



GCSP Report

Assessing Compliance with Arms Control Treaties

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Preface

Major or minor breaches of bilateral or multilateral arms control, non-proliferation or disarmament agreements are a recurrent dilemma for international relations. As it is widely recognized, the violation by a State of its obligations deriving from an agreement related to international security can lead to a major crisis and, in the area of nuclear proliferation in particular, cause domino effects on regional or global security. The Iranian or North Korean nuclear crises, as well as the past failure of the international non-proliferation system to detect the Libyan programmes, are in everyone's mind.

But the issue is broader and applies to all arms control and disarmament agreements. Old and recent history showed that attempts by international organisations or concerned States to solve certain real or alleged breaches ended up in failures or dead ends. One major reason is the fact that perceptions of non-compliance can differ radically according to the States Parties. Another major reason is the existence of loopholes, legal vacuums or strategic antagonisms within the international system.

The Centre for International Security and Arms Control Studies (*Centre d'études de sécurité internationale et de maîtrise des armements – CESIM*) and the Geneva Centre for Security Policy (GCSP) have agreed to conduct a study with the following objectives:

- a. Identify the issue on the basis of all the available historical and political-strategic experience, both in arms control and beyond, in particular through the examination of case studies;

b. Recommend new approaches likely to improve the international management of situations of non-compliance;

c. Contribute to a simultaneous strengthening of the global non-proliferation regime.

The study is conducted under the leadership of CESIM by the *International Expert Group on Global Security (IGGS)*.¹ Selected through co-optation, the members of the IGGS are senior high-level experts with considerable political, diplomatic, legal or technical experience in all areas of international security and arms control. Since its establishment in 2002, the Group has been pursuing two main objectives:

a. Through the strategic and institutional analysis of existing treaties and regimes and their verification mechanisms, learn useful lessons from the experience accumulated in the implementation of non-proliferation and disarmament regimes. This work was reflected in a first report published with the support of the Joint Research Centre of the European Commission: *Generic Aspects of Arms Control Treaties: Does One Size Fit All? – Lessons for Future Agreements on Global Security* (JRC Report EUR 21077 EN, 2004).²

b. Through a review and evaluation of new threats, identify the crucial problems of international security and the approaches they call for in the framework of existing international regimes or possible new legal or political instruments. In this area, the Group first worked on the security of international container traffic, which led to the publication of a report by the Center for Technology and National Security of the US National Defense University (*Container Security – A Proposal for a Comprehensive Code of Conduct, Defense and Technology, Technology Paper No. 9*, January 2005)³ and the organisation of a seminar by the OSCE in Brussels in February

1 The IGGS is composed of Dr. Anthony Aust (UK), Dr. Ralph Alwine (USA), Prof. Masahiko Asada (Japan), Dr. Ola Dahlman (Chairman, Sweden), Dr. Edward Ifft (USA), Prof. Nicholas Kyriakopoulos (USA), Ms Jenifer Mackby (USA), Dr. Bernard Massinon (France), Amb. Arend Meerburg (the Netherlands), Dr. André Poucet (Belgium) and Prof. Bernard Sitt (France).

2 Available at: http://cordis.europa.eu/fetch?CALLER=PUBL_LIB&ACTION=D&DOC=1&CAT=PUBL&QUERY=1190899754809&RCN=200417468.

3 Available at: http://www.ndu.edu/CTNSP/Def_Tech/DTP9%20Container%20Security.pdf.

2005. The second topic which the Group has been working on since 2005 is non-compliance.

Since April 2003, the IGGS has organised several one-week working meetings in Ispra, Paris, Washington and in the Netherlands, with the support of the Joint Research Centre of the European Commission and several national institutions and ministries. In order to conduct the study on non-compliance, the IGGS met at the GCSP in Geneva from 18 to 25 April 2007, including, on 20 April 2007, in the form of an international seminar opened to GCSP course participants and staff and to representatives of “International Geneva”.

