

CHEMICAL WEAPONS CONVENTION BULLETIN

News, Background & Commentary Relevant to Chemical Weapons & Chemical Arms Control

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COMPLETING THE CHEMICAL WEAPONS CONVENTION: AN INDUSTRY VIEW

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Introduction. Last summer the Western chemical industry tabled a proposal on how best to ensure that commercial facilities are in compliance with a Chemical Weapons Convention. Our verification proposal can be summed up in two words: Anytime, anywhere.

We didn't invent the concept, and we're not the first to suggest it. But for our facilities it is the only sensible way to build and maintain confidence in a CW treaty.

We wrestled for years over where to draw the line on inspections. The truth is you cannot draw a line; you must draw a circle, and all chemical facilities should be inside that circle.

There are tens of thousands of chemical plants around the world, and there will always be nagging questions about "capability." The only hope for overcoming those doubts is to make every facility subject to inspection, no matter how slim the chance that it may ever contribute to a chemical weapons enterprise.

We have talked up our proposal to treaty negotiators in Geneva and to diplomats in many Western capitals; we have talked it up in the press and in industry and academic circles. We think our proposal is honest, simple and straightforward. But the message has not gotten through.

The verification issue is a serious and vexing one, and the opportunity to enhance the Convention may be slipping away. We think our approach can provide a powerful deterrent to potential treaty violators if it is properly constructed and maintained. And it can be done in a way that isn't intrusive, that optimizes the international Secretariat's resources, and that streamlines the potential burden on governments and industry.

Background. All parties agree that verification is the backbone of a treaty banning chemical weapons. For facilities making the small amounts of CW agents permitted for research---known in treaty parlance as Schedule 1 chemicals---verification procedures are fairly well settled. For plants making Schedule 2 chemicals (chiefly the precursors of Schedule 1 compounds), verification procedures have also been generally agreed upon, although some work must still be done on how the inspection procedures are applied. Things get muddled, though, on how the regime will be applied to Schedule 3 compounds (high-volume precursors) and "other relevant facilities."

Several of the delegations to the Geneva talks argue that verification of Schedule 3 and these other relevant facilities must be "narrow" in scope. They define "other relevant facilities" as only those plant-sites that produce specific organic chemicals.

According to its proponents, a narrowly-drawn inspection system has the advantage of reducing the overall number of facilities subject to verification. The resources of the CWC Technical Secretariat, they argue, would not be wasted on inspections of ques-

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tionable value to the CWC. Of greater significance, though, is that this proposal would also shield potentially relevant *government facilities* from inspection.

In June 1991, the US chemical industry was joined by its European, Canadian, Japanese and Australian counterparts in proposing a verification regime for Schedule 3 and other relevant facilities. Our proposal is based on the concept of "free access". All chemical plant-sites producing more than threshold amounts and not otherwise declared under Schedules 1 or 2 would be subject to a minimal declaration requirement. Inspections would be conducted anytime, anywhere; they would be qualitative in nature and limited in duration.

We think our proposal is significant in two respects. First, it greatly expands the *breadth* of the verification regime. Second, it reduces the *depth* of verification activities to a level that is appropriate to facilities that are not directly involved in producing Schedule 1 or 2 compounds. Inspection sites would be selected by the Secretariat, based on nominations made by States Parties or on the Secretariat's own initiative.

It should be noted that at least one national delegation has adopted a less-intrusive inspection methodology for Schedule 3 and other relevant facilities (hereafter termed "Schedule 3 plus" facilities). The Australian draft CWC text, tabled on March 19, adopts a minimal declaration requirement for these facilities, although the scope of the regime is narrow. The Australian proposal calls for "qualitative" inspections of these facilities. The aim of qualitative inspections is to keep intrusions into legitimate commercial facilities to a minimum. Activities that are suspected of violating the CWC could be subject to additional inspection measures. These additional measures are designed to ensure that neither CW agents nor their immediate precursors are being produced.

The Australian draft is a step in the right direction, but unfortunately, no party to the Geneva talks has yet proposed a verification regime for "Schedule 3 plus"

facilities that comes close to the scope of the industry's proposal. We think there are a number of reasons why the industry's verification proposal should be the policy course adopted in the Convention.

Effective Verification Requires a Broad Scope. One of the most troubling aspects of the ongoing discussion of verifying "Schedule 3 plus" facilities is that it proceeds from the assumption that most--if not all--of the facilities *must* be inspected in order to assure compliance with the CWC. Plainly, this assumption is wrong.

Schedule 1 and 2 facilities clearly require continuing attention from the CWC international inspectorate. These are facilities that pose the greatest threat of violating the treaty. For Schedule 1 facilities, the ability to produce weapons grade material has been proven; for Schedule 2 plants the potential is clear.

Although Schedule 1 and 2 facilities are of the greatest immediate interest in verifying the CWC, that fact does not detract from the concern that "Schedule 3 plus" facilities can be converted to CW production. But the sheer number of facilities and the impact on inspectorate resources can be offset by flexibility in the number of plant-sites actually inspected. In effect, every one of the "Schedule 3 plus" facilities *potentially* would be subject to inspection.

A broad-based verification effort makes good foreign and domestic policy for a number of reasons.

Deterrence. Limiting verification activities to a narrow band of chemical plant-sites will permit violators of the CWC to act with impunity. In contrast, a system applicable to every chemical facility, requiring a minimal declaration, provides the Secretariat and States Parties with information they might not otherwise have on facilities which might be converted to CW production. A verification system that requires a minimal declaration of every chemical plant-site, regardless of what it now produces, substantially increases the deterrent value of the CWC.

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Supplement to Challenge Inspections. A broad-based regime of "Schedule 3 plus" facilities will complement the CWC's challenge inspection program. It is conceivable that, absent information on every facility, States Parties will not be able to target a challenge inspection.

More importantly, the industry's verification proposal avoids the high political and economic costs that attend a challenge inspection. In fact, the chemical industry expects that commercial chemical plant sites will rarely be subject to challenge inspections. Open access to our facilities should permit the Secretariat and States Parties to satisfy themselves quickly and efficiently that no illicit activity is occurring. On a practical level, the challenge inspection regime will apply mostly to government facilities.

Secretariat Resources. An argument in favor of a narrowly-drawn regime is that it substantially reduces the number of facilities subject to inspection. As a result, Secretariat and States Parties' resources will be conserved. This argument, of course, is only true if every facility requires an inspection. In fact, every "Schedule 3 plus" facility will not require an inspection. Only those plant-sites selected by the Secretariat would actually host an inspection. As a result, the Secretariat's inspections of "Schedule 3 plus" facilities could be tailored to the available resources. In the final analysis, it is not the quantity of inspections that will decide the effectiveness of the CWC, but the quality of those inspections.

Secretarial resources would also be conserved by conducting the inspections on an incremental basis. Inspections would proceed from qualitative measures to more intrusive methods *only if warranted* by the findings. Thus, inspections would proceed from a "walk-through/talk-through" basis to sampling, record checks, and other quantitative means, only when the initial inspection provoked compliance concerns.

Equity. The number of facilities subject to inspection under either a broadly or narrowly defined "Schedule 3 plus" regime is not substantially different, at least not as far as the US industry is concerned. What is different, however, is that the vast majority of facilities identified under a narrow regime are located in Western countries. It seems curious to us that the very regime with the greatest potential to identify anomalies would apply most specifically to those industries that have not been associated with CW production. Targeting Western industry with a narrowly defined regime will waste resources; those resources could be equitably and efficiently applied to chemical plant-sites across the globe.

National Security Concerns. The principle objection to a broad verification regime arises from the perceived impact it would have on government non-CW facilities

that are involved in national security activities. Several alternatives are available to the Geneva negotiators to ensure that these facilities are not compromised in the CWC:

1. Raise the annual production threshold limits for application of the "Schedule 3 plus" regime.
2. Make a minimal declaration for such facilities, but subject them only to the challenge inspection regime (which they are already subject to anyway).
3. Limit the broad regime to commercial facilities, or facilities which if owned or operated by a private party would be considered commercial in nature.

It should be noted that the purpose of broadly applying a "Schedule 3 plus" regime is to best assure that *commercial* chemical facilities are not being used for CW purposes. This verification regime simply cannot deter or detect violations made by governments that are intent on clandestine CW production, nor is it intended to. That is the reason for challenge inspections.

Prospects for Progress. The US chemical industry has enjoyed a very productive and cooperative relationship with the US treaty negotiators over the years. We think we have made some positive contributions to the CW negotiations, largely because our government has been willing to address industry concerns and proposals. We have always been impressed by the quality and integrity of our nation's negotiators in Geneva.

Nevertheless, recent activity in the Conference on Disarmament indicates a broad based verification regime for "Schedule 3 plus" facilities may not carry the day. Even if that is the case, the Geneva negotiations would do well to adopt a requirement that States Parties transmit basic information on all "Schedule 3 plus" facilities (location, etc.) to the International Secretariat. Inspections need not be held. But the Secretariat would then have the type of information essential to mounting a verification effort, should one later be considered necessary. The CWC should contain an *option* to expand the "Schedule 3 plus" regime if experience dictates that it should. Providing the option up front will remove the inherent difficulty in expanding the verification program beyond Schedule 1 and 2 facilities.

The prospects for completing the CWC have never been greater than they are now. It is the US chemical industry's hope that the current debate over verification of "Schedule 3 plus" facilities does not create a barrier to completing and implementing this vital treaty. ■

WHAT POLICY FOR DISABLING CHEMICALS?

With the Chemical Weapons Convention nearing completion, a long-neglected but crucial question of scope is coming to the fore. Is the treaty to be a complete ban, prohibiting all forms of toxic warfare? Or is it instead to be a partial ban, permitting toxic chemicals of the kinds used for domestic law-enforcement or riot control also to be used as a means of warfare?

There is no disagreement about allowing such domestic uses. They are explicitly permitted in the current draft treaty (CD/1116) where, in regard to toxic chemicals, Article II states that purposes not prohibited under the Convention include "Industrial, agricultural, research, medical, pharmaceutical or other peaceful purposes, domestic law enforcement and riot control purposes". The question is whether the treaty should be made more permissive, allowing chemicals that are used for domestic law-enforcement and riot control also to be used non-domestically, possibly even as war-fighting weapons.

Positions taken on these dual-use chemicals have differed. As to the 1925 Geneva Protocol, most countries expressing themselves have held that all toxic chemicals, including those used for domestic riot control, are prohibited in warfare. Since the time of the Vietnam war, the United States and Australia have taken the opposite view. Current US policy for the Chemical Weapons Convention is to exempt entirely from the definition of chemical weapons, and consequently from all provisions of the treaty, "those chemicals which are not super-toxic lethal, or other lethal, chemicals and which are used by a Party for domestic law-enforcement and riot control purposes" (CD/500 of 18 April 1984). There is a similar exemption, listing the

agents CN, CS and CR as examples of the chemicals to be exempted, in the draft treaty which Australia has just proposed (CD/1143 of 12 March 1992).

Police gases extensively used in war include ethyl bromoacetate and congeners in the first World War; agent CN in Ethiopia (from December 1935), China (from late 1937) and the Yemen (1963); and agent CS in the Vietnam War and the Iraq-Iran war. In each case, these agents were used mainly or entirely not to avoid the use of conventional firepower but in conjunction with it, as a force multiplier. Moreover, starting in World War I, combat use of such gases preceded every significant outbreak of lethal chemical warfare.

The question of scope is made all the more important by the accelerating pace of molecular biology and pharmacology. Using modern biotechnology, law-enforcement and military communities are currently attempting to develop relatively non-lethal but exceedingly potent agents that can disorient or immobilize. A current objective of military research, for example, is to develop relatively non-lethal chemicals with extreme paralytic toxicity for use in disabling chemical weapons. Such chemicals have already found occasional application in domestic law-enforcement, as when police forces have used immobilizing dart-guns.

While few if any countries actually want a treaty that opens the door to the unrestricted use in war of existing and future disabling chemicals, negotiators in Geneva are only now coming to grips with the problem, mainly in the consultations entrusted to the Friend of the Chair on Technical Issues. These discussions are serving to delineate a graded spectrum of provisions,

News Chronology

November 1991 through February 1992

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.

2 November In Belgrade the head of the Medical Department of the Yugoslav Army, Lt-Gen Vladimir Vojvodic [see 27 Sep], tells a news conference that six federal Yugoslav soldiers hospitalized after fighting in the Vukovar region two days previously, had been affected by "volatile non-lethal poison gases, producing only temporary disability". {Tanjug 2 Nov in FBIS-EEU 4 Nov; Radio Belgrade 31 Oct and Tanjug 31 Oct in BBC-SWB 2 Nov}

Later in the day there are further allegations [see 2 Oct] of

Croatian chemical warfare. {Radio Belgrade 4 Nov in BBC-SWB 6 Dec}

3 November In Iraq, the sixth UN chemical inspection [see 22 Oct], UNSCOM 20, comes to an end. Its mission had been to inspect the six declared storage sites distant from those already inspected in the Baghdad region. The team inventoried holdings and arranged for transportation of those chemical munitions that

defining permitted uses of disabling chemicals under the Chemical Weapons Convention. Among these, ranging from highly restrictive to completely permissive, are:

1) *Limitation of permitted purposes to domestic law enforcement and riot control.* This is the provision of the current draft treaty, as stated in Article II. Non-domestic uses, including use as a means of warfare, are thereby prohibited.

2) *Extension of permitted purposes to include specified uses in areas under the clear and direct control of the using state.* This could permit uses similar to riot control, including control of rioting prisoners of war and the protection of facilities, equipment and personnel from civil disturbances, terrorists and paramilitary organizations in areas under the clear and direct control of the using state. None of these uses would appear to constitute the "use in war" proscribed under the Geneva Protocol.

3) *Further extension of permitted purposes to include specified limited uses in areas not under control of the using state.* Such purposes might include the rescue of escaping prisoners, downed aircrews and passengers, and use in situations where civilians are being used to mask or shield attacks in a war zone. While some applications in this category may not be "use in war", others clearly are. The question here is whether the risk of further escalation does not outweigh such limited military benefit as these uses might bring. Use of disabling chemicals on intermingled combatants and civilians in a war zone, for example, could lead to or become the excuse for unrestricted employment in urban warfare.

4) *Total exemption from the Convention.* This is the approach taken in CD/500 and CD/1143. It would remove the exempted chemicals and associated munitions from all prohibitions of the treaty regarding production, possession, transfer and use, including unrestricted use in war.

Under each of the first three approaches above, existing stocks of CN, CS, CR and other such chemicals and corresponding munitions intended for permitted purposes, as long as the types and quantities are consistent with such purposes, could be retained and need not be declared. Any other stocks of such agents and munitions in existence when the treaty enters into force would have to be declared and destroyed in accordance with Articles III and IV.

Surely, neither the United States nor Australia (nor any other country) seeks to legitimize the unrestricted use in war of riot control and law enforcement chemicals. Indeed, US national policy, set forth in a 1975 presidential Executive Order, restricts first use in war of such agents by US forces to specific limited military purposes encompassed in 2) and 3) above.

