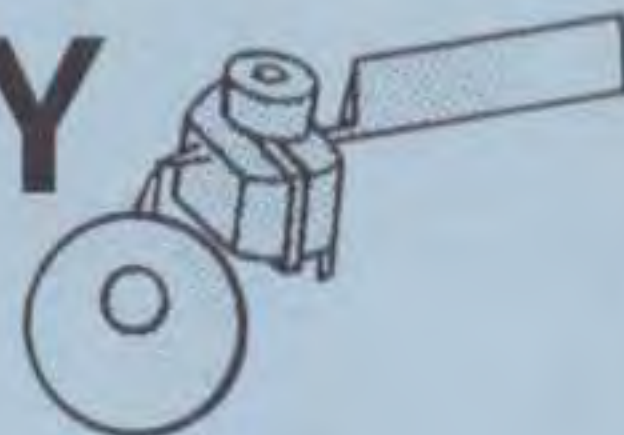




TRUST AND VERIFY



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USA and USSR Finally Make A START

As the G7 Economic Summit drew to a close in London on July 17th, an announcement was made after a meeting between Presidents Bush and Gorbachev that a summit meeting would take place in Moscow on July 30th and 31st. The long-awaited Strategic Arms Reduction Treaty (START) agreement is to be signed at that meeting.

The implication is that the one remaining stumbling-block over the classification of new missiles, including their payload and throw-weight, has been sorted out and final details ironed out for the signature of the two Presidents. The two other problems regarding downloading (how many warheads a missile can carry) and data denial (ensuring mutual access to information broadcast by missiles during test flights) were resolved by US Secretary of State Baker and Soviet Foreign Minister Bessmertnykh in earlier meetings.

The treaty will reduce various categories of strategic missiles by amounts ranging from 30% - 50%, and will include wide-ranging and comprehensive verification protocols.

A full analysis of the START Treaty and its verification arrangements will appear in the next issue of *Trust and Verify*. A briefing paper on the verification provisions is available from the VERTIC office.

UN Inspectors in Iraq - Bluff and Double Bluff

The dangerous game of bluff and double bluff which appears to have been taking place in Iraq with regard to inspections of nuclear facilities under the Gulf cease-fire arrangements may be nearing its end. United States threats to bomb suspected nuclear facilities and other military targets and the Iraqi refusal to allow UN inspectors to visit a key facility led to considerable tension. As commentators weighed up the seriousness of President Bush's threat and the political capital that stood to be gained by making it, UN inspectors said that a number of nuclear sites had been identified which had not previously been acknowledged by Baghdad. However the UN deadline of July 25 for disclosing all the Iraqi nuclear capabilities was passed without a complete disclosure.

Arab Leaders, including PLO Chairman Yasser Arafat and Egypt's Hosni Mubarak have been encouraging Saddam Hussein to cooperate fully with the UN. On July 7th Iraq provided the UN team with a list of eight locations, six of which have been visited. Informed sources said that the inspectors had been astonished by their findings, including the use of calutrons or electro-magnets to enrich uranium. Most critical components had been manufactured locally. The use of calutrons is an outdated method of enriching uranium used by the United States during the Second World War on its initial nuclear weapons programme. The modern method of enrichment relies on the centrifuge process. Centrifuge plants are

easier to locate than calutrons, which can be moved around relatively easily, albeit slowly. The UN inspectors discovered this for themselves when they attempted to follow a convoy, believed to be carrying calutrons, between locations at which the Iraqis would not allow inspections.

On July 15th, UN inspectors were handed a revised list by the Iraqi Government. The Chief Inspector of the UN team, Dimitri Perricos, gave no immediate reaction regarding the accuracy of the list but the time needed for an assessment seems to have provided some breathing space. Mr Perricos did comment that there did not appear to be any glaring omissions but that a full analysis would be required. Iraq had earlier admitted to having three previously undisclosed uranium enrichment plants, a fact that would place it in violation of the Nuclear Non-Proliferation Treaty (NPT). Iraq claimed to have produced only 0.5 kg of slightly enriched uranium, not suitable for nuclear weapons, from these programmes. However the disclosures are being treated as an admission by Iraq that it was indeed pursuing a nuclear weapons programme.

