attain the objective. Once authorization for chemical weapons use is given corps commanders are given chemical rounds

to be delivered by artillery. Chemical warheads include three types: a lethal mustard agent, an incapacitating agent, and tear gas." {Ind 7 Nov}

7 November A court in Pirmasens, FRG finds Claus Vach, one of the organizers of the blockade of the US Army depot at Fischbach [see 29 Jun 88] guilty of *Nötigung* and fines him DM 1800 [see also 6 Jan 89] {DerS 29 Oct, *Pirmasenser Zeitung* 8 Nov}. The blockade had been in demonstration against the continuing storage of US chemical weapons in the FRG [see 22 Sep].

13 November In Britain, Prime Minister Margaret Thatcher tells the House of Commons: "We believe that [Saddam Hussein] also has biological weapons at his disposal." {HansC 13 Nov}

13-16 November The US Army Chemical Research, Development and Engineering Center hosts its annual Scientific Conference on Chemical Defense Research. The keynote address, given by Professor Matthew Meselson of Harvard University, is on "The role of anti-chemical protection in chemical warfare: deterrence and disarmament."

14 November In the UN General Assembly, the First Committee [see 15 Oct] adopts by consensus three resolutions on CBW {TASS 15 Nov in FBIS-SOV 16 Nov}. One resolution urges the CD to "intensify" its efforts during 1991 to conclude the CWC, "noting with appreciation the increasing number of States that have declared their intention to be among the original signatories to the Convention."

The second resolution empowers the Secretary-General to provide services for the Third BW Review Conference, which is to be held during the second half of 1991 after a Preparatory Committee meeting in Geneva during 8-12 April.

The third resolution, which is a strong reaffirmation of the Geneva Protocol and of measures already agreed for upholding its authority, "notes the continuing significance of the Security Council decision [in Resolution 620 (1988)] to consider immediately, taking into account the investigations of the Secretary-General, appropriate and effective measures in accordance with the Charter of the United Nations, should there be any future use of chemical weapons in violation of international law."

14 November The US Army Program Manager for Chemical Demilitarization distributes a draft environmental impact statement for the projected on-site incineration of the holdings of CW agents and munitions at Anniston Army Depot, Alabama, where about 7 percent by weight of agent of the total US CW stockpile is located. The review comment deadline is 31 December 1990. {*Disposal of Chemical Agents and Munitions Stored at Anniston Army Depot, Anniston, Alabama: Draft Environmental Impact Statement*}

15 November In the UN General Assembly, the First Committee unanimously adopts a resolution commending the Secretary-General's study on the role of the United Nations in the field of verification {A/45/372}, empowering him to take appropriate action on the recommendations, within available resources {A/C.1/45/L.42}. Included among those recommendations is one proposing that the UN Department for Disarmament Affairs should "develop a consolidated data bank...on all aspects of verification and compliance...including data connected with the Biological Weapons Convention and the future chemical weapons convention."

15 November President Bush, interviewed on Cable News Network, says in reference to Iraq's chemical weapons and attempts to develop nuclear weapons: "Having demonstrated this recklessness, I don't think the rest of the world would say this is good enough, just what they call the status quo ante, going back to where things were before the invasion [of Kuwait]. You'd have to have some international safeguards." {NYT & SFC 16 Nov}

16 November President Bush vetoes the "Chemical and Biological

Weapons Control and Warfare Elimination Act of 1990," the counterproliferation sanctions legislation just passed by the Congress [see 27 Oct], because the mandatory sanctions the law would require "would severely constrain presidential authority in carrying out foreign policy."

At the same time, however, he signs an executive order empowering the Secretary of State to impose trade sanctions against foreigners who are found to "knowingly and materially contribute" to CBW-weapons proliferation for as long as such activities continue. His order also authorizes economic and trade sanctions against countries that use or prepare to use chemical weapons. In contrast to the vetoed legislation, the executive order allows exemptions--for military contracts, and for "significant foreign policy and national security reasons." {WP 17 Nov}

Section 1 of the President's executive order states: "It is the policy of the United States to lead and seek multilaterally coordinated efforts with other countries to control the proliferation of chemical and biological weapons. The Secretary of State shall accordingly ensure that the early achievement of a comprehensive global convention to prohibit the production and stockpiling of chemical weapons, with adequate provisions for verification, shall be a top priority of the foreign policy of the United States, and the Secretary of State shall cooperate in and lead multilateral efforts to stop the proliferation of chemical weapons." {Executive Order no. 12735}

21 November In Paris, the assembled heads of state or government of the 34 countries participating in the Conference on Security and Co-operation in Europe--Canada, the United States and all of Europe except Albania--sign the Charter of Paris for a New Europe, which includes the following: "We call for the earliest possible conclusion of the convention on an effectively verifiable, global and comprehensive ban on chemical weapons, and we intend to be original signatories" [see also 7-8 Jun]. {Ind 22 Nov}

22 November The US nerve-gas artillery shells withdrawn from Europe have now arrived on Johnston Atoll. {Tag 22 Nov}

23 November In Britain, Parliament learns from the Ministry of Defence that the budget of the Chemical Defence Establishment, Porton Down, for the financial year 1990/91 is some 24 million pounds. {HansC 23 Nov}

26 November In Geneva the CD Ad Hoc Committee on Chemical Weapons reconvenes for open-ended consultations scheduled to end on 21 December.