Somewhere in the spectrum of possible permitted purposes there must be a formulation, short of permitting use as a means of warfare, that the great majority of states can accept as a uniform standard in a treaty designed to benefit all its parties. Total exemption, however, would risk weakening the international norm that restrains use of chemical and biological weapons generally. As society enters the era of biotechnology, the greatest care is needed to ensure that this vital norm is preserved and strengthened.

--The Editors

could safely be moved to Al Muthanna. Unsafe munitions were found at Al-Tuz, Khamisiyah and Muhammadiyat; it is subsequently recommended that they be destroyed *in situ* by explosive demolition. {SZ 23 Oct; S/23268}

Unidentified Austrian inspectors on the team are later quoted -- apparently erroneously -- as saying that they had found large stores of rifle grenades, as well as artillery shell and bombs, containing sarin nerve-gas. {NYT 12 Nov}

4 November In Tokyo, government sources reportedly state that the Chinese government has informed Japan that about 1000 citizens in various parts of China have been harmed since World War 2 by chemical-warfare munitions abandoned by the Japanese Imperial Army.

In China, local witnesses and officials describe the hazards presented by such munitions near Dunhua in Hebei province, northeastern China, and the large-scale operations that had been conducted in two phases between 1947 and 1969 to recover gas

shells in the provinces of Jilin, Heilongjiang and Liaoning and in the autonomous region of Nei Mongol. The officials say that they have not yet received any report from the Japanese government resulting from its survey mission to Dunhua and Shijiazhuang four months previously [see 16 Jun]. {Kyodo 4 Nov in BBC-SWB 6 Nov}

5 November In Moscow, President Gorbachev meets the visiting US defense-industry delegation led by Defense Under-Secretary Donald Atwood. According to a statement later released by the Chairman of the USSR Scientific and Industrial Union, Arkadiy Volskiy, the agenda includes a Soviet proposal for joint elimination of chemical weapons [see also 22 Oct]. {TASS 5 Nov in FBIS-SOV 6 Nov}

Krasnaya Zvezda reports that US specialists and the Chief's Directorate of the USSR Ministry of Defense Chemical Troops have signed an agreement on the construction of a facility in the Udmurt Republic for the dismantling of chemical munitions. But

this is denied next day by the head of the directorate, Professor I Yevstafyev, who says that "no talks are being or have ever been held on this question with US specialists". {KZ 6 Nov in FBIS-SOV 8 Nov}

Interviewed about President Gorbachev's joint elimination proposal, General Yevstafyev (now described as the chief of the General Staff for Chemical Troops) says: "In recent years the two countries actively cooperate in destroying chemical weapons through exchanges of experience and know-how. ... I must say bilateral cooperation with American experts has been useful for our scientists, especially in the areas of risk assessment and production safety. Our side was lagging in that area and is still behind. ... In 1990 and 1991, a number of American firms and state organizations offered us on a commercial basis individual elements of technologies and even turnkey projects for destroying chemical weapons. The offers were interesting, but the matter is we cannot solve the problems on funding these projects, currency payments and the like. All these problems are listed in the state program for chemical disarmament submitted to the government." {Radio Moscow world service 12 Nov in FBIS-SOV 14 Nov}

7 November In Rome, heads of state and government of the NATO countries begin a two-day meeting of the North Atlantic Council, publishing a new *Strategic Concept* that has resulted from a fundamental strategic review initiated in July 1990. The new strategy makes no provision for chemical weapons, the document stating explicitly that "Alliance strategy is not dependent on a chemical warfare capability" [see also 28 Oct]. Further, the document stresses Alliance commitment "to the earliest possible achievement of a global, comprehensive, and effectively verifiable ban on all chemical weapons". It continues: "But, even after implementation of a global ban, precautions of a purely defensive nature will need to be maintained". {*Arms Control and Disarmament Quarterly Review* January 92}

7-8 November In Croatia warnings are broadcast about the dropping of "cobwebs" from Yugoslav military aircraft. There are reports of large numbers of spiders -- small and black with yellow spots -- associated with the webs, giving rise to speculation about biological warfare {Croatian Radio 7 Nov and 8 Nov in BBC-SWB 11 Nov}. Later, the commander of the toxicological service of the Croatian Chief Medical Staff, Dr Franjo Plavsic, broadcasts reassurance that the cobwebs, first observed in August, are neither toxic nor infective, being manufactured from fine threads of polymer {Croatian TV 7 Nov BBC-SWB 11 Nov}; and Yugoslav military authorities describe the material as "something that aircraft drop in order to protect themselves from anti-aircraft defense" {Tanjug 8 Nov in BBC-SWB 11 Nov}.

8 November The President of South Korea, No Tae-u, says in a televised speech that South Korea "will faithfully implement" a policy of not possessing chemical or biological weapons. He also says that his country will not make, store or use nuclear weapons. He calls on North Korea to adopt a similar policy {KBS TV (Seoul) 8 Nov in BBC-SWB 9 Nov; FT 9-10 Nov}. This statement of renunciation precedes the initial working-level contacts that begin three days later in preparation for the fifth round of inter-Korean prime-ministerial talks scheduled for mid-December.

8 November USSR CD Ambassador Serguei Batsanov, interviewed by *Inside the Pentagon*, speaks of the Soviet chemdemil program [see also 5 Nov]. He says that the collapse of the Soviet central government has thrown previous plans into disarray, adding: "The new emerging Russian structure is not yet capable to take over in this area at least. We do need a program, the pro-

gram is not there yet". Talks are in progress between the Soviet central government and the republics about where and what kind of facility could be built, and with what money. He goes on to warn that, although the USSR has not informed the United States officially, it is unlikely to be able to keep to the chemdemil schedule set out in the June 1990 bilateral agreement. As for compliance with the chemdemil obligations of the CWC, he speaks of there being "more breathing space", for even if the treaty is concluded in Summer 1992 entry-into-force is improbable before 1996.

On the possibilities for US-Soviet chemdemil collaboration he says: "What [the US] offered to do is tell us everything it knows about the method of destruction it chose for itself, technology and so on, including the possibility for us to buy a facility, a complete facility. In my view, perhaps that is not the best way to proceed because we do have ... the major part of the technology for the destruction of nerve agents. What we need ... is the supply of certain critical parts of electronic control to make the whole system work more safely and reliably. That would have to be custom made. Then probably filters, environmental protection systems and so on and so forth." Beyond this, he says that there is discussion with the United States about the joint development of a facility for destroying lewisite. {ITP 14 Nov}

8 November NATO heads of state and government, concluding their two-day meeting in Rome [see 7 Nov], issue their *Rome Declaration on Peace and Cooperation*. On CBW, they declare it "essential" that a "global, comprehensive and effectively verifiable" ban on chemical weapons be completed in 1992. The Declaration also welcomes the "positive results" of the Third BWC Review Conference [see 27 Sep], "in particular the decision to explore the feasibility of verification". {*Arms Control and Disarmament Quarterly Review* January 92}

9 November In South Korea, the day after the President's unilateral renunciation of chemical weapons [see 8 Nov], a military spokesman describes North Korean CW capabilities as follows: "North Korea is conducting chemical warfare training. This includes training to combat pollution, chemical reconnaissance training, and tactical unit training. North Korea is equipped with vehicles and facilities for this training. It seems that this is a kind of tactical operational training so that in an emergency, North Korea will be prepared to use its chemical, biological, and radiological weapons." The spokesman states that each North Korean Army corps and division have these training facilities. He continues: "It was understood that, as part of its tactical unit training, North Korea established and is operating a chemical weapons testing ground and an offensive tactical training ground. It was also known that North Korea is holding detoxification training, training on reconnaissance vehicles, and training on detoxification [sic]. ... Over 30 kg of chemicals are supplied to every division every year for training." {*Choson Ilbo* (Seoul) 10 Nov in FBIS-EAS 12 Nov}

9 November In Iraq, the fifth UN chemical inspection, UNSCOM 17, comes to an end {HansC 18 Nov}, having completed its detailed survey of the site at Al Muthanna [see 6 Oct], including the compilation of an inventory of all facilities, munitions, agents and other chemicals. What had been found was substantially in agreement with what Iraq had declared. Agent-stabilization had evidently indeed been a problem [see 11 and 26 Feb]: although the mustard-gas stocks were typically of 90-percent purity, the nerve gas had deteriorated drastically in storage, generally to below 10 percent purity and, in some cases, to below 1 percent. Nerve gases additional to tabun, sarin and cyclohexyl sarin (GF) had been studied, the UNSCOM Executive Chairman later reporting as follows: "Among the salient findings were the discovery

GLOSSARY OF ABBREVIATIONS FOR NEWS CHRONOLOGY

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|---------|--|-------|---|------|---|
| ACR | <i>Arms Control Reporter</i> | DPA | <i>Deutsche Presse Agentur</i> | JDW | <i>Jane's Defence Weekly</i> |
| BBC-SWB | <i>BBC-Summary of World Broadcasts</i> | DTel | <i>Daily Telegraph</i> (London) | JPRS | <i>Joint Publications Research Service</i> (Washington) |
| CBW | Chemical/biological warfare | DW | <i>Defense Week</i> | KZ | <i>Krasnaya Zvezda</i> |
| CD | Conference on Disarmament | ECN | <i>Export Control News</i> | MN | <i>Moscow News</i> |
| CD/ | CD document | FAZ | <i>Frankfurter Allgemeine Zeitung</i> | NYT | <i>New York Times</i> |
| C&EN | <i>Chemical & Engineering News</i> | FBIS | <i>Foreign Broadcast Information Service</i> (Washington) | Obs | <i>Observer</i> (London) |
| CN | <i>Current News Early Bird</i> | FedR | <i>Federal Register</i> | S/ | UN Security Council document |
| CQ | <i>Congressional Quarterly (Weekly Report)</i> | FR | <i>Frankfurter Rundschau</i> | ST | <i>Sunday Times</i> (London) |
| CR | <i>Congressional Record</i> | FT | <i>Financial Times</i> (London) | SZ | <i>Süddeutsche Zeitung</i> |
| CW | Chemical warfare | Guar | <i>Guardian</i> (London) | TL | <i>Times</i> (London) |
| DB | <i>Deutscher Bundestag</i> | HansC | <i>Hansard Commons</i> | Tag | <i>Tageszeitung</i> (West Berlin) |
| DD | <i>Defense Daily</i> | IHT | <i>International Herald Tribune</i> | STel | <i>Sunday Telegraph</i> (London) |
| DerS | <i>Der Spiegel</i> | Ind | <i>Independent</i> (London) | WP | <i>Washington Post</i> |
| DN | <i>Defense News</i> | ITA | <i>Inside the Army</i> | WT | <i>Washington Times</i> |
| | | ITP | <i>Inside the Pentagon</i> | WSJ | <i>Wall Street Journal</i> |

of small quantities of the nerve agents sec-butyl sarin, *n*-butyl sarin and ethyl sarin, although Iraq has disputed the identification of the latter two agents". {S/23268}

9 November The mass outbreak of illness among Albanians in Kosovo province, Yugoslavia, the year previously [see 20-22 Mar 90] is attributed to collective hysteria rather than to Serbian poison [see 3 Aug 90] in an article in the medical journal *Lancet*. The article reports clinical observations and analyses of blood samples taken during an international on-site investigation organized by the Society for Endangered Peoples (Germany) and the Paris-based International Federation for Human Rights. {*Lancet* 9 Nov}

10 November In Croatia, during the fighting in Vukovar, "chemical agents" are being used by Croatian forces, according to Radio Belgrade [see also 2 Nov]. {Radio Belgrade 10 Nov in BBC-SWB 12 Nov}

11 November In the UN General Assembly, two resolutions on CBW are adopted without vote by the First Committee. The first, on measures to uphold the authority of the 1925 Geneva Protocol, welcomes, among other things, "initiatives of the United Nations ... aimed at ... removing the threat of chemical weapons use" {A/Res/46/35B}. The second resolution, on the CWC negotiation, "strongly urges the Conference on Disarmament, as a matter of the highest priority, to resolve in the forthcoming months outstanding issues so as to achieve a final agreement during its 1992 session". It also "calls upon all States to consider declaring their intention to become original States Parties to the convention so as to ensure its early entry into force, its effective implementation and its universal character" {A/Res/46/35C}.

A third resolution, calling upon all BWC States Parties to participate in the information and data exchanges agreed to at the Third Review Conference of the BWC, and requesting the Secretary-General "to render the necessary assistance and to provide such services as may be required for the implementation of the decisions and recommendations" of the conference, is adopted by the Committee the following day. {A/Res/46/35A}

11-15 November In Iraq, a 4-person UNSCOM mission holds

detailed technical discussions with Iraqi counterparts on chemdemil issues, with particular emphasis on the direct involvement of Iraq in the chemdemil process and on safety aspects. Topics include an Iraqi design for a mustard-gas incinerator, the hydrolytic destruction of nerve gas, and the breaching and draining of munitions. {S/23268}

The UNSCOM team is led by Special Commissioner Professor B C Barrass of the UK. It selects separate sites at Muthanna for the destruction operations for mustard and nerve agents. {UN press release 26 Nov}

12 November Today is the due date for Iraq to declare to the United Nations the data required under the long-term disarmament monitoring scheme imposed by Security Council resolution 715 (1991) [see 11 Oct].

12 November In the Soviet Union, *Izvestiya* publishes a commentary by its Sverdlovsk (Yekaterinburg) correspondent on the 1979 epidemic of anthrax in the region [see 21-23 Oct]. The correspondent, A Pashkov, refers to recent publications in the USSR of the suggestion that the anthrax originated from a local Defense Ministry research institute [see 2 Oct], describing this as "something that, in my opinion, nobody had ever doubted in Sverdlovsk". He goes on to deplore the reported disappearance of "almost all primary medical documents" on the epidemic and the reluctance of local officials to seek clarification of what had happened. His article indicates that some of these officials are now becoming less reticent; and that *Izvestiya* is still pursuing its inquiries. {*Izvestiya* 12 Nov in JPRS-UMA 17 Dec}

Next day, *Literaturnaya Gazeta* again publishes on the subject [see 2 Oct], reporting that, stimulated by its earlier reports, a Deputy's inquiry had been sent to President Yeltsin who had "assigned the handling of this problem" to Aleksey Yablokov, state adviser on ecology and health care and a corresponding member of the USSR Academy of Sciences. Yablokov had told *Literaturnaya Gazeta*: "I will see to it that this matter is taken to its logical conclusion. The first step, which we have already taken, was to contact the KGB." {*Literaturnaya Gazeta* 13 Nov in JPRS-TND 2 Dec}

A week later, *Komsomolskaya Pravda*, too, publishes a commentary on the epidemic by its Sverdlovsk correspondent, who,

among other things, raises the possibility of the epidemic having been caused by release from Military Base 19, not of a weapon strain of anthrax bacteria, but of "an unfinished vaccine specially activated for use as an effective antidote in combat conditions". {*Komsomolskaya Pravda* 20 Nov in JPRS-TAC 11 Dec}

12 November In Bolivia, the Foreign Ministry publishes a communique on the Mendoza Commitment [see 5 Sep] which says that "Bolivia reasserts its support for the agreement by stating that the Mendoza Commitment is compatible with the main objectives of its international policy" {EFE 12 Nov in FBIS-LAT 13 Nov}. The Mendoza commitment obliges its parties "not to develop, produce or acquire in any way, stockpile or retain, transfer directly or indirectly, and not to use chemical or biological arms"; it also commits them to becoming original signatories of the CWC. [See CWCB no. 14 for an unofficial translation of the Mendoza Commitment.]