Meanwhile both Britain and France have agreed to help recover and render harmless the fuel from two Iraqi research reactors. Britain will be represented in the effort by the Atomic Energy Authority and British Nuclear Fuels. One reactor was undamaged by coalition bombing during the Gulf War, making the reactor fuel easily recoverable. One third of the second reactor's fuel, however, is still buried under rubble. In both cases the fuel remains in the reactor core.

Glimmer of Light for Open Skies

NATO has made a new attempt to break the deadlock in the almost forgotten Open Skies negotiations which broke down last year. An Open Skies Agreement would allow former Cold War enemies to make surveillance flights over each other's territory and would clearly have important implications for verification of CFE.

The negotiations broke down for a number of reasons. Foremost among them was the fact that the Soviet Union wanted data collected by surveillance planes to be shared by all signatories and the same high-quality sensors to be made available to all signatories. The Soviet Union also wanted a limit of 25 flights per year over its territory while the United States wanted a limit of 100.

The new NATO position goes some way to a compromise. NATO has agreed to offer a standard limited suite of data sensors that every aircraft can use, since the export of high-technology to eastern European countries is no longer as tightly controlled as it once was. However CoCom-limited equipment will remain restricted. NATO has also agreed that data gathered should be shared and that a copy of the data be made available to the host country. The new proposal also says that NATO nations will fly in Soviet aircraft but that the owner of the aircraft will have to meet the cost.

The new proposals were delivered to Moscow by Canadian NATO officials Ralph Lysyshin and John Bryson on April 30th. The Soviet Union indicated that it was intending to stand by its earlier assertion that some areas of Soviet territory would have to be off-limits. Flights over Moscow, for example, are forbidden for safety reasons. They also continued to argue in favour of flights over US bases abroad. There was disagreement over whose responsibility it was to negotiate this proposal with the countries concerned. At one stage a date in June was suggested for resumption of negotiations. As yet no response has been received from the Soviet Union regarding the substantive points in the NATO proposal so the negotiations are unlikely to resume before the Autumn.

Conference on Disarmament - Recent Documentation

Three recent CD publications have particular verification significance. The first, dated June 3rd 1991 and designated CD/1079, consists of the text of the French Arms Control and Disarmament plan.

The plan states that "Chemical weapons must be eliminated. Bacteriological weapons must not be produced. Existing nuclear arsenals must be reduced to the lowest level consistent with the maintenance of deterrence. The non-dissemination of nuclear weapons remains an imperative, whereas the use of nuclear energy for peaceful purposes is justified. The dissemination of ballistic technologies must be strictly controlled...As regards the so-called conventional weapons, a balance of forces should be maintained, or introduced, everywhere...arms exports are consequently to be strictly controlled..."

There is nothing particularly new in this statement, except perhaps for the fact that it is the clearest statement for some time on the French priorities for arms control and disarmament.

Specific verification considerations are as follows. The report states that France will propose the addition of a verification protocol to the Biological Weapons Convention when the review conference takes place in September of this year. It recommends the "development of outer-space confidence-building measures in the form of a "code of conduct" for civilian and military satellites." It also proposes the development of "regional confidence-building and security measures...transparency...mutual information on force capabilities and strengths" as a means to achieving regional security. It also calls for "strict regional application of the category regime laid down for nuclear, bacteriological and chemical (NBC) weapons and ballistic missiles" along the lines of the category constraints imposed on Iraq in the Gulf cease-fire arrangements.

The report places the onus on the UN Security Council to encourage the development of the necessary treaties and regional arrangements and concludes with the slightly ambiguous statement "This presupposes that the members of the Security Council and in the first place its permanent members will set the example."