27 November The US-Soviet bilateral talks on the chemical weapons ban resume [see 4 Nov] in Geneva. {TASS 27 Nov in FBIS-SOV 28 Nov}

27 November The commanding officer of the US Army Dugway Proving Ground distributes a supplement to the draft environmental impact statement on the projected Biological Aerosol Test Facility [see 19 Sep 88], entitled *New Alternative Action to Construct and Operate a Consolidated Life Sciences Test Facility at Dugway Proving Ground, Utah*. The review comment deadline is 24 January 1991.

29 November The UN Security Council adopts, by a 12-2 vote, resolution 678, thereby authorizing "member states cooperating with the government of Kuwait...to use all necessary means to uphold and implement Security Council resolution 660 (1990) and to restore international peace and security in the area" unless Iraq fully implements that and the subsequent resolutions by withdrawing from Kuwait by 15 January 1991. China had abstained from the vote; Cuba and Yemen voted against. The British and French foreign ministers use identical language in warning Iraq against "initiating the use of chemical or biological weapons." USSR Foreign Minister Eduard Shevardnadze also warns against the use of chemical weapons. {Ind 30 Nov}

THE CHEMICAL WEAPONS NEGOTIATIONS AT A CRITICAL JUNCTURE IS THERE A WAY AHEAD?

by Johan Molander*

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Introduction

Over the past year, the Ad Hoc Committee on Chemical Weapons at the Conference on Disarmament (CD) in Geneva has moved toward completion of the Chemical Weapons Convention, not least through the addition to the draft Convention of an agreed order of destruction regarding chemical weapons as well as chemical weapons production facilities. However, no breakthrough has been made in the main outstanding areas of political disagreement. Worse still, the strenuous efforts of the Ad Hoc Committee to tackle the core problems have disclosed that delegations stand further apart than hitherto understood on a number of key issues.

The fact that the United States has been lacking operative instructions on a number of important questions, in combination with a US-Soviet proposal that makes the final implementation of the Convention hostage to their judgment of participation in it, have soured the atmosphere of the negotiations. It has resulted in frustration among non-aligned countries, leading to procedural discussion rather than concentration on substance. In this situation China has fundamentally put into question challenge inspection--the very basis of a CWC verification regime. What else could be expected if the major powers are not seen as pursuing in earnest a comprehensive and effectively verifiable ban on chemical weapons?

The fact that--along with progress on a number of issues at very much the same pace as in previous years--serious differences have emerged in 1990 does not necessarily constitute a step backwards. Positions tend to crystalize towards the end of a negotiation, and the real issues, many of which have been skirted for a long time, have now been brought to substantive consideration. Having all elements on the table could and should, in principle, facilitate the creation of a package of solutions for several interlinked and disputed issues. It is, however, urgent to outline and pursue such a package. If the present differences are permitted to develop there is an evident risk that the chemical weapons negotiations will stall and fail.

I will try to present here a summary of the achievements of this past year, as well as of the problems that have arisen and their implications. I will then suggest a general outline of a package that might permit the negotiations to advance. Three main issues must be dealt with. First, how to approach within the Convention itself the problem of universality of adherence to the Convention; second, how to outline a sufficient, yet acceptable and manageable system of verification; and third, how to solve the problem regarding a prohibition of all use of chemical weapons.

Outcome of the Negotiations in 1990

The main achievements during 1990 have been attained on some important technical issues. As a result, the Annexes to Articles IV and V of the draft Convention now contain a complete order of destruction regarding chemical weapons as well as chemical weapons production facilities. This addition to the draft Convention--covering comparative counting rules for the destruction of binary components, fixed time frames for different categories of chemical weapons and rules for phasing out and finally destroying production facilities--is of major importance. The agreement results from the successful multilateralization of the bilateral US-Soviet agreement of June 1990, which in turn was based on multilateral work during the Swedish Chairmanship of the Ad Hoc Committee in 1987. Furthermore, progress has been made in refining basic definitions in the Convention and in establishing thresholds for declaration and verification of listed chemicals. Minor changes have also been made in the Schedules of chemicals.

In the area of legal and institutional questions, a new text for Article XIII on "Amendments" has been incorporated in the draft Convention, as well as a text on "Settlement of Disputes." Furthermore, a possible breakthrough has been made on the difficult issue of sanctions. Thus, an outline of a solution commanding wide but not yet sufficient support has been added in Appendix II under the heading "Measures to Redress a Situation and Ensure Compliance." Tentative texts have also been elaborated on two other thorny legal issues: "Jurisdiction and Control" and "Old Chemical Weapons." Both texts represent inventories of views and problems rather than possible solutions; at least a start has been made.

* Views in this paper are those of the author and do not necessarily reflect positions of the Swedish government.