13 November In the German Bundestag, Parliamentary State-Secretary Klaus Beckmann informs the Economics Committee that, according to UNSCOM information now received from the UN [see 11 Oct], 24 German companies had been involved in the Iraqi development and production program for CBW weapons and rocket technology; these companies "took up a comparatively large part" of the UNSCOM list of suppliers. {DerS 18 Nov in FBIS-WEU 19 Nov}

The Economics Committee is holding a hearing on the present status of the projected amendments to German export laws [see 7 Jun], including the proposed authorization of telephone-tapping by the Customs Criminal Institute {*Handelsblatt* 14 Nov}. It is also considering legislation recently proposed by the Federal Government to establish a Federal Export Office {DB 5 Nov}.

13 November The UNSCOM Chairman's Special Adviser, Johan Molander, speaks of the work of the Special Commission in Iraq at a luncheon briefing of the Committee for National Security (CNS) in Washington. He addresses the implications of the UNSCOM work for the CWC negotiation, including its dependence on short-notice mandatory challenge inspections. Asked about the new unit for information assessment in the UNSCOM executive office and whether it affords a model applicable to the international verification of multilateral arms-control agreements, he speaks of the unit as, *inter alia*, a bridge to national intelligence communities. {CNS transcript}

13 November In the US Congress, the conference report on the FY 1992-3 National Defense Authorization legislation deletes without explanation the \$1 million which the Senate Armed Services Committee had written in for a study of "non-lethal force" [see 19 Jul] {House report 102-311}. The Committee had asked for a study that would "identify existing technologies or those that could quickly be employed" as substitute for lethal weapons, the study to focus on the "strategy, policy, force structure, and operational issues that would relate to a future program" {Senate report 102-113}.

On chemdemil, the report extends the US stockpile-elimination deadline from 30 January 1997 to 31 July 1999 [see 23 Apr].

Further, the report requires the President to submit to the Congress a detailed annual report on the proliferation, not just of missiles as at present, but also of NBC weapons. {House report 102-311}

14 November In Japan new export controls enter into force on certain dual-use technologies potentially applicable in the production of chemical weapons. {Kyoto as in CN 8 Oct}

14 November The Hungarian government announces that it has introduced stricter export controls on materials necessary for the manufacture of CBW weapons. {MTI 14 Nov in FBIS-EEU 15 Nov; Hungarian Radio 14 Nov in BBC-SWB 20 Nov}

14 November In Britain, a television documentary reports that, according to Zimbabwean sources, the Rhodesian Central Intelligence Organization had, with South African assistance, mounted several clandestine CBW operations during the 15 years of guerrilla warfare following the Rhodesian unilateral declaration of independence in 1965. {Obs 10 Nov}

14 November President Bush extends the state of emergency he had declared in Executive Order No. 12735 promulgating new measures against the proliferation of chemical and biological weapons [see 16 Nov 90] so that the measures may continue in force. The President declares that the "proliferation of these weapons continues to pose an unusual and extraordinary threat to the national, security and foreign policy of the United States". He also declares that the "United States played a leadership role in the Biological Weapons Convention (BWC) Review Conference in September 1991 [see 9 and 27 Sep] that reaffirmed the BWC as the critical international measure against biological weapons". {CR 14 Nov pp. S16745-6; FedR 15 Nov p. 58171}

15 November In Germany, the Bundestag debates the proposed establishment of a Federal Export Office [see 13 Nov]. {DB 15 Nov pp. 4880-4}

16 November In the Soviet Union -- where the coordinating role of central government is fading rapidly, with the elimination by now of all but a few USSR ministries -- President Yeltsin of Russia issues a decree, *On Liberalization of Foreign Economic Activities in the Territory of the RSFSR*, in effect abandoning the counter-proliferation export controls of the USSR, calling for a new and "considerably" shorter list of controlled goods. {AFESS-PRESS Report no. 45}

16 November In the United States, the *Washington Times* reports that administration officials are disputing a United Nations conclusion that Iraq had not actually weaponized biological agents despite its extensive biological-weapons research program [see 25 Oct]. It quotes an unidentified senior US official: "We know Saddam Hussein has a weaponized biological warfare program and that he has produced agents". {WT 16 Nov}

17 November In Iraq a new UN inspection team, UNSCOM 21, arrives on a combined chemical and biological inspection to search for undeclared weapons or facilities. The Executive Chairman of UNSCOM is quoted as saying: "Iraq had a very advanced military offensive program in biological research, so it is peculiar we have not found a real production plant [for BW weapons] yet" [see 16 Nov]. The team will visit sites identified by national intelligence agencies {IHT 18 Nov}. It will also, apparently, visit sites suggested by a US firm of psychic consultants, PSI Tech {WT 19 & 20 Nov}. The team is led by Major Karen Jansen of the US Army {NYT 17 Nov}.

18 November Iran, according to the German magazine *Der Spiegel* reporting a dossier prepared earlier in the month by the Federal Intelligence Service, may now possess the plans for the Libyan poison gas factory at Rabta [see also 10 Apr]. The dossier reportedly says that Iran is now trying "to build a copy of that plant", which will probably be supplied with precursor chemicals from the pesticide factory in Qazvin [see 30 Jun], and that it might be producing "modern chemical weapons" before the end of the decade. {DerS 18 Nov in FBIS-WEU 19 Nov}

18 November In Germany, *Der Spiegel* reports that, at the end of October, the Federal Intelligence Service had warned the Chancellery that Islamic states are engaged in a "gigantic armament" and that Germany "represents a main focus" in the procurement efforts {DerS 18 Nov in FBIS-WEU 19 Nov}. Government spokesman Dieter Vogel subsequently confirms that the Chancellery had been warned about German firms continuing to aid the nuclear, biological, chemical and missile programs of Iran, Syria, Libya and Iraq {DPA 18 Nov in FBIS-WEU 19 Nov}.

18 November In Geneva, the CD Ad Hoc Committee on Chemical Weapons reconvenes after its recess for the UN General Assembly First Committee [see 15 Oct and 11 Nov].

18 November In the US Congress, the conference report on the FY 1992 Defense Appropriations legislation prohibits funding for any further transportation of chemical weapons to Johnston Atoll, or for any study of the feasibility of doing so, and fences funding for procurement of chemdemil equipment for Umatilla [see 10 Oct] and Anniston [see 24 Jul] until Phase III of the chemdemil Operational Verification Test at Johnston Atoll [see 27 Feb] has begun, currently scheduled, after slippages, for May 1992. The conferees also require that a revised schedule and life-cycle cost report on the whole US chemdemil program be submitted by 1 February 1992. {House Report 102-328; CR 18 Nov pp. H10468 and H10476}

18 November In the US Senate, the Foreign Relations Committee is reportedly preparing to investigate allegations that China is violating the Biological Weapons Convention {Guar 19 Nov}. The allegations apparently originate in the Administration's still-unreleased report on arms-control compliance which the Congress now requires by law each January; a report which is said to state that China has begun to export biological weapons {WP 18 Oct}. That charge, however, is said to have been deleted from the final version of the report prior to the 15-17 November visit to China by Secretary of State James Baker {WP 18 Nov}.

19 November The US Defense Department agrees to a settlement with the Foundation on Economic Trends, which had sued it in 1987 for not complying with environmental laws in its Biological Defense Research Program (BRDP). The settlement commits the Department to preparing and making public detailed environmental assessments at six research sites: the Biological Aerosol Test Facility and the Baker Laboratory at Dugway Proving Ground, the US Army Medical Research Institute of Chemical Defense at Aberdeen Proving Ground, the Salk Institute Government Services Division at Swiftwater, Pennsylvania, and facilities of the Walter Reed Army Institute of Research in Washington and Maryland. It also obliges the Department to prepare environmental assessments for all current or proposed BRDP projects involving BL-3 and BL-4 containment within the United States. {Foun-

ation on Economic Trends press release 19 Nov; AP as in CN 20 Nov; *Nature* 28 Nov; *Science* 29 Nov; *New Scientist* 30 Nov}

19-21 November In Pakistan, the US Under-Secretary of State for international security, Reginald Bartholomew, arriving from China, has talks with Pakistani leaders on, among other matters, chemical weapons {FT 21 Nov, Ind 25 Nov}. He leaves for New Delhi where his talks next day with External Affairs Minister Madhavsingh Solanki also cover chemical weapons as well as the nuclear matters which are the main reason for his tour {All-India Radio 23 Nov in BBC-SWB 25 Nov}.

19-22 November The US Army Chemical Research, Development and Engineering Center (CRDEC) convenes its annual scientific conference on chemical defense research at Aberdeen Proving Ground, Maryland. The 188 presentations include one from the French CW-defense laboratories at Le Bouchet describing the genetic modification of *E coli* bacteria so as to make them capable of producing a snake venom toxin on pilot industrial scale. There are also CRDEC presentations on opiate and opiate-antagonist mixtures that, in animals, induce deep sedation with minimal respiratory depression. {CRDEC Scientific Conference on Chemical Defense Research, abstract book}

20 November At the USSR Foreign Ministry's press briefing in Moscow (largely concerned with the appointment of Eduard Shevardnadze as Minister of External Relations), chief spokesman Vitaliy Churkin speaks of the private company recently established in the Soviet Union offering chemdemil via underground nuclear explosions [see 10 Apr] -- a reference, presumably, to the International Chetek Corporation {see *Bulletin of the Atomic Scientists* Jan/Feb 92}. He says that the "competent state organs", without whose permission such operations cannot be carried out, have not considered the question, though he does say that the country's scientific research establishments are studying a variety of chemdemil possibilities, including the use of nuclear explosions. {TASS International Service 20 Nov in FBIS-SOV 21 Nov}

20 November The US General Accounting Office reports that cost-growth and schedule-slippage in the US chemdemil program are likely to continue, and that the currently postulated completion date of July 1999 [see 13 Nov] is "overly optimistic". The report recommends that the Secretary of the Army be asked to provide the Congress with more informative annual reports on the program, and that he also be asked to determine whether faster and less costly chemdemil technologies have emerged since the original decision to use the reverse assembly, high-temperature incineration disposal process. {GAO/NSIAD-92-18}

20-22 November In Seoul, US Defense Secretary Dick Cheney attends the 23rd annual US/South-Korean Security Consultative Meeting. His department has just released a study by its Defense Intelligence Agency, *North Korea: The Foundations for Military Strength*, which states that North Korea "has at least eight industrial facilities that can produce chemical agents"; that North Korea "has the capability to produce" blood, mustard and nerve gases; and that up to 250 tonnes of these agents could be stockpiled for delivery systems that include aircraft, artillery, multiple rocket launchers, mortars, FROG and Scud missiles. [See also 9 Nov]

When these statements are quoted some six weeks later by *Jane's Defence Weekly*, the North Korean Central News Agency

at once dismisses them as "unfounded false propaganda", adding: "Our republic ... has never produced chemical weapons which would bring a scourge upon mankind, nor has it any factory producing such weapons". The agency goes on to state that ten poison-gas factories and a large number of chemical weapons exist in South Korea. {JDW 11 Jan 92; [North] Korean Central News Agency 10 Jan 92 in BBC-SWB 13 Jan 92}

21 November In the United States a panel of the National Research Council releases a report on cryofracture chemdemil technology concluding that this alternative technology cannot be developed in time to help the United States meet the 2002 chemdemil deadline set in the June 1990 bilateral agreement with the Soviet Union. {DN 25 Nov; C&EN 2 Dec}

21-22 November In Washington the American Association for the Advancement of Science convenes its sixth annual colloquium on science and security, 'Science, Technology, and Security in the New International Order'.

22 November In the Soviet Union, chemdemil specialist S Yufit of the Ecological and Social Union proposes in *Izvestiya* that the chemdemil plant at Chapayevsk -- for which "the academic expert appraisal and assurances as to its complete ecological safety ... undoubtedly correspond to reality" -- be sold to Iraq. {*Izvestiya* 22 Nov in FBIS-SOV 10 Dec}

22-23 November In Rome, the Institute for International Affairs hosts a conference on Verification of Chemical Weapons Disarmament and Chemical Weapons Production Facilities: Strategic and Legal Problems.

23 November In the Soviet Union, *Izvestiya* publishes a further article by its Sverdlovsk correspondent [see 12 Nov] in which he reports learning from a former counterintelligence general, Andrey Yakovlevich Mironyuk, that information obtained in April 1979 from KGB equipment installed in a laboratory at Sverdlovsk military post 19 indicated that there could have been an accidental discharge which might have led to the anthrax epidemic.

General Mironyuk himself, as reported, had been in no doubt: "We knew precisely that the military laboratory was the source of the contagion. And its leaders tried to conceal this fact. Only after they were pinned to the wall did the specialists confess. It was then that an entire program to disinform the public in the country and the world was developed. Mail, communications, and the press were taken under control. They worked with foreign intelligence."

According to General Mironyuk (reported as now being "retired and engaged in commercial activity in Dnepropetrovsk"), the laboratory had soon afterwards been removed, in "several Tupolev aircraft", to the vicinity of Irkutsk {*Izvestiya* 23 Nov; Ind 29 Nov}. However, a commission of inquiry subsequently established by the local administration there later reports finding no information to confirm this claim {TASS 8 Dec in FBIS-SOV 11 Dec; *Izvestiya* 11 Dec}.

24-27 November In the Soviet Union, at the Polytechnical Institute in Perm, the UN Environment Program and the Peace Research Institute Oslo join in a symposium on Conversion and the Environment. There is a paper on the proposal for German-Soviet chemdemil cooperation [see 14 Aug].

25 November The US Senate votes 86-8 to approve a plan for transferring up to \$500 million from the defense budget to Soviet aid. The plan, which now has both Congressional and Administration support, would authorize the president to use up to \$400 million in Fiscal Year 1992 defense funds in assistance to the Soviet Union or to any Soviet republics that invest in dismantling nuclear or chemical weapons and comply with arms-control treaties. {CR 25 Nov pp. S18002-14, S18038-44; WP 26 Nov; IHT 27 Nov; CQ 30 Nov}

This legislation subsequently becomes the *Soviet Nuclear Threat Reduction Act of 1991* (the Nunn-Lugar Act).

