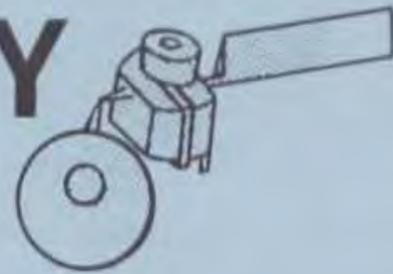


TRUST AND VERIFY



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UN Inspectors in Iraq

Under the terms of the Gulf War cease-fire, the UN Secretary General created a Special Commission to inspect Iraq's "weapons of mass destruction" and to locate the much-publicised stocks of enriched uranium. Current indications are that UN inspectors have located most, if not all, of this uranium (12.5kg of 93% enriched material and a considerable amount of lower-grade material). This was considered by the Commission's Chair, Rolf Ekeus, to be the priority in the Commission's programme of inspection.

In the case of chemical weapons the cease-fire agreement calls for destruction of these stocks within a limited time period of 45 days. Iraq's chemical stocks are very large and many experts believe that the task of locating and destroying them in such a short time is impossible. Marjatta Rautio, a Finnish representative on the 20-member UN Commission told Finnish radio that the time limit was unrealistic. She pointed out that facilities might have to be built for the destruction of chemical stocks which would clearly take more than 45 days.

Elisa Harris of the Brookings Institution in Washington appeared to agree with Rautio's analysis, adding that "I know of no destruction method short of open pit burning or ocean dumping that could come close to these deadlines." In any case such methods are forbidden by "political expediency or international law".

Even more difficult to locate will be any biological weapons, if they exist. Iraq says it has no biological stocks. The United States and others believe this to be untrue. The detective work necessary in tracking equipment sold to Iraq for pharmaceutical or medical research and production and establishing whether or not it is, in fact, being used for its stated purpose, is not only extremely difficult in itself, but also a clear illustration of the problems relating to any international verification arrangements for biological weapons control.

Of course, the inspectors' task will be easier if Iraq cooperates. It has considerable incentive to do so, as the international embargo of Iraqi oil will continue until destruction of chemical and biological agents has begun. Nevertheless, there are fears that not all nuclear and chemical facilities, let alone biological facilities, have actually been announced by Iraq.

The final lessons of this considerable international effort will not be apparent for some time. It is fair to assume, though, that if the UN Special Commission is broadly successful, an important precedent will be set on a number of levels: further UN involvement in verification, reliable procedures for arms control in the Middle East and effective location and destruction procedures for chemical and biological weapons agreements worldwide.

Another angle on the Special Commission's work was provided by Elisa Harris. Some observers have suggested that the UN might become distracted from

disarming Iraq if the feeling grows that Iraq is being unjustifiably singled out in the longer term while neighbouring states continue to escalate their development or purchasing of all forms of arms. Agreements covering the whole Middle East region would clearly be desirable in the long term. Harris's suggestion is that a regional chemical arms disposal plant be built either in the demilitarized zone, Saudi Arabia or North Kuwait, where chemical stocks from all over the Middle East could be destroyed in a future global Chemical Weapons Convention. This would avoid the impression of discrimination against Iraq and make the job of the Special Commission itself much easier.

Meanwhile President Bush has proposed an ambitious plan for controlling weapons of mass destruction in the Middle East. Under the plan, Israel would have to end its nuclear weapons programme while Arab states gave up all chemical weapons over a ten-year period. All nations in the region would also destroy stocks of ballistic missiles with more than a 90 mile range. The Bush plan also included a suggestion that the five UN Security Council Permanent Members should notify each other of all arms sales to the region. It remains unclear how such a plan could be achieved without a political breakthrough and improved relations between Israel and its neighbours, especially in view of Secretary of State James Baker's lack of success in that area.

Suspected Algerian Nuclear Facility

(The following article was contributed by Vipin Gupta)

In January of this year, US intelligence discovered a secret facility under construction in an isolated area 275km south of Algiers. The facility is located within a military exclusion zone and is near a suspected military airbase. US military satellite photos apparently show cooling towers, suggesting the facility includes a nuclear reactor. Based on the size of the cooling towers, US intelligence estimates that the power output of the reactor is about 40 megawatts. Most research reactors are smaller than this (less than 5 megawatts) and most commercial reactors are larger than this (greater than 500 megawatts). According to the *Sunday Times* (28/4/91) Western intelligence is convinced the facility will be used to produce nuclear material for an atom bomb.

Since its discovery, the Algerian government has acknowledged that they are constructing a nuclear reactor facility with Chinese assistance. They insist it is to be used for peaceful, experimental purposes and it will be open to some form of international inspection.