Despite considerable effort, no solution has been registered on Article X on "Assistance and Protection against Chemical Weapons" or on Article XI on "Economic and Technological Development." The inability of the Western States--in particular the United States--to come to grips with these two issues, which are of specific concern to a number of developing, non-aligned countries, has contributed to a further deterioration of the negotiating climate and to a widespread feeling among some non-aligned countries that the major powers simply ignore their main concerns.

Except for a new agreed text on investigations of alleged use of chemical weapons, no progress has been made in the area of verification. On the contrary, the efforts of the Chairman finally to bring the main issues onto the negotiating table have revealed positions that are far apart. This polarization has occurred against a backdrop of uncertainty about what the US position on major verification issues really is or will be.

The Major Controversial Issues

Universality and the US-Soviet proposal for retaining CW-stocks. It is obvious that a Convention by which States Parties undertake not to produce chemical weapons and to destroy the stocks and production facilities they have, will not be viable if important CW-possessing or CW-capable States stay outside the regime. It is, however, difficult to make provisions in the Convention itself that would ensure its universality. What can be done is to draft the Convention in such a way that it is able to attract universal adherence, by being effective, verifiable and non-discriminatory. Yet even this can never guarantee the necessary adherence.

Therefore, delegations have played with the idea of establishing a very high number of ratifications for the entry into force of the Convention. Neither this, nor the drafting of a list of "CW-capable States" which would have to be among the parties in order to bring it into force, are practicable solutions.

While most States agree that universality is desirable, or even necessary, the United States seems to be most concerned about this issue. As a result, Washington has taken a unilateral approach to the matter. The first US position taken in the autumn of 1989 was to reserve the right to continue production of binary chemical weapons--even if the Convention entered into force--up to a level corresponding to two percent of their current stockpile, and to maintain this security stock until such a date that the US Administration was satisfied that all CW-capable States had joined the Convention. When the Administration--under the combined pressure of Congress, industry and President Gorbachev--gave up the binary program, it retained the rest of

the policy. The two percent security stock would now be made up of existing chemical weapons.

This policy remains virtually unchanged even if it has undergone a face-lift, as a result of the US-Soviet agreement in June 1990. It is in no way my intention to underestimate the importance of the US-Soviet agreement, in so far as it constitutes a binding international agreement not to produce chemical weapons. It was also historical in demonstrating the mutual confidence of the two parties; they actually left the verification of the agreement to be elaborated later.

As regards the security stocks, the agreement was a disappointment. The decision whether or not to proceed to the total elimination of all chemical weapons under the Convention was now, in the new joint US-Soviet proposal, left to a conference of the States Parties of the Convention, to be held during the eighth year after its entry into force. However, States having formally declared possession of chemical weapons before the end of 1991, are given a veto power over that decision. The United States and the Soviet Union are the only States which have formally declared possession so far. They thereby reserve the right to decide whether or not the Convention shall be finally implemented and their chemical weapons destroyed.

This proposal was forcefully pushed by the two major powers, causing an indignant outcry on the part of the non-aligned States and sullen, silent despair among most allies.

Challenge inspection. The search for an acceptable way to translate the concept of challenge inspection into treaty language has been laborious. A number of elements were identified in 1987 and in 1989, but so far the negotiators had not ventured to deal with concrete possible language of an Article. This year, the Chairman boldly undertook to bring the real issues onto the negotiating table by confronting delegations with a suggestion for a complete text of Article IX, including attached procedures.

The suggestion was based on a few fundamental considerations. First, a comprehensive approach for dealing with concerns regarding compliance was necessary, giving States the choice from a set of measures of escalating severity and intrusiveness: bilateral consultations, clarification procedures through the Technical Secretariat with an optional possibility of making them public or, finally, inspections on request. At the same time language was made more dispassionate, changing words like "suspicion" to "concern about compliance" and "challenge inspection" to "inspection on request."

Second, the inspection on request must be made a multilateral measure, its management left squarely in the hands

of the International Organization.

Third, the principle that a requested inspection should be carried out anywhere, without delay and without the right of refusal should be confirmed, leaving in practice, however, a possibility for the receiving State to propose alternative measures to demonstrate compliance at certain sites according to specific and limited criteria.

On this basis, work preceded diligently and intensively. Some important differences--notably regarding the role of the requesting State and of the Organization--were handled through the addition of brackets and footnotes. A certain optimism gained ground.

Thus, the acceptance among participating non-aligned States of access to requested sites was encouraging and far more unambiguous than had been expected. It emerged that non-aligned countries would accept mandatory inspections on request, on the condition that such inspections were not managed through observers from the requesting State, but that the Organization be given the main role (i.e., that the Technical Secretariat would carry out the inspection and the Executive Council assess its results).

The Western States also participated enthusiastically on the basis of the concept "anytime, anywhere, without the right of refusal." The United Kingdom stated in the CD plenary, at the level of Minister of State, that there was no site in the United Kingdom to which one could not grant access for the purpose of challenge inspections, pursuant to the Convention on Chemical Weapons. An impressive series of national trial inspections had led the British to conclude that national security, including at strategic nuclear sites, could be safeguarded by means of managed access at the site itself.

