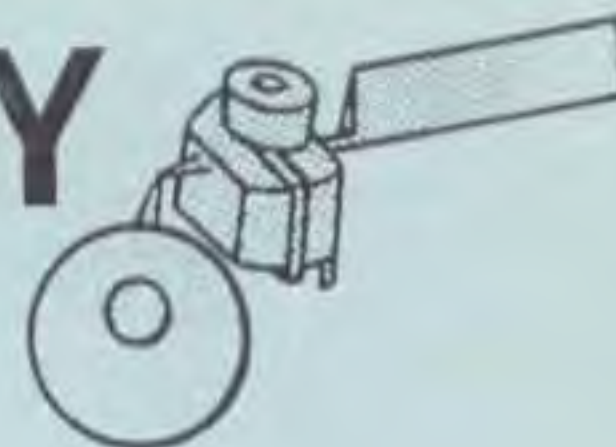




TRUST AND VERIFY



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European Satellite Verification Agency A Possibility

A symposium in Rome on 27/28 March entitled "Observation Satellites - A European Means of Verifying Disarmament", organised by the WEU Assembly's Technological and Aerospace Committee reached agreement in principal on a number of political and technical issues, outlined in *Defense News* (2/4/90):

1. The need for an independent European verification system to verify a CFE agreement, aid in crisis management both in Europe and elsewhere, and contribute to the monitoring of the environment.
2. The need for various levels of independent verification including satellites, aircraft and ground inspections.
3. The need for multisensor satellites with optical, infrared and radar sensors to provide all-weather day and night observation.
4. The need for an agency to manage a minimum satellite system including a ground segment and a space segment.

Several WEU officials have proposed the creation of an agency which would start life as a data interpretation centre, using data already commercially available from the French SPOT and the US Landsat, and develop into an independent verification and reconnaissance agency with its own satellites. At present western Europe relies heavily on US goodwill for its satellite data. However a proposal that France, Italy and Spain make available their Helios satellite, due for launch in 1993, for verification purposes, was rejected by French officials who maintained that information gathered by Helios must remain classified.

At the same time, reports *Space News* (2/4/90), some industrialists in the seven member countries (UK, France, Federal Republic of Germany, Luxembourg, Italy, Belgium and the Netherlands) are pressing for swifter progress towards the creation of an independent agency. Many of them believe they are already capable of developing and operating advanced observation satellites, having mastered the technologies of synthetic aperture radar, infrared sensing and data processing. Government representatives, however, favour slower progress. Indeed, only Dutch Defence Minister Ter Beek supported the position of the industrialists.

The French favour a three stage plan beginning with coordination of data from existing satellites, continuing with training by France of photo-interpreters from other European countries and culminating in "joint contribution to the launch of observation and warning satellites", possibly leading to the creation of a WEU agency.

It is particularly interesting that the Federal Republic of Germany now has what Hans Eschelbacher of the Chancellor's Office told *Space News* (9/4/90) was "a growing interest in jointly developing and operating a space - based Earth observation system." In 1985 the Federal Republic withdrew from the project which

eventually became Helios and has not been seen to be particularly keen on reviving its interest in satellites since that time. Mr Eschelbacher also feels that the European Space Agency could be a suitable body to coordinate the development of a European observation satellite.

It is now up to the WEU Council of Ministers to make the next move, having commissioned a study of national requirements, the evaluation of required technologies and "an inventory of available data supplied by existing satellites".

Chemical Weapons Conference Report

The second annual conference organised by the Centre for Polemology at the Free University of Brussels and the Groupe de Recherche et d'Information sur la paix (GRIP), Brussels, entitled "Chemical Weapons Proliferation Policy Issues Pending an International Treaty", was held on 16 March 1990. Priya Deshingkar of Sussex University's Science Policy Research Unit (SPRU) attended on behalf of VERTIC and the Chemical and Biological Weapons Working Group. The following is an edited version of her conference report.