26 November In the UK House of Commons, the Select Committee on Trade and Industry starts hearings in its inquiry into British defense-related exports to Iraq since 1984, releasing further written evidence received from the Department of Trade and Industry, including corrections to earlier testimony [see 25 Jul, UK]. Among the new evidence is disclosure that, besides sodium cyanide, some 65 tons of sodium sulphide and 3.6 tons of tris-ethanolamine -- both of them chemicals on the Australia-Group CW precursor control list -- had been exported from the UK to Iraq since 1988. {FT 5, 22 & 27 Nov; Ind 23 Nov}

26 November The US Congress passes legislation that would impose mandatory import and other sanctions on countries and companies that contribute to the spread of CBW weapons. The provisions, latterly in HR 3409 [see 3 Oct] and largely unchanged, are now attached to a bill adjusting unemployment benefits, HR 1724, the conference report on which is agreed by both houses and sent to the President. {CR 26 Nov pp. H1401-16; CQ 30 Nov & 7 Dec}

27 November In the US Senate, a bill (S 2124) is introduced by Senator Bumpers which would bar imports into the United States from companies certified by the President as having knowingly provided assistance or support to missile or NBC weapons programs in Iraq or North Korea. The bill had previously been proposed as an amendment to the 1992 Defense Appropriations legislation [see 18 Nov] but had been dropped in conference for jurisdictional reasons. {CR 27 Nov p. S18700}

28 November In India, the Lok Sabha is told by Minister of State for External Affairs Eduardo Faleiro that India and Pakistan have agreed to convene a meeting of experts to exchange views on a bilateral agreement to ban the development, production, deployment and use of chemical weapons [see also 31 Oct and 19-21 Nov]. {Press Trust of India 28 Nov in BBC-SWB 29 Nov}

29-30 November In Brussels, the Centrum voor Polemologie of the Vrije Universiteit Brussel, and the Groupe de Recherche et d'Information sur la Paix (GRIP), joined this time by the UK-based Information Network on CBW, convene their 3rd Annual Conference on Chemical Warfare, entitled 'The Second Gulf War and the CBW Threat'. The closing address is by the Minister for Economic Affairs, Vice Prime Minister Willy Claes. {*Knack* 11 Dec}

30 November In Iraq, the first UN combined chemical and biological inspection, UNSCOM 21 [see 17 Nov], comes to an end. It had included a revisit to Salman Pak [see 7 Aug], a side visit to Al Muthanna to witness a successful Iraqi chemdemil trial at the modified pilot plant [see 15-22 Aug], as well as short-notice inspections of some 13 undeclared sites designated by the Spe-

cial Commission. CBW-weapons-related activities were not found at any of the challenged sites. {S/23268}

The team, which comprised 18 people from 11 countries, inspected 16 designated sites looking mainly for concealed CBW-weapon stores. At one site, a sugar factory in Mosul, the team found items of metal-working machinery for manufacturing casings for 250- and 500-gauge chemical bombs.

During the inspection there had been Iraqi challenges to the team's right to conduct aerial surveys of the designated sites and take photographs. But after an official protest by Chief Inspector Karen Jansen, Iraqi authorities had become cooperative for the remainder of the inspection. {UN press release 11 Dec}

2 December In the United States, an inter-agency Nonproliferation Center is being built up at the headquarters of the Central Intelligence Agency, according to unidentified administration officials speaking to the *Washington Times*. They say that the Center is to have a professional staff of about 100 people, a third from outside the CIA, grouped into three sections: inter-agency intelligence coordination, analysis, and clandestine operations. They reportedly say, too, that the Center is tasked not only to monitor the spread of NBC weapons and ballistic missiles, but also to control it: "Our mission, in essence, is to stop this kind of activity". The Center had been formed on 17 September {WT 3 Dec}. A CIA spokesman subsequently confirms the reporting {DW 9 Dec}.

4 December Israel has announced that it will be an original signatory of the CWC, according to US Assistant Secretary of State Richard Clarke speaking at the Washington Institute for Near East Policy [see also 2 Oct]. {Transcript of proceedings}

4 December The UN Security Council receives from the Secretary-General a second report by the Executive Chairman of the Special Commission [see 25 Oct], this one covering the period up to the end of UNSCOM's first six months of work. The report states that commencement of the chemical-weapons destruction process "early in 1992 can ... be confidently expected".

The report also refers to information very recently received from Iraq, which may be the declarations of data required under Security Council resolution 715 (1991) [see 12 Nov]; a resolution of which Iraq has not yet expressed its formal recognition. {S/23268}

Like the previous report, this one makes no mention of Iraqi tear-gas munitions [see 25 Oct]. However, in a commentary published earlier by the leader of the UNSCOM CBW working group [see 2 May], Dr John Gee of Australia, it had been reported that "about half" of the 46,000 chemical-filled munitions declared by Iraq were CS mortar bombs, all of them said by Iraq to have been damaged or destroyed during the war. The remainder -- some of them also damaged -- comprised about 11,000 122-mm nerve-gas rockets, 12,500 155-mm mustard-gas artillery shell, 1500 mustard-gas bombs, 336 alcohol-filled binary nerve-gas bombs, and 14 similarly filled missile warheads. {*Peace & Disarmament News* (Australia, Dept of Foreign Affairs and Trade) October}

4 December In the United States, President Bush signs HR 3409, CBW counter-proliferation sanctions legislation [see 26 Nov], into law as PL 102-182. {C&EN 16 Dec; ECN 18 Dec}

4 December The heads of state of the five Andean Group countries -- Bolivia [see 12 Nov], Colombia, Ecuador, Peru and Venezuela -- meet in Cartagena de Indias, Colombia, to sign a declaration renouncing weapons of mass destruction [see 25 Jul]. In paragraph 4 of the declaration they "call on the countries that possess technology for the production of weapons of mass destruction to strengthen in an effective manner systems to monitor the transfer of such technologies". In paragraph 6, they "announce their intention to become original signatories" of the CWC. {CD/1114}

6 December In the CD Ad Hoc Committee, the Netherlands submits a paper on the possible use of retrospective immunochemical detection in verifying allegations of mustard-gas use. The methods described are based on reaction products of sulphur mustard with DNA and proteins, a competitive enzyme-linked immunosorbent assay or an immunofluorescent technique being used to detect monoclonal antibodies raised against such reaction products, the lifetimes of which may be days to months. {CD/CW/WP.376}

6 December In Bulgaria, General Leonid Katsamunski, the chief investigator of the murder-by-poisoned-umbrella of Georgi Markov in London in 1978 [see 6 Jun], announces the discovery of a 1977 Politburo decree saying that "all measures can be used to neutralize enemy emigres". He states that the Interior Ministry had been ordered to act on this decree in September 1977. {Ind & TL 7 Dec}

6 December In Chile, *La Epoca* reports that a judicial investigation is under way into the production and use of sarin by the secret service DINA. The report speaks of spray-bottles being used to discharge the nerve gas into the faces of at least three (unidentified) victims, their deaths having subsequently been attributed to heart attacks. {*La Epoca* (Santiago) 6 Dec}

6 December The UN General Assembly adopts without vote three resolutions on CBW that the First Committee had recommended in November [see 11 Nov]. {CD/1115}

7 December The British newspaper *The Guardian* publishes a report from correspondent Pierre Salinger, who had just visited the Rabta chemical plant in Libya [see 5 Mar] under the authority of Foreign Minister Ibrahim Bechari. He had observed signs of fire damage [see 13 May 90] and writes: "One of the company executives walking with us said it would be impossible to produce poisonous gas in the plant. He pointed out that there were no glass-enclosed areas or any decontamination sections. {*Guar* 7 Dec}

10 December In the Soviet Union, *Izvestiya* publishes a further article by its Sverdlovsk correspondent [see 23 Nov] in which he reports yet more interview-derived information about the 1979 anthrax epidemic, the general tone of the article being that Military Post 19 had unquestionably been responsible for the epidemic. The Deputy Chief for Scientific Research at the establishment, G Arkhangelskiy, reportedly still believes that there had been sabotage. The former chief epidemiologist of the Chkalovskiy Rayon, Vladimir Nikolayevich Perlin, is quoted as supposing there to have been two accidents: one the initial release, the other when subsequent clean-up operations remobilized deposited anthrax spores.

The article reports, further, that Russian deputies are now pressing for conversion of the establishment to production of antibiotics, blood substitutes and heart medications. American visitors are expected soon, in connection with negotiations on the delivery of equipment. {*Izvestiya* 11 Dec}

10 December In the US House of Representatives, CIA Director Robert Gates [see 2 Oct] tells the Armed Services Committee that "over the next decade, we expect chemical-tipped, mobile short-range missiles to become widespread from North Africa through South Asia". He warns, too, that weapons scientists and engineers emigrating from the Soviet Union may find a market for their expertise in Third World countries {WP 11 Dec}. In a subsequent interview with the *Los Angeles Times*, he speaks of the possibility of unemployment and food shortages forcing Soviet NBC weapons experts to sell their skills abroad {IHT 2 Jan}.

10-12 December The Australia Group [see 21-23 May] meets in Paris. Finland and Sweden participate for the first time. The UK Foreign & Commonwealth Office had previously said that the meeting "was expected to focus on the harmonization of national export controls on CW dual-use equipment, NBC defensive equipment and BW-related items and equipment". It had said, too, that it was British policy to encourage wider membership of the Group.

At the meeting the Group reportedly moves closer to final agreement on a set of controls on chemical processing and manufacturing equipment, with only three or four countries unable yet to pledge to implement the controls. The meeting is also reported to have agreed that all member countries must immediately apprise other members of any denial of an export license for any item on an Australia-Group list. {ECN 18 Dec}

The meeting is followed by a second seminar [see 14 Dec 90] on CBW export controls attended by representatives of the central and eastern European countries and the Soviet Union. The UK Foreign & Commonwealth Office explains that "the aim of these seminars is to keep participants informed of developments in the Australia Group and to encourage them to bring their export controls up to similar standards". {*Notes on Arms Control* 1991 no. 9}

11 December The Belgian government is due to decide on the purchase of 100,000 gas masks for re-equipment of the armed services, whose present masks date from the 1950s. The new mask has been developed by NV Engicom, a subsidiary of NV Vandeputte, with funding from the Ministry for Scientific Research. The decision has been postponed several times in the past {*De Standaard* 11 Dec}, and it is again postponed {*De Standaard* 13 Dec}.

13 December In Seoul, at the 5th round of inter-Korean high-level talks [see 8 Nov], North and South Korea sign their *Agreement on Reconciliation, Nonaggression, Exchange and Cooperation* which calls for, among other things, "phased reductions in armaments, including the elimination of weapons of mass destruction and surprise attack capabilities" [see also 31 May 90]. This agreement to have an agreement on mass-destruction weapons is to be followed by the opening of separate talks on weapons later in the month. {NYT 14 Dec; ACR 12-91 p. 457.B.81}

13 December In the Soviet Union, the Red Army newspaper *Krasnaya Zvezda* quotes Maj-Gen Igor Yevstafyev [see 5 Nov]

forecasting that the costs of the Soviet chemdemil program will rise to 28 billion rubles in 1992 as compared with the present estimate of 5.4 billion rubles [see 22 Oct]. According to the general, the Soviet Union faces practically no problems in ensuring safe storage of its chemical weapons (which has thus far cost only 12-16 million rubles per year), since, because of their robust design, the weapons can be stored for another 30-40 years. {KZ 13 Dec in FBIS-SOV 16 Dec; TASS 13 Dec in BBC-SWB 16 Dec; Postfactum 11 Dec in FBIS-SOV 16 Dec}

13 December In Finland the fourth 4-month international training course on CW verification methods sponsored by the Ministry for Foreign Affairs [see 20 Feb 90] comes to an end. There have been 15 participants since the courses began, in February 1990, from Brazil, Burma, Cuba, Egypt, India, Indonesia, Iran, Kenya, Mexico, Nigeria, Pakistan, Sri Lanka and Yugoslavia.

16 December In the CD Ad Hoc Committee, Finland and the Netherlands submit another joint working paper [see 6 Jun], this one on the accreditation of laboratories conducting verification analyses and performing other work for the Technical Secretariat of the CWC international organization. {CD/CW/WP.378}

19 December The British government finally publishes its list of countries for which export applications are "subject to special consideration for strategic and proliferation reasons". The list names the following 33 countries: Afghanistan, Albania, Algeria, Angola, Argentina, Brazil, Bulgaria, Burma, China, Cuba, Czechoslovakia, Egypt, Estonia, Hungary, India, Iran, Iraq, Israel, Latvia, Libya, Lithuania, Mongolia, North Korea, Pakistan, Poland, Romania, Somalia, South Africa, South Korea, Soviet Union, Syria, Taiwan and Vietnam. {HansC 19 Dec}

20 December Albania completes its domestic legislative preparations for acceding to the 1972 Biological Weapons Convention. {ATA 21 Dec in BBC-SWB 24 Dec}

20 December In Geneva, the CD Ad Hoc Committee on Chemical Weapons [see 18 Nov] breaks for its end-of-year recess, which is to end on 3 January [see 21 Aug].

20 December The US Defense Department decides to postpone construction of chemdemil facilities at Umatilla Depot Activity [see 18 Nov] and Pine Bluff Arsenal, deferring the requisite budgeting at least until Fiscal Year 1994. {ITA 27 Jan}

23 December In Libya, for the chemical-weapons project at Rabta [see 10 Apr and 7 Dec], the Revolutionary Council had authorized payment of up to ten times the normal market price for requisite materials and equipment, so *Der Spiegel* reports, with attribution to the Federal Intelligence Service (BND). The magazine also reports that the BND had for many years been kept informed of the international activities of German companies such as Salzgitter Industriebau GmbH [see 1 Aug] and WET [see 11 Mar], including their apparent involvement in Libyan and Iraqi CW armament, by officers of the companies; people whom the magazine names {DerS 23 Dec}. The BND issues a denial of certain other parts of the *Spiegel* article {FR 24 Dec}.

28 December In Panmunjom, three days into the inter-Korean talks on the elimination of weapons of mass destruction and related matters [see 13 Dec], South Korea revises a proposal it

had previously put forward by deleting from it provision for the elimination of chemical and biological weapons {Yonhap News Agency 28 Dec in BBC-SWB 30 Dec}. Three days later, the two sides initial a joint declaration on denuclearizing the Korean peninsula {Central Broadcasting Station home service 1 Jan 92 in BBC-SWB 4 Jan 92}.

30 December In Minsk, the leaders of the 11 members of the new Commonwealth of Independent States sign an *Agreement on Strategic Forces*. In Article 2 they "undertake to observe international agreements of the USSR". In Article 3 they "recognize the need for united command of strategic forces and the preservation of unified control over nuclear weapons and other weapons of mass destruction of the armed forces of the former USSR". {TASS 31 Dec in FBIS-SOV 31 Dec}

31 December In the UK new export control regulations come into force to replace the existing ones. The changes include an extension of the scope of export control in regard to "tear gases and riot control agents". {SI 1991/2666, Customs and Excise, *The Export of Goods (Control) Order 1991*}

5 January 1992 German Foreign Minister Hans-Dietrich Genscher, writing in *Welt am Sonntag*, calls for completion of the CWC by mid-1991. {FR 6 Jan}

6 January In Geneva, the CD Ad Hoc Committee on Chemical Weapons reconvenes to conclude its 1991 work, its session being scheduled to end on 20 January.