This view seemed to reflect also the position of other Western as well as East European delegations, including the nuclear-weapon States France and the Soviet Union.

However, no text was agreed. Two major countries could not join the momentum towards a first outline of an Article on inspections on request: China and the United States.

As work progressed, China finally made its precise view on mandatory inspections on request known. According to China, the right of a requesting State to have an inspection carried out anywhere should be limited to "any facility, location or installation relevant to the compliance with and implementation of the Convention." Furthermore, the Organization of the Convention--presumably the Executive Council--should examine the request and decide whether an inspection should be launched.

The proposal would obviously defeat the whole purpose of mandatory inspections on request. Firstly, the delay for launching an inspection--if this at all could be achieved in a political body--would be considerable, allowing time for the inspected State to clear out the site. Secondly, the Executive Council would have a hopeless task to decide whether a site was "relevant" or not, lacking any independent information. Thirdly, the effect of the proposal would be discriminatory. In the absence of such information, States would have to take a political view of the request. In international bodies, some States are less popular than others, and some can throw more weight around than others.

China got some support on the procedural issue of how to reflect its position in the draft, but it was notable that not one single country voiced support for the proposal in substance. Perhaps China thought that there existed some tacit support in the form of the ambiguous US absence of clear instructions.

In fact, throughout the 1990 session, the United States did not state any firm view on the issue of Article IX. Members of the Conference were told that the policy review in Washington continued, and that the concept of challenge could not be seen independently from similar arrangements under other arms control agreements. This presumably also means that the original US proposal submitted to the CD by then-Vice President Bush, containing provisions for mandatory inspection on request no longer reflects US policy. As the session went on, there was increasing concern, especially among Western States, that the US policy review was not only looking for ways and means to limit the scope of such inspections, but was actually tilting towards a right of refusal. Thus, the fact that the British chose to voice their support for a full-fledged challenge in the CD on a high level of government was widely interpreted as a message for Washington.

Uncertainty remains about which direction US policy will take. At the close of the session, there was a widespread feeling that, on the issue of challenge inspection, the United States--after having proposed it in 1984--was now finally coming round to not taking yes for an answer.

Additional measures of verification. Proposals for so-called ad hoc inspection stem from the fact that in the present outline of verification in the chemical industry, production capabilities in facilities that do not produce listed chemicals, or do so under the thresholds for declaration and verification, remain completely undeclared and unmonitored. Thereby, important capabilities for production of chemical warfare agents would be left completely outside the CWC verification regime. The need to find a way of opening facilities with such capability for some kind of non-systematic inspection has been strongly argued by Western and East

European countries, including the United States and the Soviet Union. In this context, proposals have been made to establish National Registers of the chemical industry, according to agreed criteria of capability. Ad hoc inspections could be triggered on the basis of such registers.

The case for ad hoc inspection is strong. However, the proposals made so far have not been convincing, the more so as the different proponents have been unable to agree among themselves on a format of such inspection.

Against this background, it is perhaps not surprising that many non-aligned countries chose the area of ad hoc inspection--an area of outspoken Western interest--to demonstrate their dissatisfaction with the lack of progress in areas of concern to them. A number of non-aligned countries, backed by China, refused even to discuss substantively the issue. They claimed that routine inspection and challenge would be enough, and if those two measures were elaborated, no additional measure of verification was needed. As a result, no progress could be made on the issue. Rather, the debate led to a further polarization within the CD. It is difficult to assess whether the position taken by some developing, non-aligned countries had other and deeper motives than simply to retaliate against the Western high-handedness in treating their main concerns, combined with a general reluctance regarding "too much" verification.

It is evident that, as presently drafted, verification of industry is limited to production, processing and consumption of Schedule-2 chemicals above substantial thresholds, which means that only a few developing nations will be subject to routine inspections. Ad hoc verification being ~~more non-discriminatory~~--a concept otherwise promoted by non-aligned countries--has the potential of increased monitoring in those countries. Still, to the extent that the non-aligned opposition to ad hoc inspections is based on substantive considerations, it may reflect their reluctance to add more, potentially costly, verification measures to a regime that already looks financially and administratively burdensome.

Is There a Way Ahead?

The above picture of the CW-negotiations is admittedly a rather gloomy one. However, there are varying degrees of difficulty in the different areas. Long-standing North-South issues like Article X on "Assistance and Protection against Chemical Weapons," Article XI on "Economic and Technological Development" and "Measures to Redress a Situation and Ensure Compliance" can all be solved in part as a result of work done in the last year. What is needed, is a realization among Western States that the solutions at hand are fair and reasonable compromises. Had these issues been taken seriously earlier, the compromises could have

been used as bargaining chips. They cannot any longer. The prolonged filibustering around these issues has made concessions on them a *sine qua non*. Taking Article X as an example, it would should contain *inter alia* an undertaking to assist with protective equipment a State Party which is threatened by chemical weapons. That is exactly what the United States and a number of other countries--including some that have no forces in the Gulf--have done in relation to Saudi Arabia and other countries threatened with chemical weapons by Iraq. If this can be done automatically in real life, why resist it in the text of the Convention?