This project was made possible by the collaboration between CESIM, supported by the French Government (*Centre d'Analyse et de Prévision* – Policy Planning Staff – of the Ministry of Foreign Affairs), and the GCSP.

The present report contains two parts:

Part One: the Study conducted in 2006 and 2007 by the International Expert Group on Global Security (IGGS) on assessing compliance with arms control agreements;

Part Two: the report of an international seminar organised on this topic at the GCSP on 20 April 2007. This section includes most of the presentations made at that seminar after their publication was authorised by the speakers.

We are pleased of this fruitful cooperation between a group of leading independent experts as well as governmental and non-governmental institutions, and we are convinced that its results will be of great benefit to the international community. Indeed it touches upon one of the most complex aspects of international security: how to ensure compliance with bilateral and multilateral agreements on arms control and the non-proliferation of weapons of mass destruction.

We wish to thank all those who contributed to this work, and encourage a wide dissemination of this report.

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Part One

Assessing Compliance with Arms Control Treaties

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I. Introduction

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Arms control and non-proliferation treaties are an essential part of international security. Non-compliance with them can threaten international security, although obviously some types of non-compliance are more serious than others.⁴ Understood in its widest meaning, non-compliance is the failure by a party to comply with the obligations placed on it by a treaty. Non-compliance amounts to a breach of the treaty.⁵

Compliance is frequently not a black and white issue. Many complexities may enter into the assessment of whether or not a country has cheated, including the international situation at the time, political considerations,

4 For Weapons of Mass Destruction verification and compliance, see T. Findlay et al., “WMD Verification and Compliance – The State of Play”, VERTIC Report, 22 Oct.2004, and “Weapons of Mass Destruction Verification and Compliance: Challenges and Responses”, ISROP REPORT, Nov. 2004. See <http://wmd-commission.org>. For a wide review of the past and future perspectives of nuclear non-proliferation, see Kurt M. Campbell, Robert J. Einhorn, Mitchell B. Reiss, Eds., *The Nuclear Tipping Point – Why States Reconsider their Nuclear Choices*, Brookings Institution Press, 2004.

5 A “treaty” is defined in the Vienna Convention on the Law of Treaties (1969) as an international agreement concluded between States in written form and governed by international law (i.e. legally binding in international law), whether embodied in a single instrument or in two or more related instruments (e.g. an exchange of notes) and whatever its particular designation (i.e. title or name).

technical considerations, allies within the United Nations Security Council (UNSC) as well as outside, etc. All of these considerations contribute to the difficulty of determining non-compliance. While no violation should be ignored, not all violations should be treated equally. Although it is a truism that by entering into any treaty a State gives up some of its sovereignty, it does so because it sees benefits in the treaty. But merely giving up some sovereignty does not mean that a State will always carry out the treaty fully, or even at all. There may be political or technical reasons for non-compliance with any treaty.

10 Most arms control treaties, such as the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the 1972 Biological Weapons Convention (BWC), the 1993 Convention on the Prohibition of Chemical Weapons (CWC), and the 1996 Comprehensive Nuclear-Test-Ban Treaty (CTBT), are multilateral and open to all States, although some States are not parties. Others are multilateral but limited to certain States of, or particularly concerned with, a particular region, such as those concluded within the Organization for Security and Cooperation in Europe (OSCE) – i.e. the 1990 Conventional Armed Forces in Europe Agreement (CFE), the 1990 Open Skies Treaty – or those establishing Nuclear Weapons Free Zones (NWFZs). Other treaties are bilateral, such as the US-USSR 1991 Strategic Arms Reduction Treaty (START)⁶ and the US-USSR 1972 Anti-Ballistic Missile Treaty (ABM). There are also arrangements (i.e. non-treaty instruments which are not legally binding⁷ but nevertheless important), such as the OSCE's so-called Vienna Documents, a series of documents providing confidence-building measures related to military exercises, demonstrations of new weapons systems, etc. Although they create only political commitments, compliance with them can be as good as for a treaty, mainly because they are regional or among like-minded States. This paper is primarily concerned with compliance with multilateral treaties,

6 Under the 1992 Lisbon Protocol three of the successor States to the Soviet Union (Belarus, Kazakhstan and Ukraine) agreed to become parties to START, but that treaty retained its essentially bilateral nature, the Protocol being a succession treaty.