Participants came from varying backgrounds although the conference was marked by the absence of any Belgian government officials. In all, there were four papers. The Director of the Centre for Polemology, J. Niezing said that the objective of the conference was to focus the attention of the general public, academics, scientists and politicians on the issue of CW which had a nasty history of diplomatic impotence, profiteering by vested interests and pollution of the biosphere. He traced the development of major toxic agents such as Sarin, Soman and the V agents and said that the proliferation of chemical weapons has occurred because of a stagnation in international negotiations. Although chemical weapons proliferation has been viewed as a South-South problem, he said that Europeans should face up to their responsibility in the matter because it was fostered by North-South linkages.

The first paper "Chemical Weapons Proliferation: Security Risks", was presented by Julian Perry Robinson of the University of Sussex in which he questioned common wisdom about the nature and extent of proliferation of chemical weapons. He described inconsistencies in the statements of various US government officials on CW proliferation, which suggest that the problem is being inflated by interests wishing to justify acquisition of such weapons themselves. For instance, there had been occasions when countries, which subsequently denied possessing or even intending to acquire CW, had been accused of having CW. Robinson argued, that the real cause for such discrepancies is the lack of proper definitions of chemical weapons, proliferation and other concepts. Although it is difficult to develop rigid definitions, it is essential to differentiate between terms such as "possessor of CW", "intent to acquire CW", "CW capable" etc, otherwise even those countries with technologically advanced chemical industries could be accused of having CW capability.

Robinson's second point was that the process of CW armament has several stages from R&D, dissemination studies, incorporation of the agents into munitions, right through to integration of these into military strategy and training of personnel. So, obsolete stocks of phosgene or mustard gas which are no longer integrated can hardly be called CW.

Thirdly, he questioned the military significance of CW, pointing out that they had been used in few conflicts despite the supposed ease with which they can be made and used.

Lastly, he said that there were two scenarios which could really foster the spread and use of chemical weapons.

1. In a North-South context the property of "force multiplication", often ascribed to CW, could be exploited to limit the "projection of power" of the enemy because technologies used to extend channels of communications may not be CW-proof.

2. CW could be used by terrorists or even regular forces trying to flush out terrorists.

The second paper, "Beyond Partial Measures: the current state of Chemical Disarmament Negotiations" was presented by Peter Herby of the Quaker United Nations Office at Geneva. Herby said that there had been fears before the Canberra conference last September that the focus of international experts would shift from attempts to develop a comprehensive global ban on chemical weapons to non-proliferation. In order to prevent this 21 countries had issued a statement saying that they believed total eradication of CW weapons was necessary and that the GICCW should not seek to establish a process parallel or counter to the Conference on Disarmament as this would only detract from the vital Chemical Weapons Convention (CWC) negotiations.

Herby said that a comprehensive non-proliferation regime is not really feasible and would only delay things by making it more difficult and expensive for countries to acquire chemical weapons. Herby's view was therefore that a comprehensive global ban on chemical weapons is by far the best option. He said that by all accounts the CWC is nearing completion but political will is needed to speed up negotiations. The choice is not between 100% guarantees and uncertainties in the CWC, but between the existence of a CWC by 1991 or continued chemical weapons proliferation without constraints.

In a discussion, Ian Graham of the International Federation of Chemical Energy and General Workers, Brussels, asked what sanctions would accompany a CWC. Peter Herby said that the only thing on which everyone seems to agree is that the rights and privileges of being a CWC member, such as the right to vote, protection and assistance, will be withdrawn in the event of a violation of the treaty.

The next paper, "Imhausen and Beyond: lessons to be learned from Belgium as a transiting country", was presented by J.P. Zanders of the Centre for Polemology, Brussels. He used the Imhausen-Rabta affair as a case study to gain insights into the types of trade channels which can lead to a country acquiring technology, expertise and chemical compounds needed to produce chemical weapons. He described Rabta as an example of a second generation proliferation where the country is a potential source of proliferation. Up to now, countries in the South have been viewed as recipients rather than suppliers of chemical warfare technology and expertise.