The second document is a report by the UK entitled *Verification of the Chemical Weapons Convention: Practice Challenge Inspections at Civil Chemical Plants*. The report is dated June 5th 1991 and designated CD/1080.

Following earlier UK practice inspections at government facilities which, it said, proved that "there was no site so sensitive that we could not allow some form of access within the site", the most recent inspection attempted to

establish whether the same applied to civil chemical plants and whether commercial confidentiality could be protected whilst "providing sufficient access for the inspectors."

The three main conclusions of the report were as follows:

- The need to protect commercial confidentiality can be reconciled with the need for extensive access. However, it may be difficult for companies to prepare in advance for an inspection unless it has help from a government team of experts.

- Inspectors will require qualified assistants to carry out sampling. Element specific analysis and giving companies the opportunity to carry out analysis of samples themselves where possible, under the guidance of the inspectors, would help to protect confidentiality.

- "Although breach of the Convention might be more difficult to detect at a chemical site than at a military site, a wide-ranging inspection based on examination of plant equipment and checking of records would present a significant risk of discovery to an evader."

The third document, dated June 11th 1991 and designated CD/1081 is a report by Australia and New Zealand on Verification of a Comprehensive Test Ban.

The report correctly points out that a verification regime is central to the achievement of such a ban, but that political will is just as important, especially as there is "substantial scientific evidence...establishing the feasibility of verifying a nuclear test ban".

The report goes on to consider seismic, airborne and on-site verification techniques. It concludes, not surprisingly, that verification of a comprehensive test-ban is possible using currently available techniques. These have been considered in some detail in earlier editions of *Trust and Verify*.

US Chemical Inspection Proposal

The US has introduced a proposal at the chemical weapons talks in Geneva to limit the scope of on-site inspections at undeclared chemical facilities. The joint US-UK proposal, co-sponsored by Australia and Japan, appears to reverse earlier decisions to open US military and governmental sites for international inspection.

The new proposal permits inspectors access to the perimeter of a suspected site but not necessarily entry into the facility. States which are challenged would have the right to choose aerial inspection or an observation post such as a tower, ladder or hoist located outside the perimeter of the facility. This proposal also signals a shift by the UK which previously advocated a compromise permitting on-site inspections while protecting national security through measures such as covering sensitive equipment.

The challenge inspection issue is one of the largest obstacles in the path to a global ban on chemical weapons. US officials argue that a severe verification regime would make it more difficult to win support for the ban among Third World countries and that the proposal is a reasonable starting point for negotiation on the issue between those for and against intrusive verification measures.

Critics of the proposal claim that it favours national security at the expense of verification. Moreover, they argue that the terms of verification may be so loose as to undermine the terms of the treaty.

NATO's Verification Coordination Committee

In a recent edition of *Defense News* (24/6/91), Leo Verbruggen, NATO's Head of the Directorate of Verification and Information Systems, outlined his view of the importance of NATO unity in the field of verification.

The first major challenge to NATO unity on verification will be the Conventional Forces Europe (CFE) Treaty. After its ratification by the 22 NATO and former Warsaw Treaty Organisation signatories, NATO's 16 nations will be entitled to carry out a total of 270 inspections in the Soviet Union and Eastern Europe. In the first three and a half years of the treaty's life, tens of thousands of treaty limited items must be destroyed or converted to civilian uses. These must all be verified.

Verbruggen stresses the importance of the Verification Coordination Committee (VCC) in addressing what he sees as the three key areas of activity: coordination of planning, inspection support and data processing. He suggests that already the VCC has facilitated information exchange between NATO nations, a process which is vital to the success of CFE. A standard approach to post-inspection reporting and information sharing has also been developed, says Verbruggen, along with a common training process for NATO inspectors.

