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CWC signed

On 13-15 January, the Chemical Weapons Convention was signed at a conference in the UNESCO building in Paris. The conference marked the culmination of 25 years of negotiations.

There has been some confusion over the number of signatories, with numbers in the range of 125 to 140 being quoted. The situation is further confused as some states who had previously expressed an intention to be original signatories participated in the conference but did not sign.

To the best of VERTIC's knowledge, 130 states signed at the Paris conference, with other states subsequently signing in New York. A list of the signatories is given on page 2.

The first state to ratify the CWC was Fiji.

Although it had been announced that the UK would be represented at the Paris conference by the Overseas Development Minister, Baroness Chalker, the Foreign Secretary, Douglas Hurd, signed for the UK.

A special pull-out briefing on the CWC is provided with this edition of Trust & Verify.

START II signed

The second Strategic Arms Reduction Treaty (START II) was signed by Presidents Bush and Yeltsin on 3 January. Its formal title is the Treaty Between the United States of America and the Russian Federation on Further Reduction and Limitation of Strategic Offensive Arms.

START II is derived from the Joint Understanding signed by the two presidents at the Washington Summit on 17 June 1992.

Actual warheads

One of the advances made in START II is that it puts a limit on the actual number of strategic warheads each side may possess. Previously, under START I, the number of strategic warheads was 'accountable' by a formula, giving only a nominal limit.

The verification provisions are based on those contained within START I. However, actual numbers of warheads are easier to verify than accountable ones.

A table of the limits on warheads under START I and START II is reproduced on page 3.

Implementation

START II implementation is connected to the implementation of START I. START II may not enter force before START I.

START I was signed on 31 July 1991 between the United States and the Soviet Union. Once the Soviet Union ceased to exist, the treaty had to be amended to include all the successor states with strategic nuclear weapons on their soil – Belarus, Kazakhstan, Russia and Ukraine.

A protocol was agreed between the United States and the four former Soviet states at Lisbon on 23 May 1992. The protocol commits the four states to ensure that at the end of the seven-year implementation period, only Russia would have nuclear weapons on its soil. The protocol also requires the other three states to accede to the NPT as non-nuclear-weapon states.

On 4 February, a vote in the Parliament of Belarus gave approved ratification of START I and the NPT. START I has already been ratified by the US, Russia and Kazakhstan. Ukraine, has so far, made no moves towards ratification.

START II has already become the target of opposition in the Russian Parliament, which under the Russian constitution, must ratify the agreement. The agreement appears likely to be affected by the ongoing friction between the legislature and the executive. A major point of contention is likely to be the economic cost of dismantling weapons.

Seismic verification

LLNL test explosion

Lawrence Livermore National Laboratory have confirmed that they are planning to detonate 1 kiloton of conventional explosive in mid-February, under Rainier Mesa, in the Nevada test site.

The area selected for this test has been used for nuclear test explosions and so it will be possible for seismologists to make comparisons between conventional and nuclear explosions.

It has been stated, though disputed by some seismologists, that large chemical explosions represent a potential difficulty in seismic verification of nuclear testing treaties.

UK verification

It has been revealed in a Parliamentary Written Answer that £1.5 million of British Government funds was allocated for spending on 'unclassified work on seismology as a verification technology' in 1992. This is the first time that this information has been revealed. It is quite clear that there is additional, classified research being undertaken in parallel to this.

In 1989 it was revealed that 27 scientific personnel, including contract staff, were employed at the Atomic Weapons Establishment facility at Blacknest and were undertaking seismological research.

Export Controls

The editor has received some welcome feedback concerning the item on the European Community and export controls in *Trust & Verify*, December 1992.

It has been pointed out that military goods and services are exempt from the single market changes because of Article 223 of the Treaty of Rome. The editor accepts that this was not made clear in the item.

However, one of the major areas of concern in the proliferation of weapons is not just whole weapon systems, but also the equipment and technologies that may be used to develop and manufacture them. Many of these also have civilian uses. Such 'dual-use' equipment will not be entirely covered by the military exemption, and thus controls over them will change as the single market evolves.