6 January In Washington, recommendations by a high-level Pentagon advisory panel considering the future of the US nuclear arsenal appear in the press. The panel, chaired by former Air Force Secretary Thomas Reed, reportedly advocates using the arsenal, cut to perhaps one half of its post-START-I level [see 31 Jul 91], not only to deter nuclear aggression, but also as a deterrent to Third World countries which might possess chemical or biological weapons. {FT 7 Jan}

8 January In Sofia the trial begins of the former head of Bulgarian intelligence, General Vladimir Todorov, charged with destroying secret files on Georgi Markov [see 6 Dec 91]. Former Deputy Interior Minister, General Stoyan Savov, had been charged with removing the files from Bulgarian State Security archives, but had been found shot dead two days before the trial; two months previously he had said he would reveal details about Georgi Markov's death at the trial. {DTel 7 Jan, IHT 9 Jan, TL 21 Jan}

9 January Ambassador Serguei Batsanov, Chairman of the CD Ad Hoc Committee on Chemical Weapons and now head of the Russian CD delegation, reaffirms at a press-conference in Geneva that the chemical weapons stocks and production facilities of the former Soviet Union had for some time been located exclusively on Russian territory [see also 22 Oct]. {FT 10 Jan}

11-12 January In Geneva, the Pugwash CBW Study Group holds its 19th workshop. There are 47 participants from 18 countries. The focus of the meeting is on how to ensure that the CWC is completed satisfactorily during 1992.

Protecting the right of States Parties to use disabling chemicals such as tear gas for domestic law-enforcement purposes is of particular concern to many participants, who caution strongly,

however, against the idea of excluding such chemicals altogether from the scope of the treaty: better, in their view, to rely on the 'general purpose criterion' (just as for any other dual-use chemical having application in purposes not prohibited under the CWC) rather than legitimizing, through exemption, one form of toxic warfare. {*Pugwash Newsletter* January}

12 January In Baghdad, senior Iraqi officials meeting with UNSCOM members say that Iraq "would not make any further declarations" {NYT & WP 5 Feb}. The UNSCOM plan, approved by the Security Council, for the long-term monitoring of Iraq's dual-use industries requires such declarations [see 4 Dec].

13 January In Kazakhstan, Aziya press agency reports that thousands of people living near the Aral Sea have signed a petition calling for closure of what they have been told is, and has been for the past five decades, a BW-weapons test range on Vozrozhdeniye Island. {Mayak Radio Network (Moscow) 13 Jan in FBIS-SOV 15 Jan}

15 January In the US Senate, Director of Central Intelligence Robert Gates testifies on proliferation questions. He says: "Today, over 20 countries have, are suspected of having, or are developing nuclear, biological, or chemical weapons and the means to deliver them". He warns again [see 10 Dec] of the potential 'brain drain' from the former Soviet Union: "We estimate that nearly one million Soviets were involved in the nuclear weapons program in one way or another, but probably only a thousand or two have the skills to design nuclear weapons. A few thousand have the knowledge and the marketable skills to develop and produce biological weapons." He speaks of BW programs in Iraq, Syria and Libya, and of CW programs in these countries and Iran, India and Pakistan as well.

About Iraq, he says: "If UN sanctions are relaxed, we believe Iraq could produce modest quantities of chemical agents almost immediately, but it would take a year or more to recover the CW capability it previously enjoyed. The BW program also was damaged, but critical equipment for it, too, was hidden during the war. Because only a small amount of equipment is needed, the Iraqis could be producing BW materials in a matter of weeks of a decision to do so."

About Libya, he says: "We estimate that the production facility at Rabta has produced and stockpiled as many as 100 tons of chemical agents. The Libyans have cleaned up the Rabta plant, perhaps in preparation for the long-awaited public opening of the facility to demonstrate its supposed civilian pharmaceutical purpose [see also 7 Dec]. But they have yet to reconfigure the plant to make it incapable of producing chemical agents. ... For several years the Libyans have made a concerted effort to build a BW facility, but this has not progressed very far. We believe they need assistance from more technically advanced countries to build one and make it work." {Prepared written testimony; IHT & WP 16 Jan}

During the subsequent question-and-answer period, Director Gates speaks as follows about the CBW programs of the former Soviet Union: "We are beginning to see on the biological front ... that the new government in Russia takes much more seriously than apparently its predecessor our concerns about continuing biological programs. And we are beginning to get some information that suggests that those programs are being turned off. They are turning their attention on the chemical side to the destruction of chemical weapons problem. They now have some

-- we estimate something like 40,000 tons of agent, chemical agent. A good deal of that is old, represents a safety hazard, and they're working on technologies for its destruction." He says, too, that all the chemical-agent storage sites are in Russia [see also 13 Sep 91 and 9 Jan].

And he says: "We know that in a small village or small town near St Petersburg, that the local residents were able to get a BW -- what we think was a BW program closed -- plant closed down because several people fell ill". {Federal Information Systems Corporation transcript}

15-22 January US Under Secretary of State Reginald Bartholomew heads an inter-agency mission to Moscow, Kiev, Minsk and Alma-Ata for talks with Russian and other CIS authorities on the \$400 million which the US Congress has made available under the Nunn-Lugar Act to help the former Soviet Union begin destroying its nuclear and chemical weapons [see 25 Nov 91]. Other topics on his agenda include urging authorities in each of the four capitals to develop and implement counter-proliferation export controls, including CW-related ones [see 16 Nov 91]. {Izvestiya 25 Jan in FBIS-SOV 29 Jan; and prepared statement of Reginald Bartholomew before the Senate Armed Services Committee 5 Feb}

20 January The CD Ad Hoc Committee on Chemical Weapons concludes its work for 1991, adopting a report to the CD which, in Appendix I, includes a new draft CWC and, in Appendix II, additional material on which consensus is still emerging.

The main novelties of the new 'rolling text' over its predecessor [see 4 Sep 91] are: in Article II, a set of definitions relating to the chemical industry -- "production of a chemical", "processing of a chemical", "complex", "plant site", "plant", "unit", etc; in Article VI Annex 1, some further refinement of the verification regime for Schedule-1 chemicals; in Article VIII, provisions for the international organization's Scientific Advisory Board; and in Article IX and associated parts of the Protocol on Inspection Procedures, language -- albeit heavily square-bracketed and qualified with footnotes -- on the procedure for challenge inspections.

In Appendix II there is new material on: possible provisions for 'old chemical weapons'; modifications to the verification regimes for Schedule-2 and Schedule-3 chemicals; on 'capable' facilities (now called 'other relevant facilities'); on the composition, procedure and decision-making of the Executive Council; and on the financing of the international organization. {CD/1116}

20 January The British government, responding to questions in Parliament about the range of its CBW-information-sharing arrangements with other countries, states: "Regular liaison and exchange of information takes place between the UK and the USA, as well as other allies, in the field of chemical and biological defence under a number of general defence agreements. A UK-USA-Canada memorandum of understanding on chemical and biological defence was signed in 1980, addressing exchange of information on chemical and biological defence research and development, and on production and procurement of chemical and biological defense equipment." {HansC 20 Jan}

21 January At the US chemdemil facility on Johnston Atoll in the Pacific [see 29 Jul 91] there is a shutdown of operations following rupture of the kiln used for destroying the explosive components and aluminum casings of M55 rockets. There had been no release of agent {US Army Anniston Army Depot news release

no. 4-92}. Operations resume, after repairs, in late February {DW 24 Feb}.

21 January In Geneva, the CD reconvenes for its 1992 session, the first part of which is due to end on 27 March. The second and third parts are scheduled for 11 May to 26 June and 20 July to 3 September respectively. {CD/PV.605}

The CD agrees to re-establish the Ad Hoc Committee on Chemical Weapons, now to be chaired by Ambassador Adolf Ritter von Wagner of Germany. It mandates the Committee to "continue and intensify, as a priority task, the negotiations on a multilateral Convention on the complete and effective prohibition of the development, production, stockpiling and use of chemical, weapons and on their destruction with a view to achieving a final agreement on the Convention during 1992". {CD/1120; CD/PV. 606}

22 January In Mozambique, armed forces radio alleges that, on 16 January in the region of Ngungue, near the South African border, RENAMO forces had used chemical weapons in a clash with government troops. A team of South African military and civilian medical doctors visits Maputo to investigate the causes of death; the team takes away samples for analysis when it leaves {Radio Mozambique 22 Jan in FBIS-AFR 23 Jan}. The next day, the alleged use of chemical weapons is categorically denied by the head of the RENAMO delegation to the Rome peace talks, Raul Domingos {Radio Mozambique 23 Jan in FBIS-AFR 28 Jan}. More detailed allegations, including a purported eye-witness account by a hospitalized casualty referring to at least five dead and ten injured, are then published by the government Information Agency. This account tells of an airburst projectile making people below it "crazy"; some had said they felt severe chest pains, becoming tired and thirsty, vomiting when they subsequently drank water; others had spoken of difficulty in seeing; and one had reported vomiting blood {Radio Mozambique 24 Jan in FBIS-AFR 28 Jan; Guar 28 Jan}.

22 January In Germany the government decides to reduce from 54 to 34 the number of countries on its 'H list' -- those destinations to which its counter-proliferation export controls are applied {ADN 22 Jan in FBIS-WEU 23 Jan; FR 23 Jan}. The new list comprises: Afghanistan, Albania, Algeria, Angola, Argentina, Brazil, Bulgaria, Burma, Cambodia, China, Cuba, Egypt, India, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Mauritania, Mozambique, North Korea, Pakistan, Qatar, Romania, Saudi Arabia, Somalia, South Africa, Syria, Taiwan, Vietnam, Yemen and Yugoslavia [see also 19 Dec 91].

22 January In the US Senate, Director of Central Intelligence Robert Gates testifies before the Armed Services Committee on threats to US interests worldwide over the remainder of the decade [see also 15 Jan]. Among these threats he identifies: "The proliferation of nuclear, chemical, and biological weapons and related delivery systems. Over 20 states have or are acquiring weapons of mass destruction. These arsenals are often in the hands of unstable and unreliable governments. The most dangerous external effect of the Soviet break-up is to add fuel to this fire of proliferation -- at least potentially."

Later in his testimony he says: "Most major Middle Eastern countries have chemical weapons development programs, and some already have weapons that could be used against civilians or poorly defended military targets. Most have not yet equipped

their delivery systems to carry weapons of mass destruction. Over the next decade, however, we expect such weapons to become more widespread from North Africa through South Asia if international efforts fail to curtail this proliferation." On Iraq, in particular, he says: "The infrastructure for the production of chemical weapons was hit hard [by 'Operation Desert Storm'] and will need rebuilding. But most of the production equipment was hidden before the bombing started. If UN sanctions were relaxed, Iraq could produce modest quantities of chemical agents almost immediately. The biological weapons program was damaged, but critical equipment was hidden during the war. The Iraqis could produce BW materials in a matter of weeks of their decision to do so." He says that Syria "apparently is seeking assistance from China and Western firms for an improved capability with chemical or biological warheads"; that Libya "has produced and stockpiled as many as 100 tons of chemical agents"; that both India and Pakistan "have pursued chemical weapons". And he speaks of the recently formed Nonproliferation Center [see 2 Dec]. {Prepared statement}

Also testifying is the Director of the Defense Intelligence Agency, Lt-Gen James R Clapper, Jr, USAF. He says that "some 20 countries already have or are attempting to acquire nuclear, biological, or chemical weapons". He expresses concern that the list could grow, adding: "Many Third World countries are developing dual-use technologies that could be diverted for the production of such weapons. These include technologies associated with nuclear power, pesticides, chemical fertilizers, and vaccines." More specifically, he says that, in Libya, "production of chemical-warfare agents is still ongoing at Rabta" [see 7 Dec]. {Prepared statement}

23 January In Germany the Bundestag passes legislation amending German export laws and establishing a Bundesausfuhramt (Federal Export Office) [see 15 Nov 91] to replace and expand the Bundesamt für Wirtschaft in Eschborn. Under the legislation, illegal arms exports are to be punishable with prison terms of up to five years and confiscation of all profits. The Zollkriminalinstitut (customs police) will be empowered, until the end of 1994, to tap the telephones or open the mail of anyone suspected of violating the export laws, provided public prosecutors have been informed and judicial approval obtained. The bill, originally submitted to the legislature nearly a year previously and blocked on the issue of communication intercepts [see 7 Jun 91], now moves to the Bundesrat where its approval is, this time around, regarded as no more than a formality.

The Bundestag calls on the Federal government to seek EC-wide guidelines for arms exports, without which, some Members had said, the new legislation may become worthless within the post-1992 Single European Market. {DB 23 Jan pp. 6083-6106; APN 23 Jan in FBIS-WEU 23 Jan, SZ 24 Jan in FBIS-WEU 24 Jan; *Das Parlament* 31 Jan; NYT, WP & WT 24 Jan}

23 January In the CD Ad Hoc Committee on Chemical Weapons, the chairman presents his plan, based on extensive prior consultation, for the organization of work during the 1992 session, prefacing it as follows: "By re-establishing the ... Committee ... on the very first day of the 1992 session [see 21 Jan], the Conference on Disarmament has given an additional indication that this year's work should not follow a 'business as usual' pattern. In order to succeed within the timeframe set by the mandate it is imperative that compromise solutions to the major outstanding issues be found early in the 1992 session so as to al-

low for the completion of the Convention in time. Therefore, it will be necessary to continue the work of the Ad Hoc Committee in a very flexible and focussed way, allowing time for formal meetings as well as for informal and private consultations. It seems advisable not to try and tackle all the outstanding issues in formal meetings at the same time, but rather consecutively within established timeframes, leaving time spans in between to enable delegations to ask for new instructions."

He then describes his workplan as follows: "at the outset of our work, six 'Friends of the Chair' (FoC) will assist the Chairman of the Ad Hoc Committee in the resolution of the remaining outstanding issues. So far, there is a need to have 'Friends' dealing respectively with legal and organizational questions; issues related to Article XI; technical questions; old and abandoned chemical weapons; the Seat of the Organization; and the Executive Council. In addition, it is proposed to establish a Working Group on verification in the chemical industry. In order to guard against unforeseen interruptions of work, it is planned to assign deputies to the Working Group Chairman and most Friends of the Chair." The Chairman himself, as did his predecessors, will conduct consultations on challenge inspections.

His assignments thus far are as follows -- industry-verification Working Group Chairman: Ron Morris of Australia (deputy: Takuji Hanatani of Japan); FoC on legal issues: Anil Wadhwa of India; FoC on Article XI: José Felicio of Brazil (deputy: Rafael Grossi of Argentina); FoC on technical issues: Graham Cooper of the UK (deputy: Mervin Hamblin of Canada); FoC on old chemical weapons: Ambassador Brotodiningrat of Indonesia; FoC on the Seat: Ambassador Kamal of Pakistan; and FoC on the Executive Council: Ambassador Tóth of Hungary (deputy: Sylwin Gizowski of Poland).