By comparison, polarization is total in three main areas, where some imaginative thinking and flexible negotiating are needed. Two of the problems have been mentioned above: the issue of universality and the joint US-Soviet proposal on retaining CW-stocks; and the entire verification system, including routine inspection, ad hoc inspection and challenge inspection. Thirdly, there is the issue of the use of chemical weapons, and the relationship of the Convention to the 1925 Geneva Protocol, including reservations to it regarding retaliatory use.

Universality. The main flaw with the US-Soviet proposal for a possible retention of CW-stocks is its discriminatory character, conferring a right to CW possessor-States in the end to decide on the full implementation of the Convention. It is a mistake to think that under such uncertain conditions States would be encouraged to adhere to the Convention. Furthermore, by exaggerating the importance of chemical weapons for national security, this proposal sends the wrong message about the security benefits of a CWC. As is the case with the US position to maintain the right of second use of chemical weapons, it risks encouraging proliferation rather than stopping it.

However, one element of the proposal--a special review mechanism during the first ten years of the operation of the Convention--is worth examining closely. A basis for it already exists in the Rolling Text in Article VIII:B, on the "Conference of States Parties." One should consider to what extent such a review mechanism could have the power to amend implementation provisions of the Convention, including in the area of verification and the length of the destruction period. In a continuing review, security concerns of States Parties--including insufficient adherence to the Convention--could also be addressed.

It would seem too late to start a review during the eighth year, as proposed by the United States and the Soviet Union. It should start at the beginning of the sixth year, when a clear picture of the state of implementation is already at hand. At the end of the fifth year, the destruction of some categories of chemical weapons shall have been completed, and other categories should have been destroyed

by half. Furthermore, the first destruction period for chemical weapons production facilities will have been completed. At the end of the fifth year, the verification system in the chemical industry will be in full operation. It would also be possible to determine whether participation in the Convention is sufficient for all States Parties to have confidence in the regime established by it.

The Conference could then, as of the sixth year and on the basis of the current provision in Article VIII:B, establish three main issue areas on its agenda in order to be able to respond appropriately to any upcoming situation regarding: implementation of the verification system; destruction of chemical weapons and chemical weapons production facilities; and participation in the Convention.

As concerns the verification system, the experience of its operation might call for actions regarding procedures, frequency, the listing of chemicals, etc. The implementation of chemical weapons destruction programs may also give rise to problems. It is already obvious, as the United States and the Soviet Union embark on their destruction programs, that the safe destruction of chemical weapons is more complex than has been generally understood. It can therefore not be excluded that the destruction programs may fall behind schedule due to environmental or technological problems, or due to problems related to local public opinion. Such problems would have emerged after five years of the operation of the Convention. The Conference might then have to decide on a prolongation of the destruction period and whether existing supervision of chemical weapons stocks is sufficient, or if other provisional measures should be taken (e.g., neutralization of stocks pending their ultimate destruction).

Finally, five years after the entry into force of the Convention, all States that want to adhere to it would have had sufficient time to complete all procedures for signature and ratification. At this stage, it should be clear whether any State remaining outside the Convention could cause concerns to any State Party in relation to chemical weapons. The Conference could, in such a situation, recommend measures or actions in order to encourage such States to adhere to the Convention.

The concerns caused by possible problems in the implementation of the system of verification and in the programs of destruction, as well as by insufficient participation in the Convention, relate equally to all States Parties--possessors as well as non-possessors of chemical weapons. All States Parties must, therefore, respond collectively to any situation which endangers the objective of total elimination of all chemical weapons in all States. Decisions that the Review Conference would call for should be taken by consensus. In case consensus cannot be achieved, the decision will have to be taken by a qualified majority. But, if there is to be any substantial adherence to the Convention, there is no room for a veto.

The verification system. The apparent deadlock reached in

discussions on verification--in particular challenge and ad hoc inspections--suggest that it may be time to take a fresh comprehensive approach to the whole system of verification.

First, one has to analyze what should be subject to monitoring under the Convention: chemical weapons and their destruction; chemical weapons production facilities and their destruction; production of chemicals, which in significant quantities have exclusively military use (i.e., Schedule-1 chemicals); production of other listed chemicals; and production capability for all listed chemicals. One can also divide verification concerns along another line: declared sites and undeclared sites.

Challenge. It is obvious that there is a possibility for States to make incomplete declarations of chemical weapons and of their production facilities. The risk of clandestine production and stockpiling of chemical weapons cannot be dismissed. Furthermore, it must be realized that the chemical industry is so vast, flexible and diversified that any complete monitoring of it is unattainable.

There can only be one conclusion: challenge inspection (i.e., the right for any State Party to have an inspection carried out anywhere on the territory of another State Party, without delay, and without the right of refusal) remains a cornerstone for a Chemical Weapons Convention. The basic concept has overwhelming support. It is on the negotiating table, where it can be elaborated and refined. Procedures must be worked out to allay fears regarding interference, "fishing expeditions," intimidation and other abuse. This can be done, as convincingly demonstrated by the British trial inspections.