The last paper "E.C. Policy Initiatives for Curbing Chemical Proliferation", was presented by Bernard Adam of GRIP, Brussels. It looked mainly at the state of

European regulations concerning chemical weapons. Although new and more comprehensive legislations are being proposed, there is opposition from some members. For example, UK, Belgium and France would rather see the CD negotiations speeded up than broadening the scope of E.C. regulations. Adam said that the E.C. has a complementary role to play in halting the spread of chemical weapons.

Concluding remarks were made by Joachim Badelt. He felt that a chemical weapons treaty is still a long way from completion and that a bilateral agreement between the two superpowers is more likely. However, the participants appeared more optimistic about a speedy completion of the CWC.

A full version of this report can be obtained from the VERTIC office.

US to Hasten Gas Withdrawal but May Sue to Acquire New Gas Shells

The US Embassy in the Marshall Islands has made public the timetable for moving its nerve gas stockpile from Europe to the Pacific where, according to a Pentagon statement, destruction will begin in 1994. The arms were initially to be moved in 1992, but towards the end of 1989 the decision was made to accelerate the withdrawal. At the time officials described it as a favour to Chancellor Kohl.

The move to Johnston Atoll, used as a launching ground for nuclear missile tests in the 1960s, depends on the publishing of the environmental impact statement required by law but a draft report by the US Army claims that disposal of the weapons "can be done in a safe and environmentally acceptable manner."

Church leaders in the Pacific area, however, say that the plan would perpetuate the "misuse of the Pacific as a dumping site for nuclear and chemical waste." The US Army has installed an incinerator on the atoll and if tests are successful is likely to begin incineration of nerve gas munitions already stored there later this year. A Defense Department statement said that "operational verification testing will be concluding over the next several months."

Despite this apparent willingness to pursue the destruction of chemical stockpiles, however, the Bush Administration is pressing on with production of nerve gas shells. Elisa Harris, a chemical weapons expert at the Brookings Institution in Washington, says that the US is pursuing programmes for the production of two chemical weapons: the so-called Big-Eye binary bomb and artillery shells containing Sarin nerve gas. The US Army's plans to manufacture over a million nerve gas shells have been delayed by the lack of thionyl chloride but the only two companies based in the US which manufacture it, Mobay Corporation of Pittsburgh and Occidental Chemical Corporation have both refused to sell it. Gerd Wilcke of Mobay told the Washington Post "In this day and age who wants to be involved in providing chemicals that go into chemical weapons?"

It is somewhat ironic that one of the companies in question is a subsidiary of Bayer AG, the German company which so recently provoked US criticism of the German government for allowing companies to be involved with Libya's controversial Rabta chemical plant, which the US earlier suggested was manufacturing Sarin.

Elisa Harris confirmed that the Pentagon plans to compel the two companies to supply the chemical under the 1950 Defence Production Act. Ms Harris also believes that the

Pentagon's 1991 appropriations request for \$168 million for its chemical programmes is likely to face problems in Congress, where many now feel that there should be an immediate abandonment of chemical weapon production.

None-the less, a Defense Department spokesperson, Steven Roy, said the department was making "every effort" to obtain thionyl chloride from foreign sources.

CFE Negotiators Focus on Verification

NATO and Warsaw Pact negotiators turn their attention to verification issues at the Vienna talks on Conventional Forces in Europe (CFE), it is believed that the two sides are approaching a compromise.

NATO is proposing a regime based on a formula for 500 "inspection-team days" with one day defined as time spent by inspectors actually at the site of verification. The proposal has not yet been broken down to indicate exactly how many inspections should take place per year at declared sites. State Department sources point out that any CFE verification regime is likely to be based on such a formula because CFE verification will rely heavily on random sampling techniques as opposed to flat inventory as in the case of the INF treaty.