A French SPOT satellite image of the area from 18 May 1989 shows a new, large and highly secure facility between the small cities of Ain Oussera and Birina. The facility appears to be enclosed by at least two layers of security fencing. In between the fencing is some form of no man's land apparently designed easily to detect and

capture intruders. Although one would expect heavy security around a reactor, the size of the no man's land zone is unusually large - about 500 metres across and covering 4.5 square km.

The single road into the facility is very bright, suggesting that it is fairly new. New roads appear bright in satellite images because either the surface has not been extensively used or it is unpaved.

There are two primary sites in the enclosed area which may comprise of several buildings. Both sites cover an area that is comparable to the size of a heavy industry factory. However there is still plenty of room to expand. Only 4% of the enclosed area is currently being used. No cooling towers are visible in the image. It is possible that there are no cooling towers at all. It is also possible that the resolution of the image is not good enough to see the cooling towers or that the cooling towers were built after the date the image was acquired.

According to a US Defence Mapping Agency map, there are two water wells nearby. One appears to be inside the enclosed area and one is just outside the security fencing. The wells would be a useful source of water for operating the reactor.

The *Sunday Times* reported that there is an air defence site near the reactor facility. The satellite image shows two possible surface-to-air missile sites in the area. Both appear as circular formations about 400 metres in diameter with "spokes" as missile launch sites. One is 3.5km west of the city of Oussera and the other 19km south of Oussera. Both are too far away effectively to protect the reactor facility - 25km and 36km respectively.

There could be anti-aircraft artillery batteries around the reactor site. These batteries would be too small to be reliably identified in the satellite image.

The satellite image does not unambiguously reveal the purpose of this facility. It merely shows that Algerians place high value on the facility and that the facility's purpose is related in some way to Algerian national security interests. Nevertheless, the information available is sufficient to cause a degree of international concern about Algerian intentions. The United States have had talks with China over their role in the project. China does not hide their involvement but say they have been assured by Algeria that the reactor is to be used for peaceful purposes only.

(Vipin Gupta has prepared a layout diagram based on available information. Copies are available from VERTIC on request).

France to Join NPT

On June 3rd, the French Government announced it was ready to sign the 1970 Nuclear Non-Proliferation Treaty (NPT). Along with China, it refused to accede to the Treaty when it was opened for signature in 1968. Then President Charles de Gaulle saw it as an attempt to curb the development of an independent French nuclear deterrent.

The change of heart is being interpreted as more of a political move than a practical one. France has in fact abided by the NPT's provisions since 1976. It's attendance at the 1990 NPT Review Conference increased speculation that France was about to join the treaty.

By joining the NPT, France can make a symbolic contribution to nuclear arms control just as the United States and Soviet Union finalise details of the START Treaty. Yet France will not have to make any immediate changes to its own nuclear capability. As Ian Davidson wrote in *The Financial Times* (4/6/91): "Since 1983 France has been offering to join the nuclear arms control process when superpower arsenals had been reduced to the French level."

That offer remains on the table, but Paris makes clear that it is offering no constraints on its nuclear testing programme, which has been reduced to six tests a year. Indeed, The French announcement came less than a month after France began a new series of nuclear weapons tests in the South Pacific.

The French statement also included a veiled reference to China, expressing hopes that other nations would also join the NPT. The statement went on to address other forms of arms control, endorsing British Prime Minister John Major's proposal for a UN arms register, calling for extension of the Missile Technology Control Regime and an end to the manufacture of chemical and biological weapons. France believes that conventional disarmament should be approached region by region. It proposed that the world's major arms suppliers (the five Permanent Members of the UN Security Council) should meet in Paris to discuss a framework for control of the arms trade, with a view to involving the UN General Assembly at a later date.

French Spy Satellites - "Essential"

French Defence Minister Pierre Joxe told the Institut des Hautes Etudes de la Defense Nationale on May 6 that in his opinion French remote sensing satellites are worthy of the same level of political and financial priority as was attached to the French nuclear programme in the 1960s. He added that France would join other European nations in developing a range of satellites to monitor arms treaty compliance and the activities of nations considered to be a threat to peace. Joxe said that satellites should include optical, infrared and radar sensors and should eventually be capable of intercepting communications from the world's trouble spots, reports *Space News* (13-19/5/91).

France has already begun the \$1.5 billion military Helios programme, including two satellites equipped with optical sensors. Helios is due for launch in 1993. While making no complaint about US sharing of information during the Gulf War, that conflict nevertheless illustrated the degree to which western European states rely on the US for their satellite intelligence. As Joxe said, "The stakes in space go beyond the strict definition of defence...They are national. Not to possess this capacity would affect the very status of the nation."