He expects the decision on the seat of the organization to be reached by the end of May. {CD/CW/WP.380}

24-27 January In Basel, the Swiss government convenes a symposium on Chemical Industry and Disarmament. There are two days of plenary presentations, discussions and workshops followed by a day of visits to nearby pharmaceutical production facilities owned by Sandoz, Hoffmann-LaRoche and Ciba-Geigy. The symposium participants -- some 80 people, from Algeria, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Costa Rica, Cuba, Czechoslovakia, Finland, France, Germany, Hungary, Indonesia, Iran, Japan, Kenya, Libya, Malaysia, Mexico, Mongolia, the Netherlands, Nigeria, Oman, Peru, Poland, Portugal, Qatar, Russia, South Korea, Spain, Sweden, Switzerland, Syria, Turkey, the UK, Uruguay, the USA, Venezuela, Yugoslavia and Zimbabwe -- are mostly from Geneva CD delegations or from the chemical industry, with a few specialists from industry associations and research institutes.

26 January Libyan leader Moammar Gadhafi, in an interview published in a British newspaper, denies Libyan possession of chemical weapons and states that his country is ready to consider outside inspection of alleged nuclear and chemical weapon sites. {Obs & WP 26 Jan}

27 January In Iraq, a UN team arrives to conduct the seventh chemical inspection. It will be checking to see whether the bomb-casing-plant at Mosul [see 30 Nov 91] has been moved to Muthanna as previously ordered by UNSCOM, and observing an Iraqi demonstration of a hydrolytic destruction process for nerve gas [see 15-22 Aug 91]. The team, comprising 18 people, is led

by Heinz-Dieter Jopp of Germany. It is met, and harassed, by a crowd of demonstrators. Police look on and do not intervene {IHT, FT, WP & WT 28 Jan; WT 29 Jan; HansC 11 Feb}. The UN Security Council rebukes Iraq next day {IHT 29 Jan}.

Also arriving in Baghdad is a special UN mission to discuss Iraq's failure to submit the declarations of data required under the UN long-term compliance-monitoring scheme [see 12 Jan]. {FT 28 Jan}

27 January In Russia, a state committee for elimination of chemical weapons is to be created in early February, according to Postfactum news agency. Attributing "sources close to the Russian Foreign Ministry", the agency reports that the committee is to include specialists from the former departments responsible for development and production of the weapons; that Russia is to do the main part of the chemdemil work; and that Ukraine, Belarus, Kazakhstan and Uzbekistan have agreed to make some financial contribution. {Postfactum 27 Jan in FBIS-SOV 29 Jan}

27-28 January In Bonn the Friedrich-Ebert-Stiftung convenes an international conference on 'The Verification of the Biological Weapons Convention: Problems and Perspectives.' There are 21 participants, from Britain, Canada, France, Germany, Sweden, Switzerland and the United States.

28 January In India, a spokesman of the External Affairs Ministry, in a response to allegations made by the Director of US Central Intelligence during recent Congressional hearings [see 15 and 22 Jan], states that India does not have a chemical weapons program. {All-India Radio, Delhi home service 28 Jan in BBC-SWB 1 Feb}

28 January The Mozambican Government issues an appeal to "all countries and non-governmental organizations" for "assistance in its efforts to determine the nature of the weapon" allegedly used a fortnight previously by RENAMO forces near the South African border [see 22 Jan]. A Foreign Ministry communique states that after the weapon had exploded, releasing a thick smog, "our forces then started to develop strange reactions and abnormal sensations, namely skin irritations, burning, deep thirst and weakness. Subsequently, some soldiers died; others were rendered paralyzed, mentally affected; and others lost their sight and hearing abilities." {Washington, DC Embassy of the Republic of Mozambique press release}

The next day, South African medical personnel once again visit Maputo, this time "within the framework of the investigation", as Mozambican authorities put it; "UN technicians" are involved as well. The government later announces that Britain, the Netherlands and Switzerland have also expressed an interest in participating. {Radio Mozambique 31 Jan in FBIS-AFR 31 Jan}

29 January President Yeltsin of Russia makes a televised address to the nation on policy in the field of arms limitation and reduction. He confirms Russian succession and commitment to all of the bilateral and multilateral accords in the field entered into by the USSR.

As to the 1925 Geneva Protocol, he announces that "Russia withdraws its reservations concerning the possibility of using biological weapons as a response". He had prefaced this by saying that "Russia favors the strict implementation" of the 1972 Biological Weapons Convention and referring to "a lag in implementing the convention".

On chemical weapons he calls for completion of the CWC in 1992. He says that Russia adheres to the 1990 bilateral agreement with the USA, but states that "the timescale envisaged therein for the destruction of such weapons requires certain amendments". He continues: "All of the chemical weapons of the former USSR are on the territory of Russia, who takes responsibility for their destruction. We are preparing an appropriate state program [see 27 Jan]. We are open for cooperation in this matter with the United States and other interested countries."

He expresses support for the efforts of the Australia Group. He says that his government is establishing a system to control exports of "dual use materials, equipment and technology that could be used to create nuclear, chemical and biological weapons or combat missiles", adding: "We are going to establish very close cooperation and coordination between all participating CIS states on these matters" [see also 15-22 Jan]. {Teleradio-kompaniya Ostankino 29 Jan in FBIS-SOV 29 Jan; CD/1123}

29 January In Germany, *ARD-Tagesthemen* carries a report that, until 1965, the former GDR had been dumping large amounts of World War II poison gas and other weapons residues into the Baltic in the vicinity of Bornholm Island. {FR 31 Jan}

30 January In the United States, a joint venture by Lockheed, Olin and Babcock & Wilcox newly incorporated in Delaware as International Disarmament Corporation submits an unsolicited proposal to the Defense Nuclear Agency that would capture some or all of the \$400 million voted by Congress for assisting the destruction of the nuclear and chemical weapons of the former USSR [see 15-22 Jan] {AD 31 Jan}. Other major defense contractors -- Raytheon and Hughes Aircraft (a subsidiary of General Motors) -- are pressing similar proposals {WSJ 6 Feb}.

31 January President Yeltsin of Russia, in a pre-recorded interview telecast in the United States on *ABC 20-20*, asked if "you are still making chemical and biological weapons", had responded as follows: "It's a very difficult question. Therefore, I want to save this for my one-on-one talk with the US President. I can give only one promise. In the next few months we're going to take steps to discontinue this kind of activity in accordance with international agreements on chemical and biological weapons." {ABC transcript}

31 January The first-ever summit meeting of the UN Security Council issues a communique in which, on chemical weapons, the 15 heads of state and government "support the efforts of the Geneva Conference with a view to reaching agreement on the conclusion, by the end of 1992, of a universal convention, including a verification regime, to prohibit chemical weapons". The communique also "underlines the need for all member states to ... prevent the proliferation in all its aspects of all weapons of mass destruction", the members of the Council committing themselves "to working to prevent the spread of technology related to the research for or production of such weapons and to take appropriate action to that end". {FT 1-2 Feb}

31 January British Prime Minister John Major, speaking immediately after the UN Security Council summit meeting in New York, announces that the UK will strengthen its export controls on materials that could be used in biological warfare. {FT 1-2 Feb}

1 February President Yeltsin, during his talks with President Bush at Camp David, pledges to halt Russian research into biological weapons [see also 29 and 31 Jan], according to senior adviser Dmitri Volkogonov speaking to the press after the meeting. Reporting him, the *Washington Post* writes of this Russian BW research as "an area where he suggested past military efforts had crossed the line set out by international treaties". The *Post* continues: "He said Yeltsin disclosed that 'a number of centers and a number of programs dealing with this issue have been closed', and said that 'from 1992 [forward], there will be no [military] budget allocations coming to that program'" [see also 23 Nov 91 and 13 and 15 Jan]. {WP 2 Feb}

3 February In Moscow, the Chief of the Chemical Troops of the CIS Armed Forces, Col-Gen Stanislav Petrov, speaking to the press about the chemdemil program, [see 27 and 29 Jan], says that the two-year-old draft for the projected USSR state program, currently under examination in the Russian Federation Supreme Soviet needs amendment, above all so as to create a state commission responsible for choosing locations for the requisite chemdemil facilities. He also urges the signing of an intergovernmental agreement [between the Republics] on the sharing of the material and financial expenditures that will be involved. {TASS international service 3 Feb in FBIS-SOV 4 Feb}

3 February From Kurgan, in Russia, comes a broadcast report summarizing public health and other ecological concerns recently expressed about 123 tonnes of "extremely toxic chemicals" that had been buried during the early 1970s in marshy woods on the border of Sverdlovsk and Kurgan oblasts by soldiers from the former Urals Military District. {Radio Rossii 3 Feb in FBIS-SOV 5 Feb}

3 February Russian Deputy Prime Minister Yegor Gaydar tells a press conference in Moscow that the Russian Government is setting up a special body for political control over arms exports [see 29 Jan]. The body will include the heads of foreign policy, industry, economics, finance and security departments. {Radio Rossii 3 Feb in FBIS-SOV 4 Feb}

3 February In Mozambique, a RENAMO deserter states at a news conference in Maputo that the chemical attack which had reportedly been mounted against government forces some three weeks previously [see 28 Jan] had been organized by 50 soldiers specially trained at Phalaborwa camp in the Transvaal and supplied with oxygen masks and "poison filled" munitions that could be fired from a gun. He says, too, that they had been intending to conduct further chemical attacks against four Maputo suburbs. {Capital Radio 3 Feb and Radio Maputo 3 Feb in FBIS-AFR 5 Feb}

5 February The UN Security Council conducts its bimonthly review of the UN embargo against Iraq and decides to retain economic sanctions, its president (US Representative Thomas Pickering) issuing a statement on behalf of the Council which refers to, among other things, "serious evidence of Iraqi non-compliance over its programs for weapons of mass destruction" {WP & WT 6 Feb}. According to news media, the Council had had before it a report in which UNSCOM Executive Chairman Rolf Ekéus described Iraq's failure to comply with the long-term compliance-monitoring scheme [see 27 Jan]. The report was also said to have chronicled Iraq's continuing efforts to conceal the extent of

its clandestine nuclear program, and to have noted that, whereas Iraq was known to have possessed ten different types of CW munitions in its stockpile, UNSCOM inspectors had so far been able to find the plants used for making but two of them. {NYT & WP 5 Feb}

5 February In Washington officials say that Robert Gallucci, currently UNSCOM Deputy Chairman, is to be named to a senior State Department post as 'nonproliferation czar', with Michael Newlin, former US ambassador to the IAEA, replacing him at UNSCOM. {WP 5 Feb}

5 February In the US Senate, Under Secretary of State Reginald Bartholomew and Assistant Secretary of Defense Stephen Hadley testify before the Armed Services Committee on their recent visit to the former Soviet Union [see 15-22 Jan]. Chemical weapons had not been a primary focus of the mission, though Secretary Hadley observes that "there is an opportunity to use the [Nunn-Lugar] funds" for chemdemil.

Responding to a question about one of the preconditions for release of Nunn-Lugar funds, namely Presidential certification that recipients are in compliance with the 1972 Biological Weapons Convention, Secretary Bartholomew recalls that, in each successive Arms Control Compliance Report filed with the Congress [see 15 Feb 91], the administration had stated its view that the Soviet Union was conducting an offensive biological-weapons program in violation of the treaty; and he says that the administration had continued to raise the matter directly with the USSR. He adds: "one of the things that we hope may have changed is that we may get some affirmative responses out of Yeltsin and his team, and we are pursuing it" [see also 1 Feb]. {Federal Information Systems Corporation transcript}

6 February The CD finally achieves consensus on agreeing to the requests from 39 non-member states to participate in the work of the Conference and its subsidiary bodies.

South Africa, for the first time, is among them. Nigeria states the following: "There is every reason to believe that South Africa possesses chemical weapons. There must be an assurance that as an observer, they will not only contribute constructively towards elaborating the Convention but also recognize the paramount need for universality. For that reason, my delegation will not block consensus this time around, as all potential violators should be brought into the negotiating process." {CD/PV. 610}

6 February The outgoing chairman of the Ad Hoc Committee on Chemical Weapons, Ambassador Serguei Batsanov of Russia, presents to the CD his final report [see 20 Jan], with its new draft CWC. He says, having done so: "The time has come in the negotiations to separate the primary from the secondary, the priority tasks from issues which can be put off to a later time without harm to our goal or to one's positions, to separate real from fancied interests and real concerns from bargaining chips. ... I venture to express the view that at this stage special attention and efforts are demanded by such issues as challenge inspections, verification in commercial industry, the future of export control measures, the composition of the executive council and the problem of so-called 'old' chemical weapons." {CD/PV.610}

6 February In Iraq, the seventh UNSCOM chemical inspection [see 27 Jan] comes to an end. Speaking to reporters, Chief

Inspector Jopp subsequently says that, although German companies had, like other Western firms, been directly involved in the Iraqi CW-weapons production program "there had been no participation whatsoever of the German chemical industry", only of German construction firms. {FAZ 14 Feb}

7 February The text of the Mendoza Commitment, signed by Argentina, Brazil and Chile, [see 5 Sep 91] is transmitted to the CD together with the information that, in addition to Uruguay and Bolivia [see 12 Nov 91], Paraguay has acceded to the agreement. {CD/1126}

The total number of states that have declared their intention of becoming original signatories of the CWC now exceeds 42 [see CWCB no. 14 pp. 20-22].

8 February In Chicago, the American Association for the Advancement of Science presents its Hilliard Roderick Prize in Science, Arms Control and International Security jointly to Robert P Mikulak of the US Arms Control & Disarmament Agency and Will D Carpenter of Monsanto, citing "their tireless efforts to overcome the technical and diplomatic obstacles to international agreements on chemical weapons". {AAAS news release 14 Jan}

11 February In Azad Kashmir, Pakistani troops use tear gas to prevent a march of hundreds of Kashmiris organized by the Jammu and Kashmir Liberation Front from crossing the border into India [see also 5 Apr 91]. Concealed Indian troops on the far side of the border are reportedly under orders to shoot anybody crossing over. {TL 12 Feb}

11 February In the United Nations Secretariat, where new Secretary-General Boutros Boutros-Ghali is instituting a major reorganization, Vladimir Petrovsky, formerly USSR Deputy Foreign Minister, is named as one of two new Under Secretaries General for political affairs. He is to be responsible for dealing with the Security Council and the General Assembly, and for handling disarmament and major peacemaking problems. {WP 12 Feb}

11 February A US General Accounting Office report is released by its requester, Senator John Glenn, critical of the Army's BW vaccine program, in particular the failure of the contract work at the Salk Institute's Swiftwater facility to provide vaccines for 'Operation Desert Storm/Shield'. {GAO/NSIAD-92-33; *Philadelphia Inquirer* 12 Feb; DD 12 Feb; DW 18 Feb}

12 February Russian Foreign Minister Andrey Kozyrev addresses the CD in Geneva. He says that completion of the CWC is the most important and urgent task facing the Conference. He advocates the conversion of former chemical weapons production facilities rather than their complete destruction. He speaks of the problems of eliminating the 40,000 tonnes of toxic agents in Russia [see 30 Sep 91 and 15 Jan] and says that, although his country has the requisite technology at its disposal, "international cooperation and some help from abroad could ... be instrumental in guaranteeing the ecological cleanliness of the destruction process and in creating incentives among the local population for having such facilities nearby". {CD/PV.611}

12 February Germany informs the CD that, it will be following the example of Finland and offering a training course in CWC verification methods. Specifically, it will be providing a two-week course in analytical chemistry, conceived as a complementary

follow-up to the Finnish course [see 13 Dec 91], at Munster during 1-12 June. {CD/PV.611}

12 February Netherlands informs the CD that it will be convening an international seminar -- *OPCW, the First Five Years*, to be held in The Hague during 8-9 May 1992 -- on practical aspects of the implementation of the CWC in its early years. It also announces that, during the second half of June, it will be organizing a training program, somewhat similar to the German one, for about 10 chemistry graduates from developing countries. {CD/PV.611}

13 February Austria reiterates in the CD plenary its offer to host the projected CWC international organization and invites all delegations of CD member states to a two-day visit to Vienna {CD/PV.612}.