Independent estimates put the likely number of inspections under the NATO proposal at 350 per year at NATO facilities and 800 at Warsaw Pact facilities. The Warsaw Pact negotiators have not rejected the idea and do accept that there will have to be a degree of asymmetry. However they do not believe the difference between the two sides should be so great. Although difficult negotiations obviously remain to be completed, one problem at least is now believed to have been overcome, namely verification of the conversion of certain types of attack helicopter to civilian use.

Stanley Sloan, an arms control analyst with the Congressional Research Service and former US negotiator at the MBFR talks, the predecessor of CFE, says that as a result of pressure to conclude a treaty swiftly, certain more complex verification issues might be left until after the broad framework of a treaty is agreed.

UK Defence Estimates

The British government's 1990 Defence Estimates had little specific information on verification. However, in the section headed "Command, Control, Communication and Information" the statement acknowledged that "Current arms reduction proposals - in particular those for Conventional Forces in Europe (CFE) - will place high demands on C3I systems to ensure efficient control of remaining forces and to assist verification..."

The statement also referred to the disagreement over START verification between the US and the Soviet Union and the Soviet decision to dismantle its phased array radar system at Krasnoyarsk which it now admits is in breach of the ABM treaty; the six Soviet inspections at RAF Molesworth and RAF Greenham Common under the terms of the INF treaty; and the "efforts of the United States and the Soviet Union to conclude verification protocols for the 1974 Threshold Test Ban Treaty (TTBT) and the 1976 Peaceful Nuclear Explosions Treaty (PNET)...Under the terms of the verification protocols, each party would have the right to use hydrodynamic and seismic methods to monitor nuclear tests on the territory of the other party in the case of tests above an agreed yield."

The statement continues " But as thresholds are reduced verification becomes more difficult and more important. Progress will depend on technical advances in verification as well as progress elsewhere in arms control and the attitudes of other states. A Comprehensive Test Ban remains a long term goal, but for the foreseeable future the UK's security will depend on deterrence based in part on the possession of nuclear weapons. There will be a continuing requirement to conduct underground tests to ensure that our nuclear weapons remain effective and up-to-date" (Since the end of 1987 the UK has conducted one nuclear test).

Verification also gets a mention in the section on "Control of Chemical Weapons". The section briefly mentions the series of practice challenge inspections of military facilities which the UK is carrying out.

In The News

START - 50% Cuts Not a Reality: Verification Problems Make June Signing Unlikely

There have been two major setbacks to hopes for the conclusion of a successful agreement on strategic arms reduction (START): cuts agreed under the treaty would not, in fact, amount to 50% reductions in most categories of strategic weapons and the US Secretary of State Baker and Soviet Foreign Minister Shevardnadze agreed that the signing of a START agreement at the June Summit was now not likely because of differences over the small print of verification arrangements.

It is unlikely that new proposals will be made at this stage, however. It is perhaps more likely that negotiators will try to overcome existing problems over verification and other issues and push the current treaty through, as some members of Congress advocate, and immediately embark on a second START process. Supporters of this position say that the advantage of this approach is that it will allow swift implementation of the agreement's provisions for 13 different types of weapons inspections, involving thousands of US and Soviet personnel. The experience of these verification measures will be invaluable in ironing out difficulties in any future START-2 accord.

Israel Launches Military Satellite Hours After Iraq Threat

Only 24 hours after Iraqi President Saddam Hussein threatened to wipe out half of Israel with chemical weapons, a statement seen to many as an indication that Israel military superiority in the Middle East is now at least partly countered by its neighbours, the Israeli space agency launched a satellite believed to be carrying a military reconnaissance satellite. The Ofek-2 satellite was, said Prime Minister Shamir, "an indication of Israel's ability to confront the dangers it faces." The timing of the launch was widely regarded as a deliberate attempt to answer President Saddam Hussein's threats. The launch also proved that Israel has a powerful rocket capable of carrying a warhead.