However an unnamed official from a large French company involved in defence and space contracts told *Space News* that France would have difficulty developing the necessary technology for a military radar satellite launch before the year 2000.

Meanwhile, the Western European Union (WEU) is expected to approve the creation of an agency to analyze satellite data from French SPOT and US Landsat satellite some time in June. The possibility of a WEU satellite has not gone beyond preliminary discussion stage.

United States To Destroy Chemical Stocks

President Bush announced on 13 May that he was ready to destroy all existing US chemical stocks and impose a ban on the US use of chemical weapons in any circumstances. The destruction of the weapons is the most significant move since the use of chemical weapons is already banned under the 1925 Geneva Protocol. The announcement was made on the eve of resumption of talks on a chemical weapons convention at the Conference on Disarmament in Geneva.

Mr Bush said that the destruction of US stocks depended on achievement of a global ban on chemical weapons but the move is likely to give fresh impetus to the stalled Geneva talks. Hopes are the highest for some time with many observers suggesting that agreement might now be possible within a year.

Elisa Harris of the Brookings Institution told *The Guardian* (14/5/91) that Mr Bush's announcement represented "a major development...in one whisk of his pen the President has removed two of the three major stumbling blocks to a treaty - the right to retaliatory use as long as chemical weapons exist and the (earlier US position of a) 2 per cent retention of our stockpile." The last main obstacle is challenge inspections of chemical facilities. The US are not keen on such inspections, although the British government appear to be more favourable and might be able to exert a degree of pressure in this area. Foreign Office Minister Douglas Hogg has stated in a Written Answer to Labour MP Paul Flynn that "We consider that a system of intrusive challenge inspection will be necessary to provide an effective verification regime for a future chemical weapons convention" (*Hansard* 23/5/91 column 581). Other questions also remain, such as who is to pay for the destruction of global chemical stocks.

Soviet reaction to the US announcement was swift and positive. The *International Herald Tribune* (24/5/91) reported that the Soviet Union had welcomed Mr. Bush's move and that it, too, would destroy all chemical stocks once a chemical weapons convention had been agreed. The senior Soviet negotiator at the CWC negotiations said that the Bush announcement "opened the way for an agreement with the aim of resolving all outstanding problems before 1992."

CFE Obstacles Overcome

Over six months after it was signed at the Paris Summit in November 1990 the Conventional Forces in Europe Treaty (CFE) is ready for ratification. A meeting between Secretary of State Baker and Soviet Foreign Minister Bessmertnykh in Lisbon at the beginning of June resolved a dispute relating to the transfer of Soviet tanks and other armoured vehicles from army to naval control. The Soviet claim was that these items were therefore not covered by CFE treaty limits whereas the treaty clearly limits all tanks, armoured combat vehicles and artillery in the ATTU area.

In Mr. Baker's words, the position now is that "limits established under the treaty will be respected and observed in all respects." The Soviet Union is now prepared to move and destroy tanks and armour elsewhere to compensate for those previously transferred to naval units. Agreement has also been reached on a number of treaty limited items moved outside the Atlantic to the Urals area covered by the treaty shortly before the treaty was signed. Some of these will be allowed to be

moved to Soviet Asian units. An equivalent number will have to be destroyed or converted to civilian use within the treaty-limited area. The Soviet compromise was agreed by negotiators earlier this month in Vienna. Ratification of the treaty is likely in autumn.

The hold-up in CFE was also hindering final agreement on a Strategic Arms Reduction Treaty (START). Talks had stalled on a number of verification issues. START could now be signed at a forthcoming superpower summit.

In The News

Last INF Missiles Destroyed

The last US Ground-Launched Cruise Missile (GLCM) was destroyed at the beginning of May. Soviet inspectors watched the destruction of the 543rd USAF GLCM at Davis-Monthan Air Force Base, Arizona. A few days later on May 11, the Soviet Union began to destroy its own final 21 SS20 missiles, watched by officials from the US On-Site Inspection Agency. Under the terms of INF each country is allowed 15 short-notice inspections in each of the next five years and ten in each of the following five years.

French Tests Continue

France carried out a nuclear test at Moruroa Atoll in the South Pacific on May 28. The test was the third in three weeks and was double the yield of the previous test on May 18.

Soviet Nuclear Arms Stored In Germany

A report by Robin Gedye in the *Daily Telegraph* (6/6/91) suggests that the Soviet Union has secret stores of nuclear arms and possibly unstable stocks of chemical weapons at bases in eastern Germany. Senior German intelligence sources suspect that the chemical stocks may have been confiscated from the Germans after the 1939-45 War. The Soviet military base at Altengrabow, 50 miles south-west of Berlin is thought to be one of the main depots.