7 See Anthony Aust, "Modern Treaty Law and Practice", Cambridge University Press, 2000, 17-8 and Chapter 3.

though some important bilateral treaties are used to illustrate some of the issues and how they were resolved.⁸

Breaches by a State, even relatively minor ones, of obligations incurred under arms control treaties related to international security have created dilemmas in international relations. Although the focus in the last few years has been on specific States such as Iran, North Korea and Libya and compliance with the NPT, the issue is broader and applies to all arms control treaties.⁹ Major or minor breaches can have domino effects on regional and international stability in this context. Attempts to deal with these breaches and alleged breaches have been inconsistent and not always effective. This suggests that the international community needs to develop a more systematic approach.

The overall record is mixed. On the one hand, most treaties are generally operating successfully. Some have already completed their reduction goals. These include the 1987 US-USSR Intermediate-Range Nuclear Forces Treaty (INF) and the START and CFE Treaties. INF and START¹⁰ have successfully eliminated thousands of deployed systems, while CFE has eliminated over 80,000 military items. Under the CWC, about one fourth of the 71,000 metric tonnes of chemical weapons and about one third of the 8.6 million items related to chemical weapons¹¹ (shells, bulk storage containers, etc.) in the world have been eliminated, and reductions are continuing. Other treaties¹² have kept weapons of mass destruction out of outer space, Antarctica and the deep seabed. On the other hand, there are important compliance issues. It is useful to look at the experience with arms control compliance more

8 See "Adherence and Compliance with Arms Control, Non-proliferation and Disarmament Agreements and Commitments," Department of State Publication 11238, Aug. 2005 (<http://www.state.gov/documents/organization/52113.pdf>)

9 See IGGS Report, "Generic aspects of Arms Control Treaties: Does One Size Fit All? – Lessons for Future Agreements on Global Security", European Commission Joint Research Centre, Report EUR 21077, Ispra, Italy, 2004

10 See Jenifer Mackby and Edward Ifft, "The End of Start," Washington Post, April 20, 2007, www.washingtonpost.com/wp-dyn/content/article/2007/04/19/AR2007041902773.html

11 www.opcw.org

12 See the 1967 Outer Space Treaty, the 1959 Antarctic Treaty, the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed (Seabed Treaty)

generally.¹³ This can enable us to draw some useful overall conclusions about the strengths and weaknesses of current approaches and make some recommendations.¹⁴

An important and widely known example of issues of non-compliance is illustrated by the NPT. The 2005 NPT Review Conference¹⁵ was widely considered to have been disappointing and some thought it represented a missed opportunity.¹⁶ Much of the controversy at the Review Conference concerned compliance issues about Iran and North Korea as well as complaints regarding the performance of the nuclear-weapon States (NWS) with respect to Articles I, IV and VI. These articles deal respectively with the promotion of peaceful uses of nuclear energy through cooperation and exchange, and with the global commitment to nuclear as well as general and complete disarmament. In this context, there was dissatisfaction among some States Parties with respect to the alleged lack of implementation of the 13 steps that had been agreed at the 2000 Review Conference (These steps include, inter alia, early entry into force of the CTBT, which was rejected by the US Senate in 1999; negotiation of a multilateral fissile material cut-off treaty (FMCT); application of the principle of irreversibility to nuclear disarmament; and the “unequivocal undertaking by nuclear-weapon states to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament”). These issues may resurrect themselves at the next Review Conference if countries do not prepare themselves well in advance in order to avoid a repeat performance. However, by the time of the 2010 Review Conference, preparations for which have already begun, the issues of Iran and North Korea may or may not have