A similar trip had been made by CD ambassadors to The Hague in August 1991.

14 February In Germany, the Bundesrat passes the legislation which the Bundestag adopted three weeks previously [see 23 Jan] amending German export laws and establishing a federal agency to monitor exports. {FAZ 14 Feb, WSJ 18 Feb}

15 February In Johannesburg the South African Defense Force issues a communique about the reports of RENAMO chemical warfare in Mozambique [see 3 Feb] {Radio Mozambique 19 Feb in FBIS-AFR 20 Feb}. The communique refers to the investigation made in Mozambique by a South African team during 22-24 January [see 22 Jan]: the team had interviewed four victims of the alleged attack and carried out autopsies on two of the dead. The conclusion was that, although there was reason to suspect that an "unusual incident" did in fact occur, there was no evidence of chemical weapons having been used: "The patients described a variety of strange symptoms, but these do not fit the picture of any known chemical agent. At the time of the examination, no patient or corpse showed signs attributable to known chemical exposure. Although chemical exposure cannot be excluded, it can also not be confirmed from the evidence seen."

The communique also states that the South African Defense Force does not have chemical weapons, adding: "The SADF has, however, studied the subject of chemical and biological warfare to be able to act defensively against such weapons should it ever be necessary." {SAPA 15 Feb in BBC-SWB 17 Feb}

Four days later, however, the Chief of Staff of Mozambican Armed Forces states that medical tests carried out in Maputo on the soldiers affected showed that they had been poisoned by "a violent chemical agent which affects the nervous system in particular". {Radio Mozambique 20 Feb in BBC-SWB 21 Feb}

17 February In Moscow, following talks in Frankfurt between US Secretary of State James Baker and German Foreign Minister Hans-Dietrich Genscher {FR 11 Feb}, Russia, Germany and the United States announce plans to create an international science and technology institute that will employ former Soviet weapons scientists and engineers so as to give them "opportunities to redirect their talents to nonmilitary endeavors" and to "minimize any incentives to engage in activities that would result in proliferation of nuclear, biological and chemical weapons and missile delivery systems". The institute will be "a clearinghouse for developing, selecting, funding and monitoring projects that would be carried out primarily at institutions and facilities located in the Russian federation and other interested Commonwealth states".

The United States is to provide \$25 million, which will come from the \$400 million fund established by the Nunn-Lugar Act [see 25 Nov 91 and 15-22 Jan]. Germany pledges to push for backing from the European Community. {IHT 18 Feb, DN 24 Feb}

17 February In the United States, officials of the National Security Council are reportedly coordinating the development of a new strategy that would use 'non-lethal warfare' [see 13 Nov 91] as an adjunct to conventional and nuclear war {DN 17 Feb}. The underlying idea -- new only in the seriousness with which it is now apparently being pursued -- is that of disabling enemy weapon platforms, communication centers and the like without necessarily killing soldiers or civilians or causing other collateral damage. *Defense News* reports that the participants include the Defense Advanced Research Projects Agency (DARPA), the Defense Department Policy Planning Staff, the Directorate of Defense Research & Engineering, and the operations and planning staffs of the Service Chiefs. It also reports that the Defense Department is considering the inclusion of a preliminary technology-development effort, funded at about \$148 million, in its five-year budget plan.

Inside the Army later reports that the US Army Training and Doctrine Command's *Airland Operations* concept paper of 1 August 1991 defined 'non-lethal technologies' as "technologies with potential for development into weaponry that can disable or destroy an enemy's capability without causing significant injury, excessive property destruction, or widespread environmental damage"; the examples listed in the paper were "electromagnetic pulses, lasers, very low frequency sounds, agents which change molecular structure in base metals of critical systems, etc" {ITA 24 Feb}. Although this description of the Army concept of 'non-lethal warfare' makes no mention of antipersonnel chemical agents, it seems that the same cannot be said for a study reportedly nearing completion within the J-3 (Operations) directorate of the Joint Chiefs of Staff. *Defense News* states that this study "is examining how critical non-lethal battlefield technologies such as blinding lasers, chemical immobilizers, infrasound, non-nuclear electromagnetic pulse and relaxants could be used for immobilizing tactical systems, for denying the enemy's ability to wage offensive war and for selective destruction of strategic targets". What *Defense News* describes as a "tandem effort" to this J-3 study, conducted by the planning staff of Under Secretary of Defense (Policy) Paul Wolfowitz, is shortly to be presented to the Secretary of Defense.

As for the 'non-lethal technologies' that are already being studied actively, *Defense News* subsequently reports that those "in various stages of development by DARPA and the Lawrence Livermore and Los Alamos national laboratories include blinding lasers, traction inhibitors, chemical immobilizers, entanglement munitions to disable aircraft and ship propellers and tank treads". Its report continues: "Other technologies under development include neural inhibitors to temporarily incapacitate personnel, infrasound to disorient people and non-nuclear electromagnetic pulses to deactivate enemy electronics". And it quotes the 30 March 1991 mandate of the Defense Planning Staff study as stating that a US lead in 'non-lethal technologies' "will increase our options and reinforce our position in the post-Cold War world". {DN 2 Mar}

In other words, as a US Army officer is quoted as expressing it, the new technologies "might allow us to take action where we haven't been able to take action before". {DN 17 Feb}

18 February China submits to the CD a paper entitled *Some information on discovered chemical weapons abandoned in China by a foreign State* [see also 4 Nov 91]. The paper states that "direct victims alone" from these abandoned weapons exceed 2000 people, according to "preliminary statistics". Locations are stated for 18 dump sites and six other suspected sites in different parts of Anhui, Hebei, Heilongjiang, Jiangsu, Jilin, Liaoning, Shanxi and Zhejiang Provinces and in the Inner Mongolia Autonomous Region; more than 300,000 chemical munitions and 120 tons of bulk CW agent have so far been recovered from these sites and destroyed or given preliminary treatment by China; remaining buried may be another two million chemical munitions, including the 1.8 million rounds which historical records suggest may have been abandoned in the Dunhua region of Jilin Province. The CW agents involved are reported to be: mustard, mustard/lewisite, diphenylcyanoarsine, hydrogen cyanide, phosgene and chloroacetophenone [for which the US designations are H, HL, DC, AC, CG and CN, respectively]. The munitions are: 150mm shell (HL and DC fills), 105mm shell (HL and DC fills), 90mm mortar rounds (HL and DC fills), 75mm shell (CG and DC fills), aircraft bombs, 81mm mortar rounds and chemical munitions of other calibers, as well as toxic-smoke candles and canisters. {CD/1127}

Two days later China formally proposes to the CD that the CWC should clearly establish "the principle that the State which used and abandoned chemical weapons shall bear the responsibility for undoing the consequences of such uses and for destroying the chemical weapons it abandoned"; and it puts forward detailed language to that end for inclusion in the draft CWC. The proposal observes that because the issue of abandoned chemical weapons is "inherently related to definitions of chemical weapons as well as provisions on their use, declaration, destruction, verification, sanctions and cooperation" it should be "dealt with in a balanced, reasonable and integrated way". {CD/1130}

18 February The US Army is to establish a new agency, the Chemical Materiel Destruction Agency, so it is reported in *Defense Week* {DW 18 Feb}. Some 16 months previously, a House Appropriations Committee report had noted that the Army's Program Manager for Chemical Demilitarization (PMCD) had responsibility for destroying only those items that had been identified in 1986 as part of the Chemical Stockpile Disposal Program, the report continuing: "Not included are a host of lethal wastes from past disposal efforts, unserviceable munitions, chemically contaminated containers, chemical production facilities, subsequently located chemical munitions, sites known to contain significant concentrations of buried chemical weapons and waste, and binary weapons and components." The Committee had therefore directed the Defense Department to rest overall responsibility for all such chemdemil and other CW waste-disposal within a single office {House report 101-822}. In its report on the FY 1992 Defense Appropriations bill, the Committee reminded the Department of this direction. The new agency will merge the PMCD with a new Program Manager for clean-up of 'non-stockpile materiel' for whom there is an FY 1993 budget request of \$3-4 million to fund, according to the Army, "a lot of historical researching to define the entire program".

19 February The UN Security Council authorizes the dispatch of a senior envoy to Baghdad to seek assurances from Iraq that it will cooperate with the UN arrangements for elimination of mass-destruction weapons and for long-term monitoring of subsequent

non-acquisition by Iraq -- the second and third stages of the work which the Council had mandated UNSCOM to perform [see 3 Apr 91 and 11 Oct 91]. The Council warns Iraq of the "serious consequences" it will face if it does not cooperate; and there are press rumors of preparations for renewed military action against Iraq. The envoy is to be the Executive Chairman of UNSCOM, Ambassador Rolf Ekéus. He is to be accompanied by two teams of UNSCOM inspectors, one of them tasked to destroy equipment used in Iraq's ballistic missile program, the other to destroy *in situ* some hundreds of nerve-gas rockets considered too dangerous to move to the destruction facility being established at Muthanna [see 3 Nov 91]. {WP 19 Feb, NYT 20 Feb}

19 February In the US Congress, the Office of Technology Assessment convenes a meeting of its Advisory Panel on Proliferation of Weapons of Mass Destruction.

20 February Australia submits to the CD a report {CD/1128} on the multilateral trial inspection conducted during the Regional Initiative workshop in Melbourne six months previously [see 26-30 Aug 91] at a civil-industry facility producing triethanolamine.

Australia also submits to the CD a paper {CD/1129} outlining the methodology being used by its National Secretariat (the nucleus of the future Australian National Authority under the CWC) for its survey of the country's chemical industry. {CD/PV. 613}

20 February German Foreign Minister Hans-Dietrich Genscher addresses the CD in Geneva. On the appointment of the leader of the German CD delegation, Ambassador von Wagner, to the chairmanship of the Ad Hoc Committee on Chemical Weapons [see 23 Jan], he says: "Germany takes this responsibility very seriously and we will do all in our power to bring the negotiations to a punctual and successful conclusion." Speaking of the controls which the CWC must place upon the civilian chemical industry, he says: "Naturally, such verification measures, being so new, cannot function perfectly from the outset. The task of the future Chemical Weapons Organization and its technical secretariat will be to gradually develop verification procedures that work to the satisfaction of all member States." He welcomes the offer of President Mitterrand of France to hold a signature conference for the CWC in Paris before the end of the year. {CD/PV.613}

21 February In Germany, Defense Ministry State-Secretary Ottfried Hennig announces upon his return from Kaliningrad that Admiral Yegorov of the Russian Baltic Fleet has agreed to a plan for a common search for CW munitions dumped in the Baltic after the Second World War. {Deutschlandfunk 21 Feb in BBC-SWB 24 Feb}

21 February In Iraq, a team of United Nations experts arrives to start the work of destroying CW munitions too damaged to move to the central destruction facilities at Muthanna [see 19 Feb]. It is to begin at Khamasiyah, near the southern town of Nassiriya. The 26-person team, UNSCOM 29, is led by Michel Desgranges of France, who later reports that relations with the Iraqis are "normal and reasonable"; this had not been the experience of the UNSCOM ballistic-missile team, which had been withdrawn from the country on 29 February after Iraqi refusal to allow it to destroy missile-related material. M Desgranges reportedly hopes to complete his mission by mid-March. {Ind 21 Feb, IHT 4 Mar}

24 February The Sultan of Oman issues a decree whereby Oman agrees to join the Biological Weapons Convention. {WAKH 24 Feb in BBC-SWB 26 Feb}

24 February Forty-one states have by now been admitted to the CD as participating non-members for the 1992 session. They include all but Angola, Bangladesh and the United Arab Emirates of the 37 1991 observers, with, besides South Africa [see 6 Feb], Bolivia, Ecuador, Panama, Singapore, Thailand and Ukraine as new observers {CD/INF.28/Add.1}. Russia has taken over the former Soviet seat.

24 February Hungary, for the third successive year [see 20 Feb 91], presents to the CD a declaration of data on its production and consumption, import and export, of chemicals on the draft-CWC control-schedules. {CD/1135}

27 February The UN Security Council hears a report from its special envoy just returned from Baghdad, Ambassador Rolf Ekéus [see 19 Feb]: Iraq would be willing to cooperate in the weapons-elimination [see 25 Feb] and long-term compliance monitoring only if the Security Council started to lift its economic sanctions against Iraq. The Security Council issues a strongly condemnatory statement which asks Iraq to send a delegation to New York to explain its position "without further delay" and says that the Council will return to the issue no later than 9 March {NYT 29 Feb; FT 29 Feb-1 Mar; Ind 1 Mar}. The Iraqi Foreign Ministry reacts with a statement characterizing the UN Security Council as a tool of the United States; and Deputy Prime Minister Tariq Aziz later suggests that the UNSCOM elimination and monitoring plans are an attempt to wreck Iraqi manufacturing industry. UK Foreign Minister Douglas Hurd says on television: "We do not rule out going back to military action. We are not at that point yet, but they have to understand they have to obey the United Nations" {FT 2 & 3 Mar; IHT 2 Mar}.

27 February In Nagorno-Karabakh, where the Armenian-Azeri conflict is intensifying, the existence of a former Soviet CW-weapons dump near the Turkish border [but see 29 Jan] is said, on Moscow television, to be impeding the decision by the CIS military leadership about withdrawing its troops from the Transcaucasus {Moscow Television First Program 27 Feb in FBIS-SOV 2 Mar}. A spokesman for the CIS Armed Forces subsequently states that there are no former Soviet CW weapons in the region {TASS 28 Feb in FBIS-SOV 28 Feb}.

28 February In Russia President Yeltsin has established a committee on CBW treaty problems, so *Rossiyskaya Gazeta* reports. The committee is reportedly tasked to resolve BWC and CWC problems; to implement the international and internal controls required under these treaties; to prevent the development, production and stockpiling of CBW weapons; and to organize the elimination of stocks of chemical weapons. The chairman of the committee is Anatoliy Kuntsevich. {*Rossiyskaya Gazeta* 28 Feb in BBC-SWB 29 Feb}

INTO THE "END GAME"

by Ralf Trapp*

Scientific Advisor to the German CD Delegation

The plenary session of the Geneva Conference on Disarmament on 19 March 1992 was a remarkable event: The Foreign Minister of Australia, Senator Gareth Evans, introduced his country's draft Chemical Weapons Convention as an official working paper of the CD. The session was also remarkable for the large number of speakers that followed him, underlining their countries' readiness to participate in the "end game" in a constructive manner.