The hesitations voiced by China are natural and legitimate. It must be made clear, however, that without an effective regime of inspections on request, the Convention is doomed to failure. In the end a choice will have to be made. Nothing in this situation would be more counterproductive than if the United States--the originator of the idea of mandatory challenge--were to end up with a position similar to the present position of China.

Routine inspection. If inspection on request--contributing an overall safety net regarding declared as well as undeclared sites--constitutes one indispensable leg of the verification system, the other indispensable leg will be systematic, routine on-site inspection.

The scope of such inspection is first and foremost declared military installations and the production of dedicated chemical warfare agents on Schedule 1. Thus, chemical weapons stocks, chemical weapons production facilities and their destruction must be systematically monitored. The system for this verification is elaborated in detail and contained in agreed texts in the Annexes to Articles IV and V, and for Schedule-1 chemicals, in Annex I to Article VI.

Except for Schedule-1 chemicals in the very few facilities permitted under the Convention, this heavy verification

effort will cease after the destruction period of ten years, when chemical weapons have been eliminated.

Inspecting the chemical industry. In addition to the indispensable parts of the general system of verification, a mechanism must be established whereby a sufficient degree of confidence is created that the capabilities in the chemical industry are not used in violation of the Convention.

Such a mechanism could concentrate on production of chemicals and be based on declarations, free access and selective inspections. The inspection effort must be seen as non-discriminatory--yet relevant--without causing unmanageable administrative and financial burdens.

The present draft of the Convention covers a part of the chemical industry with systematic routine on-site inspections. The question arises whether this is really useful and necessary. Thus, the current draft provisions establish an elaborate verification system for facilities that produce, process or consume Schedule-2 chemicals above a certain threshold. The verification approach is similar to that established for the control of fissionable materials under IAEA safeguards, which are based on accountancy control, backed up by containment, surveillance and on-site inspections. However, due to the complex nature of chemical industry, the Convention cannot establish a verification system based on material balances. As a result, a select group of facilities are subjected to intrusive and costly verification measures, while at the same time large lacunae are left in the coverage of the system.

Thus, national transfers are not declared, leaving chemical brokers outside of the regime as currently envisioned. Furthermore, production of Schedule-3 chemicals is only subject to monitoring by the provision of data, and production capacity in facilities not producing Schedule-2 chemicals, or producing under a threshold, is left unmonitored and undeclared. Finally, due to a restrictive interpretation of the term "facility," a declared and inspected Schedule-2 facility may consist of one single production unit in a vast plant-site where a number of other production units could very well produce the same chemical.

It may therefore be argued that the scope of verification in the chemical industry is very limited. Nevertheless, one can assume that in the order of magnitude of 1,000 facilities world-wide will be declared under Annex 2 to Article VI. In accordance with paragraphs 9 and 11 of that Annex, all of these facilities shall "promptly" after the entry into force of the Convention receive an initial inspection and have facility agreements concluded within six months.

It may be estimated that the Technical Secretariat would need, on average, 50-100 man-days for the conclusion of a facility agreement. Thus, in order to comply with the current provisions of the draft Convention, the Technical Secretariat might have to spend 50,000-100,000 man-days only to conclude facility agreements pursuant to Annex 2 to Article VI. This burden comes on top of activities under

Articles IV and V, as well as under Annex 1 to Article VI, and has to be achieved within the first six months.

The present text of the draft Convention puts an administratively and financially unmanageable initial burden on the Technical Secretariat, in order to establish a system of verification which anyway is deemed insufficient by a large number of countries.

Proposals that have been made to cover the identified verification gaps, in particular various proposals for ad hoc verification measures, have been made as additions to a system that already seems to entail serious risks of overburdening the Technical Secretariat. The question then arises whether it is not possible, instead, to establish one unified system of verification in the chemical industry, based on a *qualitative* approach, without systematic monitoring. As a result, actual inspection effort could be reduced, at the same time as the scope of possible inspection efforts would be enlarged in terms of facilities and concentrated in terms of activities.

In such a system, States would provide advance notifications of facilities planning production of Schedule-2 and Schedule-3 chemicals above given thresholds, and in addition, declare facilities which produce any other discrete chemical by use of at least one of a number of specially identified chemical conversion processes with an output in excess of a given threshold. This criterion will require the establishment of a Schedule of relevant types of chemical conversion processes together with a numerical threshold for each type of conversion.

Annual declarations should also be provided regarding actual past production, export and import of Schedule-2 and -3 chemicals, as well as any changes to the advance notifications.

All facilities thus declared should be open to receive inspections on short notice. To be practicable, these inspections must have a precise and limited mandate (e.g., to verify that the ongoing activities are in accordance with the advance notifications and to verify the absence of Schedule-1 chemicals at the facility).