13 George Perkovich, Jessica T. Mathews, Joseph Cirincione, Rose Gottemuller, Jon B. Wolfsthal, *Universal Compliance – A Strategy for Nuclear Security*, Carnegie Endowment for International Peace, March 2005

14 See for instance *Proliferation News and Resources* on the CEIP website: <http://www.carnegieendowment.org/npp/State>

15 For the 2005 NPT Review Conference context and background documents, see website: <http://www.un.org/events/npt2005/presskit.pdf>. See also D. Howlett, J. Simpson, H. Müller, B. Tertrais, “Effective Non-Proliferation – The European Union and the 2005 NPT Review Conference”, *Chaillot Paper n°77*, ISS-EU, 2005; and Wade Boese, “Nuclear Non-proliferation Treaty Meeting Sputters,” *Arms Control Today*, July-August, 2005

16 Jim Wurst, “Majority Views Sidelined at NPT Review Conference,” *Global Security Newswire*, May 31, 2005 (http://www.nti.org/d_newswire/issues/2005_5_31.html).

been solved in a satisfactory fashion and the international community may be faced with a new set of compliance issues.

Article III of the NPT requires all non-nuclear-weapon States (NNWS) to conclude with the IAEA a Safeguards Agreement under which the IAEA is able to verify that the NNWS are complying with the NPT. It is also desirable that each of the NNWS conclude an Additional Protocol to their Safeguards Agreement in order to help the IAEA ensure that there are no possible undeclared nuclear materials or activities. Looking to the future, with the hunger for energy accelerating over the coming decades, more States may decide to satisfy their energy needs using nuclear power. This increase will create additional demands on the IAEA safeguards system. The additional strain on the system may result in more disputes and, consequently, more referrals to the United Nations Security Council.¹⁷ Some believe that the IAEA already has a difficult time assessing information about diversion of nuclear material. In any case, how will the international community react if new nuclear power stations are constructed in countries where terrorists are known to live? If Egypt, Jordan, Indonesia, Malaysia, Morocco, Nigeria, and others install nuclear stations, will their neighbours be concerned that those countries might not adequately secure and control the materials, or might develop nuclear weapons?¹⁸ The implementation of the Additional Protocol will take considerable time for new nuclear power countries. Thus far 80 countries have brought this Protocol into force. These non-proliferation issues may have to be grappled with over the coming years.

The Biological Weapons Convention (BWC) of 1972 is perhaps the quintessential example of the conundrum posed in constructing a verification architecture. While verification must ensure compliance with the provisions of a treaty, it must also safeguard proprietary, private and national security information that is not related to compliance with the treaty. Sometimes these interests conflict, as for example, in the negotiations on a verification protocol for the BWC. Some in the business and defence communities feared

17 See Humphrey Hawksley, "It's Time to Rewrite an Outdated Treaty", *International Herald Tribune*, April 18, 2007.

18 See Sharon Squassoni, "Risks and Realities: The New Nuclear Energy Revival," *Arms Control Today*, May 2007.

that international inspectors on an on-site visit to a biotechnology plant or biodefence research facilities might discover national security and confidential business information that could help potential economic competitors or potential attackers. The BWC verification is problematic in part because the quantities of prohibited materials are so small that prohibited activities can basically be carried out in a closet. The US stated that rather than increasing confidence in compliance, the proposed system of declarations and on-site inspections in the Protocol would enable a proliferator to conceal illicit activities. Other countries believed that classified biodefence research in which some agents are used to assess the development of countermeasures to be beyond the limits of the BWC. The fact that Boris Yeltsin acknowledged in 1992 that the former Soviet Union had violated the BWC for a number of years would seem to establish that the treaty needs a verification mechanism. However, the negotiations on a verification protocol failed in 2001.

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As precedent, in the negotiations on the Chemical Weapons Convention, representatives of industry were very concerned about the possibility of their commercial secrets being divulged during inspections of their plants. How could inspections of a commercial plant be performed to satisfy the mandate of the inspectors that no illicit activities are taking place, and still protect the industry's proprietary information? Years of negotiations that included many consultations and site visits by the negotiators to laboratories and commercial entities finally resulted in a verification protocol for the Treaty prohibiting the use of chemical weapons.