NATO nations have already set up national verification teams, which are being trained to carry out inspections under CFE. The importance of the VCC to NATO is principally one of coordination of activity. However one hopes that this coordination might also contribute to mutual confidence-building between NATO and the Eastern European CFE signatories. Verbruggen concludes, "The overall aim has been to eliminate areas of overlap, maximise efficiency of effort and keep costs to a minimum. The intent is to produce a result whereby country "A" is sure that when country "B" inspects country "C", the report and evaluation from country "B" gives "A" the same degree of confidence as if its own inspectors had been there."

South Africa to Sign NPT

Following swiftly behind France's announcement on June 3rd that it was ready to sign the Nuclear Non-Proliferation Treaty (NPT), President F.W. de Klerk of South Africa announced on June 27th that he too will accede to the NPT and submit all nuclear facilities to the inspection of the International Atomic Energy Agency. The move is widely expected to lead to a nuclear-free zone in Southern Africa. A number of Southern African states have up to now refused to sign the Treaty until South Africa made the first move. It is hoped that these states will now follow suit. Zambia and Tanzania both recently signed the treaty and this is likely to have influenced South Africa's decision.

South Africa has three nuclear facilities and the capacity to enrich uranium. Many also believe that South Africa has carried out one nuclear test in 1979, possibly in cooperation with Israel. President de Klerk denied that any test had ever taken place but confirmed that South Africa "certainly" had developed "the capacity and potential to produce a nuclear explosive device" but that the signing of the NPT "will allay any fears that South Africa will ever make use of such devices."

Leonard Spector of the Carnegie Endowment for International Peace has suggested that South Africa has been able to produce around 50kg of highly enriched uranium per annum since 1981. This would be sufficient for two or three 20kt devices every year.

President de Klerk referred to the end of the Cold War and the end of any threat of a conventional military attack on South Africa by any of its neighbours as the principal reasons for his decision to sign the Treaty after four years of vigorous negotiation.

The addition of Tanzania, Zambia, and in particular France and South Africa to the list of NPT signatories will give the Treaty a much needed boost after the 1990 Review Conference ended without agreement on a final communique, leading to fears for the Treaty's future when it comes up for renewal in 1995.

In The News

CFE Compromise - Verification Implications

The compromise achieved between the United States and the Soviet Union regarding the movement of relatively new Soviet equipment outside the Treaty-limited area and destruction of older items to the East of the Urals has certain implications for verification. The new equipment moved to its new location will not be subject to the CFE verification regime. Although this raised some concerns within NATO, this was tempered by the knowledge that the equipment will still be observable by American satellites, as will the older equipment due to be destroyed outside the Atlantic-to-the-Urals area. In its declaration after the compromise was reached the Soviet Union stated that it would destroy the agreed quantities of equipment "in accordance with procedures which provide sufficient visible evidence that (it has) been destroyed or rendered militarily unusable. The States parties to the Treaty shall be notified in advance, giving the location, number of types of conventional armaments and equipment to be destroyed or converted."

Data Processing - A Key Verification Concern

A recent conference in Washington sponsored by the Armed Forces Communications and Electronics Association, Fairfax, Va., focussed on the problems associated with processing the vast quantities of data expected to be generated by arms control verification in the future, starting with the CFE Treaty.

Experts' views reported in *Defense News* (10/6/91) suggested that future technology will concentrate on processing a greater volume of data relating to countries' weapons stockpiles rather than on sophisticated new monitoring techniques. Michael Swetnam of the GTE Corporation, Stamford, Conn., said that there should be a greater focus on balancing sophisticated sensors and remote sensing satellites with more straightforward on-site inspections used since 1987 under the INF Treaty verification arrangements.