To start this process, one element of the current provisions for Schedule-2 verification--namely the so called initial inspection--could be maintained, but over a much longer period than presently foreseen. Thus, over the first several years of the operation of the Convention, all facilities that actually produce Schedule-2 or -3 chemicals over given thresholds would receive at least one inspection. The moot point in this suggestion--as in current proposals for ad hoc inspection--is how and by whom individual facilities shall be selected for inspection. This could be done by random selection, with or without specific weighting criteria. Another possibility is to have inspections, at least in part, carried out on the basis of proposals by States Parties. If the general outline is accepted, this problem could certainly be solved.

The result of the foregoing suggestion would be a much simplified system of verification comprising systematic routine inspection regarding all declared military or near military activities; a manageable amount of "snapshot" random short-notice inspections, carried out in the chemical industry, a vast segment of which will be declared and open to such inspection; and a safety net in the form of inspections on request to enhance confidence and deter against violations.

Must the Chemical Weapons Convention permit the use of chemical weapons? The issue of use of chemical weapons before their complete elimination under the treaty has not advanced in Geneva. The United States maintains its position that retaliatory use of chemical weapons according to reservations made to the 1925 Geneva Protocol is permitted as long as chemical weapons exist. Most other delegations maintain that the unambiguous prohibition of use in Article I of the draft Convention must abrogate any right to second use under the previous legal instrument.

The question of use is still a key issue, with the potential to make or break the Convention. It is clear that any general right to maintain the reservations to the Geneva Protocol would seriously undermine the viability and effectiveness of the Convention and would substantively reduce the prospects for universal adherence.

At the same time, one must regrettably recognize that the present Gulf crisis--with the broad media coverage of the Iraqi threat to use chemical weapons, the Israeli distribution of gas masks and the exercises of the multinational

forces in protective gear--has given considerable political weight to the arguments in favor of maintaining retaliatory capacity. This is so whether or not the United States has ever seriously contemplated bringing CW-munitions to the area, which it probably has not.

It seems that the positions on this issue are irreconcilable. However, one solution might be found that, on the one hand would not compromise the Convention but rather act as an encouragement to join it, and on the other hand would take into account to some extent the concerns of the United States. It would simply be to establish a regime of unconditional non-use of chemical weapons in the relation among States Parties. In that relationship, possible but not very credible violations of the basic undertaking not to use chemical weapons would be met collectively with assistance and sanctions. In relation to non-States Parties, however, the right to retaliate could be maintained until the time set by the Convention for the complete elimination of stocks.

In conclusion, the past year has disclosed serious polarization on a number of key issues in the chemical weapons negotiations. The work has, however, at the same time identified the main issues more clearly than before. This might bring the risk of failure but also offers the opportunity to look at the issues afresh and try new approaches that might be incorporated in one or several package solutions. Ideas like the ones outlined above could contribute to such endeavors. No new proposals, however, can lead to progress if the impression gains ground that important countries lack real interest in achieving a comprehensive and verifiable chemical weapons ban.

Forthcoming Events

* In Washington, DC the American Association for the Advancement of Science (AAAS) Program on Science, Arms Control and National Security will hold a colloquium on CBW proliferation and arms control on 14 December.

* In Geneva, the final session of the CD Ad Hoc Committee on Chemical Weapons under its 1990 chairmanship will take place from 8-18 January 91. The opening plenary of the 1991 CD session will occur on 22 January.

* The 16th Pugwash Workshop on Chemical Warfare will be held in Geneva on 26-27 January 91.

* In Moscow the UN Institute for Disarmament Research (UNIDIR) will hold a conference on measures to increase the effectiveness of the BWC from 28-30 January 91.

* In Washington, DC the Annual Meeting of the AAAS will run from 14-19 February 91. There will be a panel entitled "Chemical and Biological Weapons: Elimination or Proliferation?"

* In Catonsville, MD, on the campus of the University of Maryland Baltimore County, a conference on "The Microbiologist and Biological Defense Research: Ethics, Politics and International Security" will be held on 4-5 April 91. For more information, contact Raymond Zilinskas at (301) 455-3708.

* In Geneva, the Preparatory Committee for the Third Review Conference of the BWC will meet during 8-12 April 91.