II. Background

In thinking about the compliance problem, there may be a perception that it is a simple issue – some States are cheating and should be punished. Indeed, there have been a few flagrant highly publicized examples of cheating (i.e. Iraq and the NPT, BWC, and the 1925 Geneva Protocol; North Korea and the NPT). However, most of the compliance issues involve more ambiguous and

controversial activities and complex circumstances.¹⁹ For example, over the past 15 years, the IAEA has found a number of States to be in non-compliance with their respective Safeguards Agreements. Consequently, it could not verify the correctness and completeness of the declarations. None of the affected States has been formally found in non-compliance with the NPT itself. (The DPRK withdrew from the NPT in 2003).

In addition to cheating, suspicion of non-compliance may result from other causes. Following are some examples from three such categories: differing interpretations of treaty obligations, differing assessments of evidence, and unforeseen circumstances.

1. Differing Interpretations of Treaty Obligations

An important class of compliance issues results from conflicting interpretations of the treaty. Differences in interpretation may rise in a number of ways, such as:

- a. From the start there is an ambiguity in the treaty, which may have been deliberate, or discovered only later.
- b. Subsequent practice has shown that parties interpret a provision in different ways.
- c. Sometimes, for purely political reasons, a party chooses to interpret a provision more broadly or narrowly than other parties. This may well amount to a breach of the treaty.

Some examples of these problems follow.

Under the Partial Test Ban Treaty (PTBT) of 1963, disputes regarding Soviet practices frequently arose because of differing interpretations of language. The words “debris” in English and “osadki” in Russian were equally authentic, but had slightly different meanings. This resulted in disputes as to whether Soviet underground nuclear explosions which caused only gaseous radioactivity to be present outside of Soviet borders were breaches.

Shortly after the CFE treaty was signed in 1990, a dispute arose as to whether or not naval infantry and coastal defence were included in the constraints. A

¹⁹ Office of the US Secretary of Defense, Proliferation: Threat and Response, January 2001 (<http://www.fas.org/irp/threat/prolif00.pdf>).

prompt series of high-level exchanges resolved this issue rather quickly, with the Soviet Union accepting the Western interpretation.

A major illustration of differing interpretations of treaty language occurred under the ABM Treaty. During the Reagan administration, the United States switched from the traditional or “narrow” interpretation of what activities were allowed to the more permissive “broad” interpretation²⁰. This caused quite serious disputes until the United States returned to the traditional interpretation during the Clinton administration, and then finally withdrew from the Treaty in 2002.

2. Differing Assessments of Evidence

There are a number of cases where the evidence is clear to everyone. However, there may be differing assessments of what the evidence means.

During the 30 years the ABM Treaty was in effect, there were frequently arcane technical questions such as whether surface-to-air missiles, which were allowed, had been flight tested in a mode that made them useful for ABM defence (“in an ABM mode”), which was prohibited, or whether US planned activities under the Strategic Defense Initiative were legal.

A major dispute arose over a large tracking radar built near Krasnoyarsk. The Soviet Union claimed it was for space tracking (and therefore legal), but later admitted that it was a breach of the ABM Treaty and dismantled it.

Different assessments of seismological observations from Soviet underground nuclear explosions created uncertainties that the yields of some explosions might have exceeded the 150 kiloton (kt) limit in the 1974 US-USSR Threshold Test Ban Treaty (TTBT). Based on experiences from their past test explosions at the Nevada Test Site, US authorities concluded that some Soviet explosions at Semipalatinsk may have exceeded the limit,²¹ whereas European authorities, based on experiences from the Eurasian continent, held the view that the observations were consistent with explosion yields