At a meeting on 21 December, representatives of the 12 EC states agreed to intensify their efforts to reach an agreement on export controls for dual-use technologies. The statement issued at the end of the meeting indicated that the participants hoped that a regulation on export controls might be adopted before 31 March 1993.

UN arms register

In December, the United Nations General Assembly adopted by consensus a resolution in support of the report by technical experts on the implementation of the arms register.

Those states participating in the register are required to provide the first returns of information, covering the

calendar year 1992, by 30 April 1993. The returns of information will cover both arms imports and exports.

Nuclear Testing

A satellite study by researchers at the Norwegian Institute for International Affairs has highlighted possible geological problems at the Russian Arctic nuclear test site at Novaya Zemlya.

The study raises concerns that radioactive residues might leak from the caverns caused by test explosions into the ground water and thence into the sea.

A Russian company, Chetek, has produced plans in association with the Russian Ministry of Atomic Energy, to destroy chemicals weapons by incinerating them in the heat of a nuclear test. Novaya Zemlya would be the only existing nuclear test site available to Chetek as the Soviet Union's other nuclear test site at Semipalatinsk is now part of Kazakhstan.

Ballistic missile controls

On 7 January, members of the Missile Technology Control Regime formally adopted revised guidelines to cover ballistic missiles, and components thereof, capable of carrying chemical and biological weapons.

The new guidelines follow an MTCR meeting in July last year in which concerns were raised about the proliferation of chemical and biological capabilities.

Pu to Japan

On 5 January the Akatsuki Maru docked at the Japanese port of Tokai, about 100 miles north of Tokyo. The plutonium on board the ship was then transferred by road to a nearby storage facility.

CWC signatories

At Paris Conference: Afghanistan Albania Algeria Argentina Australia Austria Azerbaijan Bangladesh Belarus Belgium Benin Bolivia Brazil Brunei Bulgaria Burkina Faso Burundi Cambodia Cameroon Canada Cape Verde Central African Republic Chile China Czech Republic Colombia Comoros Congo Cook Islands Costa Rica Croatia Cuba

Cyprus

Denmark Dominican Republic Equador Equatorial Guinea El Salvador Estonia Ethiopia Fiji Finland France Gabon Gambia Georgia Germany Ghana Greece Guatemala Guinea Guinea Bissau Haiti Holy See Honduras Hungary Iceland India Indonesia Iran Ireland Israel Italy Ivory Coast Japan Kazakhstan Kenya

Liberia Lithuania Luxembourg Madagascar Malaysia Malawi Mali Malta Marshall Islands Mauritius Mauritania Mexico Micronesia Moldova Monaco Mongolia Morocco Myanmar Namibia Nauru Niger Nigeria Norway Netherlands New Zealand Pakistan Papua New Guinea Paraguay Peru Philippines Poland

Portugal

Romania

Republic of Korea

Russia Samoa San Marino Senegal Seychelles Sierra Leone Singapore Slovakia Slovenia South Africa Spain Sri Lanka Sweden Switzerland Tajikistan Thailand Togo Tunisia Turkey Uganda Ukraine United Kingdom United States of America Uruguay Venezuela Vietnam Zaire Zambia Zimbabwe At New York: Kuwait Nepal

Saudi Arabia

The ship's route appears to have been around Africa's southern tip, across the Indian Ocean to pass south of Australia and then north through the Pacific to Japan.

Although Japanese officials were aware that there might be some controversy regarding the Akatsuki Maru and its cargo, they have clearly been taken aback by the strength of reactions to the shipment. It remains to be seen whether the shipments will continue.

US strike on Iraq

In one of the series of military strikes on Iraq in January, Tomahawk cruise missiles were used to attack what US government sources described as a 'nuclear weapons plant' in the town of Zaafaraniya, about 8 miles south of Baghdad.

However, Rolf Ekeus, the Executive Chairman of the United Nations Special Commission (UNSCOM), stated that the facility had been checked and that 'all equipment that can only be used for military purposes had been destroyed. Equipment that can be used for both military and civil purposes was still there, but we had it under strict control.'