If numbers can serve as an indicator, and if the spirit of these speeches is taken as evidence of the attitude which delegations will follow in the final round of negotiations, the plenary marked a long-awaited change in the negotiations on the CWC. They seem at last to have begun moving from business as usual to honest compromising in order to finish the treaty. The days when the posture of delegations had tended to become entrenched in positions clearly not acceptable to others (and thus not negotiable) seem to have passed. "Agree to what you can live with rather than press for what you would like best" is becoming the attitude.

At a minimum, the Australian draft has demonstrated that it is possible to devise a clean treaty text on the basis of what has been negotiated over the past decade as recorded in the Rolling Text. It offers models for how the remaining unresolved issues may be sorted out and grouped for package solutions. It surely does not solve these outstanding problems, but it provides a conceptual framework which could be extremely helpful in the final phase of negotiations.

In the end game, it will be crucial not to forget a set of essentials if failure is to be avoided. It will be important to move from dogmatic to negotiable positions on outstanding issues, thus respecting the legitimate interests of all players. It will be just as important not to let current short-term interests obscure the long-term goals of the CWC, which relate to the changing world situation and to foreseeable as well as to as-yet unknown developments in the scientific field. In addition, consideration will have to be given to whether it would be implementable by the States Parties and the organization of the CWC.

No more than 15 to 20 percent of the text of the Convention, it is often said, still awaits settlement. To resolve outstanding issues will surely not be trivial. One of the fundamental issues that remains controversial is the very definition of chemical weapons. Should "non-lethal" toxic chemicals be exempted from the CWC altogether, or should the General Purpose Criterion be preserved? The real question is: Do we want to have a comprehensive or a partial ban on chemical weapons? Do we want to prevent, or only to channel, CW proliferation? If this Convention is not for the day but---at has so often been proclaimed---for the long future, the answer seems obvious. If these considerations were the basis for seeking a solution, the issue would turn into a straightforward drafting exercise.

Another basic issue is challenge inspection procedures.

Here, as elsewhere in the Convention, pragmatism will offer the only way to a solution. Neither the concept of "zero loss of sensitive information" nor procedures that would tend to undermine the applicability and hence the deterrent effect of challenge inspection will be able to serve as a basis for compromise.

On how much of the chemical industry is to be subjected to inspection aside from challenge inspection, there will have to be a balance between verification effectiveness and national economic interests. It would add little if anything to the credibility, let alone cost-effectiveness, of the verification regime if it were designed in a way that would almost exclusively focus inspections on parts of the industry that are unlikely to be involved in proscribed activities. However, it would be as futile to insist on otherwise sound schemes if key players were to continue to reject them. As the end game proceeds, we may have to settle on the good rather than the best and find other ways to enhance confidence in treaty compliance within the chemical industry.

Similar reasoning may be applied to the impact of the treaty on the economies of States Parties, and to the future of export controls in particular. Here, too, persisting with extreme positions can only cause the negotiation enterprise to run idle. Economic interests of countries dependent on the further development of their chemical industries are indeed as valid a concern for the design of the treaty regime as security considerations regarding proliferation. Moreover, the obligation upon States Parties to cooperate in the implementation of the treaty does not stop at issues related to compliance but surely extends to areas of designing and implementing national legislation. Much the same reasoning would also apply to the problem of how to deal with old chemical weapons stocks abandoned by one State on the territory of another. Rather than attempting to resurrect remnants of history, cooperative and pragmatic solutions are needed.

Negotiators may also have to break with a tradition that so far has never been questioned: Not to reconsider a "clean text". A case in point is the destruction issue; if it turns out that a CW possessor cannot guarantee compliance with prescribed time frames, there is a serious problem. Then, insistence on language previously agreed, under different circumstances, would risk making it impossible for that possessor State to join the Convention---an outcome that would surely not be in the interest of the international community.

This brief journey through some of the major unresolved issues is certainly not all-encompassing and does not seek to offer specific solutions. The intention here has been to illustrate the attitude that will be required of negotiating countries if indeed we are to conclude the Convention this year. Sticking to inessential national positions and old thinking from the now-over Cold War would be as detrimental to the swift completion of the treaty as would be striving for flawless yet non-negotiable provisions. The treaty will have to be concluded briskly if the enterprise is not to collapse. ■

* The views expressed are those of the author and do not necessarily reflect positions of the German delegation.

Recent Publications

- Adam, Bernard, Jean Pascal Zanders, Francesco de Sarlo and Sergio Bacciarelli, "Chemical weapons proliferation and disarmament," *Quaderni Forum* [Firenze: Forum per i problemi della pace e della guerra] vol. 5 no. 2 (October 1991), 53 pp.
- Bailey, Kathleen, *Doomsday Weapons in the Hands of Many: The Arms Control Challenge of the '90s* (Urbana and Chicago: University of Illinois Press, 1991), 159 pp.
- Bailey, Kathleen C., "Problems with a chemical weapons ban," *Orbis*, vol. 36 no. 2 (Spring 1992), pp. 239-251.
- Banks, Robert, with David Hobbs and Ripley Eagles Rand, *Chemical and Biological Weapons*, (Interim Report of the Sub-Committee on Verification and Technology, Scientific and Technical Committee, North Atlantic Assembly), NAA International Secretariat document AI 271, STC/VT(91)6, October 1991, 43 pp.
- Barker, Robert B. [Assistant to the Secretary of Defense for Atomic Energy], "DOD chemical/biological defense program -- the future," paper presented at the American Defense Preparedness Association symposium 'Chemical/Biological Operations and Survivability', Fort McClellan, Alabama, 3-5 December 1991, 12 pp.
- Batsanov, Ambassador Serguei, "Banning chemical weapons: final year of negotiations?," *ASA Newsletter* no. 28 (5 February 1992), pp. 1 & 12-14.
- Brauch, Hans Günter (ed.), *Controlling Military Research and Development and Exports of Dual Use Technologies as a Problem of Disarmament and Arms Control Policy in the 1990s*, AFESS-PRESS report no. 45, Mosbach-Neckarelz, 1992.
- Canada, *Collateral Analysis and Verification of Biological and Toxin Research in Iraq*, prepared by Brac Scientific Consulting in collaboration with the Verification Research Unit, Department of External Affairs and International Trade, October 1991, 35 pp. plus 13 annexes.
- Canada, Department of National Defence, *Transparency Mechanisms for the Canadian Chemical and Biological Defence Program* [submission to the Third BWC Review Conference], September 1991, 11 pp.
- Carter, Gradon B., "The Microbiological Research Establishment and its precursors at Porton Down, 1940-1979. Part 2: The Microbiological Research Department and Establishment, 1946-1979," *ASA Newsletter* no. 28 (5 February 1992), pp. 8-10.
- Chevrier, Marie, "The Biological Weapons Convention: the third review conference," *Politics and Life Sciences*, February 1992, pp. 5-11.
- Cordesman, Anthony H., *Weapons of Mass Destruction in the Middle East* (Oxford: Brassey's [for the Royal United Services Institute], 1991), 224 pp.
- Couston, Mireille, "Menaces chimiques et bactériologiques: la législation américaine," *Défense nationale*, November 1991, pp. 75-89.
- Dabezies, Pierre, André Dumoulin, Eric Remacle and Serge Sur, "Prolifération et désarmement chimiques après la guerre du Golfe," *Dossier GRIP* [Brussels: Groupe de Recherche et d'Information sur la Paix] no. 164, December 1991, 45 pp.
- Eastlund, Bernard J., and William C. Gough, "Near term recycling option using fusion grade plasmas," *Fusion Technology* vol. 20 (1991) no. 4 [proposes use of fusion grade plasma for chemdemil].
- Findlay, Trevor, "Desperately seeking a CWC: neutering challenge OSI," *Pacific Research* (Canberra: Peace Research Centre, Australian National University), November 1991, pp. 6, 7, 9.
- Finland, Ministry for Foreign Affairs, *Training Program in Analytical Methods and Instrumentation for the Verification of Chemical Disarmament. G.1: Basic Course* (Helsinki, 1991), 79 pp. [Announced in CD/1112 of 9 October 1991]
- Gee, John, "Chemical and biological arms control and disarmament: an overview," in UN Department for Disarmament Affairs, *The United Nations Regional Disarmament Workshop for Asia and the Pacific*, New York: United Nations (1991), pp. 104-121.
- Gee, John, "National implementation of the future Chemical Weapons Convention: the Australian experience," in UN Department for Disarmament Affairs, *The United Nations Regional Disarmament Workshop for Asia and the Pacific*, New York: United Nations (1991), pp. 143-151.
- Gee, John, "Confessions of an on-site inspector," *Pacific Research*, November 1991, pp. 3-5, 9.
- Goldblat, Jozef, and Thomas Bernauer, "Towards a more effective ban on biological warfare," *Bulletin of Peace Proposals*, vol. 23 no. 1 (March 1992) pp. 1-7.
- Hammick, Murray, "All stick and no carrot: NBC's poor reputation persists," *International Defense Review* vol. 24 (1991) no. 12, pp. 1323-7.

- Harris, Elisa D., "Chemical and biological arms control: the role of the Allies," in Fen Osler Hampson, Harald Von Riekhoff and John Roper (eds.), *The Allies and Arms Control*, Baltimore & London: The Johns Hopkins University Press, 1992, pp. 75-94 and 336-344.
- Huminer, David, Silvio D. Pilitik, Abraham Katz, Aryeh Metzker and Michael David; Air Zimran and Yaakov J. Ashkenazi; Daniel A. Vardy, Zehava Laver, Zichria Zakai-Rones and Sidney N. Klaus; Jeffrey Borkan and Shmuel Reis, "Untoward effects of gas masks during Persian Gulf War [letters to the Editor]," *New England Journal of Medicine* vol. 325 no. 8 (22 August 1991) pp. 582-3.
- Jopp, Fregattenkapitän Heinz-Dieter, "ABC-Waffen im Kräfte-spiel der orientalischen Konflikte," *Europäische Sicherheit*, vol. 41 (1992) no. 1 pp. 26, 35-36 & 38.
- Kiper, Manuel, "Gentechnik im Dienste der Militärs," *Wechselwirkung* no. 53 (February 1992), pp. 8-12.
- Krause, Joachim, "The current status of the Geneva negotiations on the Chemical Weapons Convention," in UN Department for Disarmament Affairs, *The United Nations Regional Disarmament Workshop for Asia and the Pacific*, New York: United Nations (1991), pp. 122-142.
- Krause, Joachim (ed), *Security Implications of a Global Chemical Weapons Ban* (Boulder, San Francisco and Oxford: Westview Press, 1991), 109 pp.
- Krause, Joachim, and Charles K. Mallory, *Chemical Weapons in Soviet Military Doctrine: Military and Historical Experience, 1915-1991* (Westview Special Studies in International Security, 1991), 288 pp.
- Krause, Joachim, "The changing international system and chemical weapons disarmament," *Stiftung Wissenschaft und Politik* report no. SWP-1P 2730, Ebenhausen, February 1992, 22 pp.
- Kurzidem, Thomas, "Violations of export regulations and problems of law enforcement: the Karl Kolb/Pilot Plant case in German courts," in Hans Günter Brauch (ed.), *supra*, pp. 200-210.
- Leitenberg, Milton, "The 1979 Sverdlovsk events and biological weapons arms control," *Lectures and Contributions to East European Studies at FOA* [Stockholm: The Swedish National Defence Research Establishment] no. 2, 12 February 1992.
- Lohs, Karlheinz, "Aus militärischen Altlasten erwachsende ärztliche Erfordernisse," *Z. ärztl. Fortbild.*, vol. 85 (1991), pp. 1063-67
- Lohs, Karlheinz and Dieter Martinetz, "Dioxine -- Ultragifte par excellence?," *Z. ärztl. Fortbild.*, vol. 86 (1992), pp. 13-20.
- Lohs, Karlheinz and Dieter Martinetz, *Gefährliche Stoffe in der Umwelt -- Risiken und ihre Minimierung* (Iserlohn-Letmathe: Eigenverlag Lobbe, 1992), 70 pp.
- McElroy, Rodney J., "The Geneva Protocol of 1925," in Michael Krepon and Dan Caldwell (eds.), *The Politics of Arms Control Treaty Ratification* (New York: St Martin's Press, 1991), pp. 125-166.
- Mullen, Mark, "Verification of a Chemical Weapons Convention: summary of lessons learned from the verification experience of the International Atomic Energy Agency," *Briefing* [Los Alamos National Laboratory, Center for National Security Studies] vol. 2 no. 6 (20 December 1991), 35 pp.
- Mullen, Mark F., Kenneth E. Apt and William D. Stanbro, *Criteria for Monitoring a Chemical Arms Treaty: Implications for the Verification Regime*, Los Alamos National Laboratory, Center for National Security Studies, report no. 13 (December 1991), 16 pp.
- Roberts, Brad, "Chemical Disarmament and Security," *Adelphi Paper* no. 267 (April 1992), Brassey's for IISS, 84 pp.
- Rosenberg, Barbara Hatch, *Control of biological weapons in the new world order: a briefing and discussion* [on 17 October 1991], Washington, DC: The Committee for National Security, 1992, 16 pp.
- Rosenberg, Barbara Hatch, "East-West solidarity marks review of Biological Weapons Convention," *FAS Public Interest Report*, vol. 45 no. 1 (January/February 1992), pp. 3-5.
- Sims, Nicholas, "Achievements and failures at the Third [Biological Weapons Convention] Review Conference," *Chemical Weapons Convention Bulletin* no. 14 (December 1991), pp. 2-5.
- Spyra, Wolfgang, Karlheinz Lohs, Max Preussner, Henning Rüdten and Karl J. Thomé-Kozmiensky, *Untersuchung von Rüstungsaltlasten* (Berlin: EF-Verlag für Energie und Umwelttechnik GmbH, 1991).
- Timmerman, Kenneth R., *The Death Lobby: How the West Armed Iraq* (Boston: Houghton Mifflin, 1991 and London: Fourth Estate, 1992), 443 pp.
- Turbé, Gérard, "Refurbishing France's NBC protection," *International Defense Review*, vol. 24 (1991) no. 12, pp. 1328, 1330.

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Forthcoming Events

- In Geneva, the CD completes the first part of its 1992 session on 27 March. The second part of the session will resume on 11 May and run through 26 June; and the third will run from 20 July through 3 September.
- The government of the Netherlands will hold an international seminar "OPCW, the First Five Years", in The Hague during 8-9 May 1992. The conference will address practical aspects of the implementation of the CWC in its early years.
- In Williamsburg, VA, the Defense Nuclear Agency will hold a seminar on "Arms Control and Verification Technology" during 2-4 June. For more information, contact Col. Michael Evanson, US Army, (703) 325-7330.
- In Stockholm, Sweden the National Defence Research Establishment, along with other agencies of the Swedish government, will convene the "Fourth International Symposium on Protection Against Chemical Warfare Agents" from 8-12 June. Participation is by invitation only. For more information contact Mr. Kurt Persson, FOA, S-901 82 Umeå, Sweden.