20 Daryl Kimball, “The Nuclear Arms Control Legacy of Ronald Reagan,” *Arms Control Today*, July-August, 2004.

21 The size of the Soviet explosions were largely overestimated due to the fact that the rock deep beneath Nevada, part of a young and active geological area, absorbs a large proportion of the seismic energy compared to the Soviet test site, which is a more stable, older area.

below 150 kt. To resolve this problem (even though the TTBT was not yet in force), the two States agreed to conduct in 1988 two calibration explosions, one in each country (Joint Verification Experiment) with yields measured by on-site equipment. These tests were considered a major success by both sides. They also negotiated a verification Protocol to the TTBT that allowed for on-site measurement of the yields of specified future tests. These provisions were not extensively implemented²² because of moratoria on nuclear testing in the United States and the Soviet Union.

An odd flash occurred over the Indian Ocean south of Africa on September, 22, 1979 (the “South Atlantic Flash”). The optical flash was detected by one Vela satellite (United States satellite network for detection), but it was not clear whether the signal originated from an atmospheric nuclear blast, banned by the PTBT, or if it was some atmospheric phenomenon. At the time no effective detection system existed in that region, and neither radionuclide nor seismic information associated with the event was reported. Although conflicting claims have been made, no agreed conclusion has been reached as to the nature of the event, in spite of considerable scientific investigations.

After the Vietnam War the United States claimed that an unknown type of biologically produced chemical weapon (toxin), allegedly provided by the Soviet Union, was being used against the Hmong tribe in Laos and later Cambodia by Laotian and Vietnamese forces. This would have been a breach of the BWC. (Although the BWC does not expressly ban the use of biological weapons, the prohibition of their use was affirmed at the Fourth Review Conference in 1996.) No convincing proof was presented, while some scientists claimed that this “yellow rain” consisted of bee droppings. An ad hoc team of UN inspectors was denied access to the area, and the heavily debated controversy is still not solved.²³

A number of countries have been accused of breaching the BWC. In 1979 an outbreak of anthrax killed at least 64 people in Sverdlovsk, in the Soviet Union. In response to international enquiries, the government claimed at the

22 Two tests were monitored in the US under the Verification Protocol but none were monitored in the Soviet Union because of the Soviet declared moratoria on nuclear testing

23 See Jonathan B. Tucker, “The ‘Yellow Rain’ Controversy: Lessons for Arms Control Compliance,” *The Non-Proliferation Review*, Spring 2001

time that the deaths were caused by intestinal anthrax from infected meat, due to naturally occurring anthrax spores. President Boris Yeltsin said later (in 1992) that the outbreak was caused by a leak at a biological weapons production facility in the city. He also acknowledged that the Soviet Union had maintained a biological weapons programme in breach of the BWC and he pledged that the programme would be terminated. Although Iraq claimed to have ended its biological weapons programme in 1991, it was believed that Iraq maintained the programme throughout the 1990s. In March 1997 Cuba accused the United States government of a “biological attack” in which *Thrips palmi* insects were allegedly dropped from a crop-dusting plane in October 1996. No definitive conclusion was reached on this among the States Parties of the BWC. At the Fifth Review Conference, in 2001, the United States made allegations against four States Parties – Iraq, Iran, North Korea, and Libya.

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A small seismic event was detected and located beneath the Kara Sea in the vicinity of the northern Russian test site at Novaya Zemlya on August, 16, 1997. There were concerns that a nuclear explosion had occurred, which would have breached the TTBT and the object and purpose of the CTBT. United States-Russian consultations were held and additional data were obtained to clarify the event. It was concluded that the event was an earthquake.²⁴

Compliance concerns arose regarding Libya and the NPT, CWC and BWC, although States were unable to provide conclusive evidence of breach. A combination of diplomacy and the interception in October 2003 of a German ship carrying gas centrifuges heading to Libya contributed to Libya’s giving up its nuclear aspirations. After several months of secret negotiations with the United Kingdom and the United States, Libya decided in December 2003 to abandon its clandestine WMD development programmes and to come back to full compliance, in particular under the control of the IAEA.