Matrix-Churchill

In the UK the Scott Inquiry into the 'machine tools to Iraq' affair is continuing (see *Trust & Verify*, November 1992). It has been reported that Lord Justice Scott believes that his first task should be to read all the relevant documents before seeking other evidence. This could mean that witnesses would not be called until March at the earliest.

It has also been reported that no decision has been taken as to how much of the evidence will be heard in public, nor has there been a decision on evidence by former ministers. Prime Minister John Major has stated that current ministers must give evidence if called, but no mention was made of former ministers.

Did Iraqis have BW in 1986?

A document being circulated by Kurdish groups and which appears to be an official Iraqi memo indicates that the Iraqi military had access to chemical and biological weapons in 1986.

The document appears to be an order to a military unit to carrying out an inventory of 'chemical and biological materials' (also translated as 'bio-chemical materials') and to report back to headquarters by 8 August 1986.

The document forms part of a body of evidence that Middle East Watch are gathering in an attempt to bring a genocide case against Iraq in the International Court of Justice.

Alleged use of BW in Rhodesia

Investigations are taking place into an outbreak of anthrax in Rhodesia in 1978–80, at the height of the civil war. It is thought that up to 10,000 people, almost all of them black, were infected with the disease, which up to that point was relatively unknown in the affected areas.

Anthrax has long been known to be a usable biological weapon. However, as the disease also occurs naturally, an outbreak may not be proven beyond reasonable doubt to be natural or deliberate.

German CW court case

A sixth German has been jailed for his part in efforts to assist Libya to develop a chemical weapons capability.

Andreas Boehm, 61, who worked for Salzgitter Industriebau GmbH (SIG), was jailed for 15 months for exporting components used in Libya's Rabta plant.

Bush halts sale of chemical plant

In the first week of January, President Bush blocked the sale by BP of a chemical plant to Iran. Fears had been expressed that a lethal gas used in the plant's manufacturing processes, hydrogen cyanide, could be diverted for military purposes.

The sale was supported by the US Commerce Department, but opposed by the Pentagon and the CIA.

Iran signed the CWC in Paris. The export decision may be changed once the Convention is in force.

A BP spokesman made it clear that they were aware of proliferation concerns. He also pointed out that the proposed plant would require regular supplies of a catalyst available only from the company and that supplies of this would be withdrawn if any attempt at diversion was made.

Commission on Sustainable Development

The United Nations General Assembly (UNGA) has reached agreement on a Commission on Sustainable Development (CSD) to monitor and promote implementation of the Agenda 21 programme agreed at UNCED in June.

The UNGA has also endorsed the Rio Declaration and the Statement on Forest Principles.

The CSD will be made up of 53 states from all regions. Ten states will be nominated from Latin America, twelve each from Africa and Asia and nineteen from the

START I and START II limits

	STARTI	START II Phase 1	START II Phase 2
Total Strategic Warheads	6000 [accountable]	3800-4250 [actual]	3000-3500 [actual]
Ballistic Missile Warheads	4900	No Specific Sub-limit	No Specific Sub-limit
MIRVed ICBM Warheads	Not Applicable	1200	0
SLBM Warheads	Not Applicable	2160	1700-1750
Heavy ICBM Warheads	1540	650	0
Mobile ICBM Warheads	1100	As START I	As START I
Total Strategic Nuclear Delivery Vehicles	1600	As START I	As START I

industrialized nations. The Commission will meet annually in New York.

The CSD secretariat will be incorporated in a newlycreated Department for Policy Coordination and Sustainable Development at the UN. This new department will be headed by Nitin Desai of India, who was deputy secretary of UNCED.

UNCED Follow up in the UK

There will be two separate follow up meetings to the UNCED Conference in the UK. Both will be held in Manchester in September 1993.

The first will be 'Partnerships for Change', hosted by the UK government and designed to bring together NGOs, local government, business and industry in order to 'consolidate the lessons learned in the first year after Rio'. The conference will concentrate on Agenda 21 issues, will have limited attendance and is being organised by the Department of the Environment.