Ofek-2 has been described as identical in appearance to the earlier Ofek-1 but with better protection against temperature changes, improved navigational equipment and two-way communication. Israeli officials deny that the satellite is a military reconnaissance probe and say it is in fact an inactive, experimental satellite, placed in a low orbit and due to fall to earth after only two months. However, Yuval Neeman, Head of the Israeli space agency, said that the next launch would probably carry a permanent, active satellite.

Missile Discovery

The Daily Telegraph (3/4/90) reports that several dozen missiles discovered in East Germany, Czechoslovakia and Bulgaria have led to concern in Washington that the United States might have been misled before the signing of the Intermediate-range Nuclear Forces (INF) treaty. If this is indeed the case Congressional backing for forthcoming treaties might be in danger, writes Ian Brodie. "The point at issue is whether or not the US knew about the conventionally-armed East European SS-23 missiles before the signing of the treaty." Officials have begun to search records for details of what was said about the transfer of missiles to Warsaw pact allies. A State Department official has been quoted as saying "If we had known about these missiles before the INF treaty we would not have recommended that Ronald Reagan should sign it." US intelligence confirms that the GDR has 24 SS-23s, which it is planning to destroy, while Bulgaria has 24 which it might wish to retain and Czechoslovakia has fewer than 10.

Verification Should Provide Basis of European Security

An article by Flora Lewis in the *International Herald Tribune* suggests that the experience of arms control verification might provide the basis for security in the new Europe. Current approaches to the problem are either to promote continuance of the narrow bloc to bloc negotiations, despite the disintegration of the Warsaw Pact, or to pursue "mutual security" where each nation guarantees the peace and stability of every other.

Lewis believes that there is as yet no basis for the second of these positions while the first is out of date. She feels that "A better approach would be to build on practical measures instead of trying to institute concepts. The verification regimes being worked out to support arms control agreements offer a solid base. Most important will be the system to monitor reductions of conventional forces in Europe....As now negotiated the verification regimes contain no restraints beyond exposure. But that is already a powerful deterrent to a secret arms build up....When they have gone into effect and states come to feel that they know what confronts them and have adequate warning against new threats, the political climate will change, making broader agreements possible."

SPOT 2 Cleared

France's SPOT 2 Earth observation satellite was cleared for commercial use by the French space agency CNES on 23 March, having passed its two month trial since its

launch on 21 January. SPOT 1, in service since February 1986 is likely to remain in service until June at the earliest.

EOSAT To Sell Soviet Satellite Images

Space News (2/4/90) reports that the Earth Observation Satellite Co., operator of the US Landsat satellites, is shortly expected to sign a contract to sell images from the Soviet Union's Soyuzkarta satellites in North and South America. After computer enhancement, these images would result in pictures with a resolution of approximately two metres in diameter, considerably more detailed than images currently available from Landsat, whose images go down to about 30 metres, or the French SPOT, with 10 metre resolution.

VERTIC News

VERTIC and Imperial College Third Annual Short Course

The third Short Course on the Technologies of Arms Control Verification took place at Imperial College, London from 26-30 March. The course, organised jointly by VERTIC and Imperial College is designed to offer non-specialists a thorough and detailed introduction to the methods and technologies that are or might be used in the verification of arms control treaties.

This year's course attracted participants from a considerable range of bodies and from several different countries. Among those represented were the British Ministry of Defence and Foreign Office, Carnegie Mellon (Pittsburgh, USA), Defence Staff from Finland, Indonesia the Netherlands and Sweden, the European Proliferation Information Centre, Greenpeace, IANUS (FRG), Kings College London, SHAPE, as well as manufacturers of defence equipment.

Sessions covering the verification of all areas of arms control, including nuclear testing, proliferation and chemical and biological weapons were led by course staff drawn from the Foundation for International Security, Harwell Laboratory, Imperial College, Leeds University, the University of Hamburg, Oxford University and VERTIC.

New London Telephone Codes

Please note that from 6 May VERTIC's area code will change from 01 to 071

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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