Prior to the 2003 Iraq war, evidence from National Technical Means, as well as human sources, was used to allege the presence of illegal weapons, equipment and activities in Iraq. These included chemical weapons storage

²⁴ David Bowers, “Was the 16 August 1997 Seismic Disturbance near Novaya Zemlya an Earthquake ?” *Bulletin of the Seismological Society of America*; August 2002; Vol. 92; No. 6; 2400-2409.

facilities, mobile biological weapons production facilities, etc. Further physical evidence obtained on the ground, along with interviews of Iraqi officials, during and after the war, showed that much of the earlier evidence had been wrongly assessed.

3. Problems with Verification Regimes

Uncertainties in detecting non-compliance may be caused by the structure and operation of each verification regime. Recent treaties such as the CWC and CTBT specify in detailed terms how the verification regimes are to be organised, what technologies to use, what data to collect and how to collect them, and how to analyse the collected information. Significantly, these treaties prohibit the technical organisations that collect and analyse the data from drawing conclusions based on the results of the analysis.

4. No Clearly Defined Mechanism

Careful examination of treaties reveals that sometimes there is no clearly defined mechanism for determining non-compliance. In the NPT, the words “compliance” and “non-compliance” are not mentioned at all. The IAEA applies safeguards “for the exclusive purpose” of verifying non-diversion and deterring diversion “by the risk of early detection” [INFCIRC/153]. Treaties such as the CWC and CTBT use both terms with modifiers that may give rise to uncertainties.

Another important cause of uncertainties is the constraints imposed by a treaty on the specification and operation of the verification regime. To detect breaches of specified obligations, it is necessary to establish a verification regime capable of doing so. In practice, particularly in multilateral treaties that delegate the collection of verification information to international technical secretariats, the verification regimes place constraints on the type and amount of information that they are allowed to collect. Recent treaties such as the CWC and CTBT specify in detailed terms how the verification regimes are to be organised, what technologies to use, what data to collect and how to collect them, and how to analyse the collected information. Such constraints

limit the information available for detecting breaches and may complicate the determination of non-compliance. Another possible complication may arise if the verification system generates false positives.

In contrast, the NPT shows admirable flexibility in that the IAEA tailors Safeguards Agreements to specific facilities. However, these agreements are also the product of a negotiation. The international monitoring system of the CTBT, which is quite extensive and has impressive capabilities, was not only the product of objective detection criteria agreed in advance on the basis of scientific advice. It also involved the willingness of individual States to host specific types of stations in specified locations. In the case of the CWC, one measurable obligation is the ban on diversion of specified chemicals from legitimate to prohibited uses. Although the Convention calls for extensive reporting and provides for large numbers of inspections, neither may be adequate to the task of detecting such diversions in all cases.

5. Unforeseen Circumstances

An example of unforeseen circumstances came about when the Soviet Union and the Warsaw Pact dissolved, making the CFE Treaty not readily applicable to the new situation. The parties solved the problem by replacing the Treaty with an adapted version. Additional examples of unforeseen circumstances might include equipment specified in a treaty that is no longer available, creation of new dangerous chemicals that are not on the CWC agreed list, and States that are not able to meet deadlines specified in the treaty due to circumstances beyond their control. According to the Vienna Convention on the Law of Treaties (1969), a fundamental change of circumstances with regard to those existing at the time of the conclusion of the treaty may not be invoked as a ground for withdrawal from a treaty unless those circumstances constituted an essential basis of the consent of parties to be bound by the treaty, and the effect of the change is radically to transform the extent of obligations still to be performed under the treaty.