The second event will be the Global Forum '93, intended to be a successor to the '92 forum in Rio. Organised by Manchester City Council, it will be open to all.

Recent Publications

Arms Control Brief

The Project on Rethinking Arms Control at the Center for International and Security Studies at Maryland (CISSM) has produced a new publication entitled Arms Control Brief. Each issue is a four-page presentation on an arms control subject. The first three editions are 'The End of Nuclear Arms (Control)?', by Michael E. Brown; 'Zero Ballistic Missiles in a Third World Context', by Lora Lumpe; and 'START II: A Grand Finale', by Ivo H. Daalder.

Ukraine

With the dissolution of the Soviet Union, the fate of the superpowers' strategic nuclear weapons is the subject of concern. Two recent papers have highlighted this.

Victor Batiouk, the Permanent Representative of the Republic of Ukraine to the United Nations in New York, has written a UNIDIR research paper entitled 'Ukraine's Non-Nuclear Option'.

The British American Security Information Council have produced a paper entitled 'Ukraine and Nuclear Weapons' in their Analysis from BASIC series.

Zuckerman on a CTB

Lord Zuckerman, former Chief Scientific Adviser at the UK Ministry of Defence and a UK delegate to UN disarmament working groups has written an article in *Nature* (4 Feb '93) on the prospects for a comprehensive test ban.

He concludes that the time is now ripe for a CTB, that the IAEA should be the organisation to oversee compliance and that the United Kingdom has nothing to gain by holding out for continued nuclear testing.

Zuckerman's comments are echoed in an editorial which accuses the British government of dragging its feet. The editorial also casts an eye over implementation of the CWC, and calls for the national verification authority in the UK to include independent members, unconstrained by the demands of industry and government.

Vertic News

Trust & Verify questionnaire

Many thanks to all readers who returned the questionnaires sent out with 7&V in September.

It is pleasing to note the level of satisfaction with the publication. Comments and criticisms of the style and content have been noted.

Subscriptions

One finding of the questionnaire returns was that many more readers would like to subscribe to *Trust & Verify*, but found it difficult because of currency problems.

VERTIC now has an arrangement to take payments by credit card, originally established for sales of the Verification Report yearbooks. Use of this scheme resolves these problems as VERTIC is paid in pounds and you get charged in your local currency. An order form is enclosed with this mailing.

Verification Report

Verification Report 1992, the most recent in VERTIC's series of yearbooks, has received further reviews in recent weeks, the latest being in New Scientist, Nature and the Greenhouse Gas Bulletin.

Verification Report 1992 is available from the VERTIC office at a price of £25; Verification Report 1991 is also available at a price of £20. (Postage & packing are not included.) As with Trust & Verify subscriptions, credit card orders may be taken by fax or telephone.

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Trust & Verify

Trust & Verify is produced by VERTIC 10 times a year. Anyone wishing to contribute information for inclusion in Trust & Verify, or to comment on its contents, should contact the VERTIC office.

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The production of *Trust & Verify* entails considerable cost to VERTIC so we would welcome a subscription of £12 (individual) or £20 (organization) for a year's issues. Payments may be made by cheque or credit card. Thank you to those who have sent a subscription.

What is VERTIC?

VERTIC is an independent organization aiming to research and provide information on the role of verification technology and methods in present and future arms control and environmental agreements. VERTIC coordinates six working groups comprising 21 UK consultants and 11 overseas advisors. VERTIC is the major source of information on verification for scientists, policy makers and the press. VERTIC is funded primarily by grants from foundations and trusts and its independence is monitored by an Oversight and Advisory Committee.

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The Chemical Weapons Convention

The Convention on the Prohibition of the Development, Production, Stockpiling and use of Chemical Weapons and on Their Destruction, commonly known as the Chemical Weapons Convention or CWC, was signed in Paris in January.

The main features of the CWC are:

- Each state party undertakes never, in any circumstances, to:
 - develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone;
 - -use chemical weapons, or engage in any military preparations for doing so; or
 - assist, encourage or induce, in any way, anyone to engage in any activity prohibited by the treaty.
- Each state party undertakes to destroy, within 10 years of the treaty entering into force:
 - -its chemical weapons;
 - any production facilities it has used at any time since 1 January 1946 to manufacture chemical weapons in quantities exceeding one tonne of chemical per year; and
 - any chemical weapons it abandoned on the territory of another state party.