Recent Publications

- Alexander, Stewart F, "Bari harbor--and the origins of chemotherapy for cancer," *CML, Army Chemical Review* (US Army Chemical School, Fort McClellan), July 90, pp. 21-26
- Arnett, Eric H, Elizabeth J Kirk and W Thomas Wander (eds), *Technology Advances and the Arms Control Agenda*, Washington, DC: American Association for the Advancement of Science, 1990. See especially pp. 135-158, "Chemical weapons: military significance, prospects for proliferation, and implications of control," including presentations by Matthew Meselson and Sheila Buckley.
- Bernauer, Thomas, "Und Wieder ist ein Jahr vorbei...: Die Genfer Verhandlungen über ein umfassendes Chemiewaffenverbot," *CBW Infodienst*, vol. 1 no. 5 (Oct 90), pp. 1-5
- Carnahan, Burrus, "Constitutional implications of implementing a Chemical Weapons Convention," Science Applications International Corporation, report prepared under contract for the Office of Arms Control, Department of Energy, 4 April 90, 38 pp.
- Cooper, Graham H, "The Chemical Weapons Convention: A Treaty in Store," *ASA Newsletter*, No. 21 (7 Dec 90), pp. 1 & 11-12
- Douglass, Joseph D, Jr., "Beyond nuclear war," *Journal of Social, Political and Economic Studies*, Summer 90, pp. 141-56
- Ember, Lois R, "Chemical weapons disposal: daunting challenges still ahead," *Chemical & Engineering News*, 13 Aug 90, pp. 9-19
- Feinstein, Lee, "Chemical talks slowed by US insistence on 'security stockpile'," *Arms Control Today*, vol. 20 no. 8 (Oct 90), pp. 27-28
- Findlay, Trevor, "Chemical disarmament and the environment," *Arms Control Today*, vol. 20 no. 7 (Sep 90), pp. 12-16
- Goldblat, Jozef, and Thomas Bernauer, "The US-Soviet chemical weapons agreement of June 1990: its advantages and shortcomings," *Bulletin of Peace Proposals*, vol. 21 (1990) no. 4, pp. 355-62
- Grotte, Jeffrey H, Susan D Leibbrandt and Douglas P Schultz, *Inspection Costs for a Multilateral Chemical Weapons Convention: An Analytical Framework and Preliminary Estimates*, report by the Institute for Defense Analyses for the Office of the Assistant to the US Secretary of Defense, IDA paper P-2383, June 90, 116 pp.
- Hansen, Friedrich, "Zur Geschichte der deutschen biologischen Waffen," 1999 (Hamburg: Hamburger Stiftung für Sozialgeschichte des 20 Jahrhunderts), 1990 no. 1
- Isaacs, John, "Banning chemical weapons," *Technology Review*, Oct 90, pp. 33-40
- Kiper, Manuel, "Biologische Waffen: Die Bedrohung wächst," *Mediatas: Zeitschrift für handlungsorientierte Friedensforschung* (Starnberg), vol. 10 (1990) no. 4, pp. 3-5
- Kuplik, Václav, "[Our volunteers and the war]," *Zápisník '90*, 1990 no. 22, pp. 24-28 (in Czech: about the Czechoslovak antichemical defence troops volunteered to Desert Shield, their equipment and their training).
- Ledogar, Ambassador Stephen J, "Steps in the right direction: US and Soviet Union contribute to a universal chemical weapons convention," *NATO Review*, Aug 90, pp. 28-31
- Malekzadeh, Abbas, "Chemical Warfare in the Persian Gulf: US Response," *Iranian Journal of International Affairs*, Winter 89/90, pp. 441-450
- Meselson, Matthew, Martin M Kaplan and Mark A Mokulsky, "Verification of biological and toxin weapons disarmament," in Francesco Calogero, Marvin L Goldberger and Sergei P Kapitza (eds), *Verification, Monitoring Disarmament*, Westview Press, 1990, pp. 149-64
- McNaugher, Thomas L, "Ballistic missiles and chemical weapons: the legacy of the Iran-Iraq War," *International Security*, vol. 15 no. 2 (Fall 90), pp. 5-34
- Morweiser, Hermann, "Zum Tode eines Giftgasenthusiasten: Dr Ambros' Aufstieg beiden IG-Farben," *Pfalz-Forum: Zeitschrift für Frieden, Demokratie, Umwelt*, no. 3 (Dec 90), pp. 25-29
- Rathmell, Andrew, "Chemical weapons in the Middle East: Syria, Iraq, Iran, and Libya," *Marine Corps Gazette*, July 90, pp. 59-67
- Snidle, Giovanni A, "United States efforts in curbing chemical weapons proliferation," *World Military Expenditures and Arms Transfers 1989*, US ACDA, Oct 90, pp. 21-24
- Stock, Thomas, and Jiri Matousek, "The biological and chemical weapons conventions," in Richard Kokoski and Sergey Koulik (eds), *Verification of Conventional Arms Control in Europe: Technological Constraints and Opportunities*, Westview Press for SIPRI, 1990, pp. 264-77
- Timmerman, Kenneth R, "The poison gas connection: Western suppliers of unconventional weapons and technologies to Iraq and Libya," Simon Wiesenthal Center, Los Angeles, released 2 Oct 90, 54 pp.
- Toler, Major I J, "War gases in the Second World War," *British Army Review*, Aug 90, pp. 67-72
- United States of America, Department of the Army, Program Manager for Chemical Demilitarization, *Disposal of Chemical Agents and Munitions Stored at Anniston Army Depot, Anniston, Alabama: Draft Environmental Impact Statement*, Nov 90, 386 pp.
- Zanders, Jean-Pascal, "Le programme américain d'armes chimiques binaires," *GRIP Dossier "notes et documents"* (Brussels: Groupe de recherche et d'information sur la paix), no. 144 (April 90), 47 pp.
- Zanders, Jean-Pascal, "De Chemische bedreiging in de negentiger jaren," *Veiligheid en Strategie* (Brussels: Defensie Studiecentrum), no. 33 (Oct 90), 79 pp. (in Flemish)

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