North Korea Relents

North Korea has agreed to reopen negotiations over international inspection of its nuclear facilities. The announcement came after a meeting between North Korea's ambassador in Vienna, Chon In Chan and Hans Blix, Secretary General of the International Atomic Energy Agency. The state of North Korea's nuclear research is unclear but there is some concern that a nuclear weapons programme may be under way.

North Korea possesses research reactors, a fuel reprocessing plant and a uranium enrichment plant. North Korea signed the Non-Proliferation Treaty in 1985 but has still not agreed inspection terms with the IAEA.

India Could Build 50 Bombs

A leading Pakistani atomic scientist has suggested that India has the capacity to build between 50 and 70 nuclear bombs. Munir Ahmed Khan, formerly of the Pakistan Atomic Energy Commission claimed that the West was putting unfair pressure on Pakistan to abandon its own nuclear programme while paying insufficient attention to India.

Biological Weapons Convention Review Conference

The 1972 BWC will hold its third review conference from September 9-27 this year. The conference will consider the impact of scientific and technical developments on the Convention, the relevance of achievements in the field of chemical weapons negotiations and possible modifications to the treaty. It is also expected that a meeting will be held after the review conference to formulate a draft confidence-building and verification protocol for biological weapons, one of the Convention's biggest weaknesses. Such a draft would then be presented to the next review conference.

Japan Calls For UN Arms Controls

Japanese Prime Minister Toshiki Kaifu, speaking at the UN Kyoto Conference on Disarmament, called on the United Nations to establish a system for monitoring conventional weapons trading. He said that his government would be submitting a draft resolution to this effect to the next UN General Assembly in autumn, reports *Defense News* (3/6/91). He also called for tougher safeguards to strengthen the nuclear non-proliferation regime.

Correction

Thank you to David Lowry of the European Proliferation Information Centre (EPIC) for pointing out an inaccuracy in the last edition of *Trust and Verify*. In an item entitled "Soviet Uranium Hoard", a report in *Defense News* was said to have stated that "under the terms of the Nuclear Non-Proliferation Treaty (NPT) the Soviet Union cannot export weapons-grade uranium." Dr Lowry points out that the Soviet Union can, in fact, export weapons-grade uranium to other nuclear weapons states. The NPT does not forbid such exports.

Events

The 3rd Annual Conference on Chemical Warfare: The 2nd Gulf War and the CBW Threat is to be held on 29-30 November 1991 at the Free University of Brussels. For further details contact Information Network on CBW, Landfall, Tregullen, Bodmin, Cornwall, PL30 5BH, UK.

Following on from the successful International Congress "Ways Out of the Arms Race" which took place in London

in 1989, the 3rd International Congress of Scientists and Engineers will take place in Berlin on 29 November to 1 December 1991. The conference is entitled "Science and Peace in a Rapidly Changing Environment". Further details from the VERTIC office or from Verantwortung für den Frieden, Naturwissenschaftler-Initiative e. V., Tegetthoffstr. 7, D-2000 Hamburg 20. Tel: 0049 40 4911647.

Publications

The first part of a special verification report published by *International Defense Review* (IDR) was mentioned in the last issue of *Trust and Verify*. The 2nd part of that report is now available. It is entitled "Tools and Techniques of Verification" and appears in the May edition of IDR.

The Faculty of Physics and Astronomy at the Ruhr Universität Bochum, Germany, has published its first "Verification Research Report". It is based on the 1989 Measurements at Doksy, Czechoslovakia and is entitled Ground Vibration and Acoustic Waves Produced by Land Vehicles of the Warsaw Treaty Organisation.

Overhead Imaging for Verification and Peacekeeping: Three Studies is the title of a report by Allen D Banner, consultant on arms control verification, prepared for the Arms Control and Disarmament Division in the Canadian Department of External Affairs.

Two major reports by the Federation of American Scientists - *Ending the Production of Fissile Materials for Weapons - Verifying the Dismantlement of Nuclear Warheads - The Technical Basis for Action* and *Laser ASAT Verification* are now available. The Dismantlement report was prepared in collaboration with the Committee of Soviet Scientists for Global Security and the Center for Program Studies of the USSR Academy of Sciences.

VERTIC News

The last edition of *Trust and Verify* contained a report on the European Remote Sensing Satellite (ERS-1). A later report on the ERS in the *Observer* newspaper contained an interview with VERTIC Director Dr Patricia Lewis.

Orders are flocking in for *Verification Report 1991*. Don't forget to order your copy from the VERTIC office. All copies will be despatched in July when we receive the book from the printers.

What is VERTIC?

VERTIC is an independent organisation aiming to research and provide information on the role of verification technology and methods in present and future arms control agreements. VERTIC co-ordinates 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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