History of the CWC

The CWC is far more comprehensive than earlier treaties dealing with chemical and biological weapons. The 1925 Geneva Protocol banned the use of chemical weapons in warfare, but did not prohibit states from manufacturing CW. The 1972 Biological Weapons Convention (BWC) prohibits the development or production of biological agents and to toxins produced by them. The major drawback of these two treaties is their lack of any verification provisions.

Without verification, confidence in a treaty's operation is vastly reduced. A clear sign of the impact of verification principles, and the clearer definition of prohibited activities which this requires, is that the 1925 Geneva Protocol is only one page long; the 1972 BWC is four pages long; while the CWC is roughly 200 pages long.

CWC negotiations

The CWC was negotiated at the Conference on Disarmament, a forum in Geneva with a UN-provided secretariat. The detailed discussions were carried out in the Ad Hoc Committee on Chemical Weapons. The draft treaty was approved by this committee on 26 August 1992 and by the Plenary meeting on 3 September.

The draft CWC was formally submitted to the First Committee of the United Nations General Assembly on 12 October 1992. On 13 November, a resolution commending the CWC to states to sign and ratify was passed by consensus. On 30 November, the General Assembly adopted a resolution of a similar nature by consensus.

CWC signing and ratification

The CWC signing conference was held in Paris on 13-15 January 1993. It will enter into force a minimum of two years after it has been opened for signature and after 65 states have deposited their ratifications.

It is unclear how long it will take for states to complete their ratification processes. As the CWC allows for inspections at any site in the territory of a party, domestic legislation will be required in many states before ratification can be completed. In some states this may also raise constitutional questions.

CWC preparations

In the minimum of two years before the CWC enters into force, a Preparatory Commission for the Organization for the Prohibition of Chemical Weapons (see below) will have to be established. It is not yet decided how the Commission will operate.

Chemical Weapons (CW)

The treaty's definition of CW is very wide. It not only includes munitions or other devices specifically designed to cause death, temporary incapacitation or permanent harm to humans or animals (but not plants), but also such toxic chemicals on their own and any other chemicals from which they can be made ('precursors') unless they are for purposes not prohibited by the CWC.

The non-prohibited activities includes riot control, although the CWC explicitly states that riot control agents should not be used as a method of warfare.

Schedules of chemicals

The level of control over any individual chemical relates to its level of risk to the object and purpose of the CWC and its peaceful uses. The schedules may be amended to include further chemicals.

- Schedule 1 chemicals have toxicities that would enable them to be used as chemical weapons, or may be immediate precursors to such chemicals; they pose a high risk to the object and purpose of the CWC.
 Schedule 1 chemicals have little or no use for purposes not prohibited under the CWC.
- Schedule 2 chemicals have toxicities that could enable them to be used as chemical weapons, or are immediate precursors to such a chemical or a precursor to a Schedule 1 chemical; they pose a significant risk to the object and purpose of the CWC. Schedule 2 chemicals are not produced in large commercial quantities for purposes not prohibited under the CWC.
- Schedule 3 chemicals have toxicities that might enable them to be used as chemical weapons; they otherwise pose a risk to the object and purpose of the CWC.
 Schedule 3 chemicals may be produced in large commercial quantities for purposes not prohibited under the CWC.

Schedule 1 chemicals are effectively banned from use in industrial activity and are tightly controlled; very strict

rules will apply on transfers of these between CWC parties. Schedule 2 chemicals will eventually only be allowed to be traded between CWC parties. Schedule 3 chemicals may be traded only under certain conditions. The thresholds for declarations of holdings of chemicals increases from one kilogramme for some Schedule 2 chemicals, to 30 tonnes for those in Schedule 3.

CWC verification

It has long been recognised that a CWC would not be credible without a stringent verification regime. Verification provisions in the CWC are primarily based on declarations with inspections to authenticate their accuracy.