CFE Cascading To Go Ahead

Barbara Starr reports in *Jane's Defence Weekly* (6/7/91) that the Bush Administration "is preparing to submit legislation to Congress allowing the USA to participate in a NATO programme to transfer excess US weapons among European allies." The Equipment Transfer and Equipment Rationalization Program, or "cascading" as it has become known, is likely to go ahead now that the United States and the Soviet Union have reached a compromise over outstanding CFE-related issues. The transfer of 2,500 tanks 1,000 ACVs and 175 artillery pieces has already been negotiated. Starr's article, "Winners and Losers in the NATO CFE Share Out", includes extensive details on holdings, entitlements and transfers.

Formal End to Warsaw Pact - Soviet Troops Leave

Jane's Defence Weekly (13/6/91) reports the formal dissolution of the Warsaw Pact by the six remaining members, Bulgaria, Czechoslovakia, Hungary, Poland, Romania and the Soviet Union. A protocol was signed in Prague on July 1st and will come into effect as soon as it is ratified by the six parliaments concerned. Soviet Vice President Gennady Yanayev called for the dissolution of NATO and for its leaders to recognise that political realities no longer justified its survival. Polish President Lech Walesa, however, considers NATO to have "an important role in safeguarding European security in the new situation".

The last Soviet troops remaining in Czechoslovakia and Hungary withdrew during June. Troops remain in Poland and eastern Germany. The latter will leave by 1994. No date has yet been set for withdrawal from Poland.

North Korea Tests Nuclear Detonators?

Despite its recent pledge to allow IAEA inspections of its nuclear facilities, (reported in the June 1991 issue of *Trust and Verify*), North Korea has reiterated its condition that US nuclear weapons believed to be stockpiled in South Korea be inspected too.

At the same time, South Korea's President Roh Tae Woo has claimed that intelligence monitoring indicated that North Korea had tested devices capable of detonating nuclear weapons. Some specialists suggest that North Korea could create an atomic bomb by the mid-1990s, although others feel this is too short a timescale.

The detonation tests, reported by the *International Herald Tribune* (28/6/91), are said to have been carried out in the last two months at a nuclear facility in Yongbyon, 90km north of Pyongyang, capital of North Korea, and 300km north-west of Seoul, capital of South Korea. Conventional explosive devices which could be used to trigger nuclear explosions are said to have been identified as the subject of the tests.

The South Korean Government refused to say what kind of sensors were used to monitor the test or whether it had taken place underground.

Publications

"Verification to the Year 2000" is a new publication prepared for the Arms Control and Disarmament Division, External Affairs and International Trade, Canada. Written by Sidney Graybeal, George Lindsey, James Mackintosh and Patricia McFate, the report considers recent and current trends in bilateral and multilateral verification, technological requirements and the evolution of future trends in verification.

A thorough guide to the debate within the Conference on Disarmament on achieving a comprehensive ban on nuclear testing has recently been published. "In Pursuit of a Nuclear Test Ban Treaty" is available from the United Nations Institute for Disarmament Research.

"The Verification Revolution" is a useful and concise publication produced by the Union of Concerned Scientists covering major verification issues relating to US verification methods, START, ballistic missile defence and ASAT weapons and nuclear test bans.

VERTIC News

VERTIC Director Dr Patricia Lewis was recently interviewed in the London *Daily Telegraph* newspaper (13/7/91). The article described Dr Lewis's background and the foundation of VERTIC as well as evaluating the recent experiences of UN inspectors in Iraq.

Happy belated Birthday to us! We omitted to announce that *Trust and Verify* was two years old last month. The first issue appeared in June 1989. Back issues are still available from the VERTIC office.

The VERTIC office will be moving to another central London location on 1 September. Change of address and telephone number notifications will be sent out during August.

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.

Voluntary Subscriptions: The production of this bulletin entails considerable cost to VERTIC so if you would like to pay a voluntary subscription of £12 (individual) or £20 (organisation) for a year's issues, your contribution would be gratefully received. Thank you to those who have sent a subscription. Anyone wishing to contribute information for inclusion in "Trust and Verify" should send it to the VERTIC office.

"Trust and Verify" is compiled and edited by John Grounds; research and production by Julie Cator.

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