Declarations

Each party to the CWC must declare details of whichever of the following they may possess:

- any stocks of CW, giving their locations and a plan for their safe destruction (including CW stocks deployed to other states);
- current and former CW production facilities, including each facilities production capacity and a plan for the destruction or conversion of each facility;
- . CW research and development facilities; and
- · commercial chemical production facilities;

This information must be updated annually.

Inspections

The following forms of on-site inspection may be carried out by the Inspectorate: auditing of CW storage sites; inspections of CW production sites; monitoring of the destruction of CW; routine inspections of chemical production plants; and challenge inspections of any site in the territory of a party, carried out at short notice.

Storage auditing

Where a party to the CWC has declared an existing CW stockpile, inspectors may carry out on-site inspections at the storage site in order to ascertain that the stocks held are in accordance with the declared data.

CW production site monitoring

Once the CWC is in force for a party all CW production must cease. Inspectors may place seals on equipment and, until destruction of the facility is complete, inspectors may visit the site up to four times a year.

A CW production site may also be temporarily converted to a CW destruction facility or permanently converted to peaceful uses.

CW destruction monitoring

Inspectors shall visit to each CW destruction facility before it begins operation in order to 'familiarize' inspectors with the plant. Once such a facility is operating, provision must be made for continuous monitoring with instruments and inspectors.

The destruction facilities must be 'appropriately designed'. CW cannot be dumped in water, as hundreds of tonnes were at the end of the Second World War; nor can they be buried or burnt in an open pit.

Routine inspection

There are four forms of routine inspection, one relating to each of the schedules of chemicals and one for other chemical facilities.

- Schedule 1 chemicals can only be manufactured in a party's 'single small-scale facility'. These will be subject to monitoring under arrangements to be decided by the Preparatory Commission.
- Facilities handling schedule 2 chemicals may be inspected to ensure that no Schedule I chemicals are present and that Schedule 2 chemicals are not being diverted for prohibited activities.
- Facilities handling Schedule 3 chemicals shall be inspected at random, with a limit to the number each party must accept.
- Other declared large-scale chemical production facilities may also be inspected at random. Again, there is a limit to the number each party must accept.

Challenge inspection

Challenge inspections may be made at any site in the territory of a party and may be made carried out at the request of any party.

The state requesting the inspection defines the perimeter of the site that is to be examined. This is called the requested perimeter. If the inspected state agrees to the requested perimeter, then that is declared the final perimeter of the inspection site.

However, if the inspected state disagrees with the requested perimeter, they may propose an alternative perimeter. The inspection team must be transported to a location on the alternative perimeter. There then follows further negotiations on what is to be the final perimeter. If no agreement is reached, the alternative perimeter is declared to be the final perimeter.

The area within the alternative perimeter must contain the area within the requested perimeter, but there is no specified limit other than it should not be 'significantly greater'.

Organs of the CWC

The Organization for the Prohibition of Chemical Weapons (OPCW) will be the centrepiece of the Convention. It is to be located in The Hague, The Netherlands.

The Conference of States Parties will be the OPCW's principal decision-making body, it is expected that this will meet annually. Every five years a special session is to be held in order to review the operation of the CWC.

The Executive Council will have the executive responsibilities for the OPCW. It will comprise 41 members representing the five regional groupings.

The Technical Secretariat will carry out the work of the OPCW. The Secretariat includes the Inspectorate responsible for carrying out the verification of the CWC and a Scientific Advisory Board.

National Authorities

Each party to the CWC must establish a National Authority to serve as the focal point for liaison with the OPCW and other parties.

Although some have seen these bodies as a purely administrative, number-crunching operation, their scope is much wider. It will be the National Authority that the OPCW will turn to first in order to resolve any question of non-compliance. As the terms of the CWC are set so wide, this could cover many areas.

8 John Adam Street London WC2N 6EZ Telephone 071 925 0867 Facsimile 071 925 0861 This supplement was produced by Richard Guthrie and distributed with *Trust & Verify* No. 35, January/February 1993. Further copies are available on request. © VERTIC 1993