III. Issues in Determining Non-compliance

1. Legal Considerations

Compliance has many aspects. It starts with the enactment of legislation to enable a party fully to carry out its treaty obligations. How its obligations are incorporated into the law of the State is a matter for its constitution, law and practice. Although in many legal systems a treaty in force for the State is supreme law, legislation may well still be needed to enable the obligations to be enforced by the State. It does not matter how this is done so long as the State is legally able to carry out all the obligations and see that all public and private entities also comply. Depending on the requirements in the treaty, the State must be able, for example, to make it illegal to hold material or carry out activities prohibited by the treaty, and require owners and occupiers of property to allow prompt access to inspectors on verification missions. Mission personnel must also be given such privileges and immunities as the treaty requires. The legislation must also enable persons or companies to be prosecuted for infringements of the legislation.²⁵ In short, mere ratification of the treaty does not mean that the State will be able to do all these essential things.

According to the Vienna Convention on the Law of Treaties of 1969, breaches are divided into two different categories: material and non-material breaches. A ‘material’ breach is defined as ‘the violation of a provision essential to the accomplishment of the object and purpose of the treaty.’²⁶ A material breach entitles another party to invoke it as a ground for suspending in whole or in part the rights of the guilty party in relation to the innocent party, or even to terminate the guilty party’s participation in the treaty in relation to the innocent party.²⁷ Whether there is a breach (material or otherwise) depends entirely on the nature of the obligation, the facts and the circum-

²⁵ See, for example the UK Nuclear Explosions (Prohibition and Inspections) Act 1998, enacted to enable the UK to ratify the CTBT.

²⁶ Vienna Convention on the Law of Treaties (1969), Art. 60(3)(b). Para(3)(a) provides that a repudiation of a treaty which is not sanctioned by the Vienna Convention is also a material breach, but that situation is not at the heart of this paper.

²⁷ Aust, 236-8.

stances. A record of non-compliance on apparently small matters (such as a refusal to allow access to an inspector) could raise a serious issue and even amount to a material breach. In other words, although there are gradations in the seriousness of non-compliance, they are all breaches of the legal obligation to carry out the treaty.²⁸ (In this paper the term ‘violation’ of treaty obligations is not used since it may be read as limited to material breaches, whereas given the importance for international peace and security of arms control treaties, all breaches should be considered serious.)

As treaties evolve and become more complex, it becomes more difficult to characterize an activity, event or omission as breach; more so to discriminate between material and non-material breaches. This difficulty can be attributed to two factors. One is the desire of the negotiators to make a treaty on a given subject comprehensive. Contrast the simple obligation under the Geneva Protocol not to use chemical and biological agents in warfare to the list of obligations under the CWC; these range from destroying existing weapons and not producing new ones and not to “assist, encourage or induce, in any way, anyone to engage in any activity prohibited...”. Similar language is found in the CTBT. Also the NPT requires the parties “to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament...”. Such obligations are not measurable. Thus, it is difficult, if not impossible, to apply objective criteria for determining non-compliance. It is even more so for determining whether a breach or a combination of breaches would amount to a material breach.

The second factor contributing to the difficulty of characterizing an activity, event or omission as breach, is ironically the well-intentioned desire to implement verification regimes capable of detecting breaches of the extended list of obligations. Treaties may include gaps between the data collected by the monitoring system specified in a treaty and those necessary to detect a breach in any of the obligations. The data which States are required by the CWC to provide to the OPCW on the allowed production of Schedule 2 chemicals are

²⁸ Art. 26 of the Vienna Convention on the Law of Treaties provides, ‘Every treaty in force is binding upon the parties to it and must be performed by them in good faith.’

insufficient for detecting diversion of such chemicals.²⁹ Similar problems arise by the inclusion of rigidly prescribed procedures for allowing inspectors to visit specified facilities.³⁰ For treaties containing specific verification arrangements that cannot be easily modified, the verification regime may not be able to use advances in technology for improving the detection of breaches.

2. Types of Treaties

Some treaties have their own verification regime. There are similarities and differences among the various existing regimes.³¹ In the decades after the entry into force of the NPT in 1970 with its extensive IAEA safeguards regime for Non-Nuclear-Weapon States (NNWS), many States were increasingly willing to accept verification measures, sometimes rather intrusive ones. In bilateral treaties on restricting or banning particular categories of nuclear missiles (INF and START), the United States and the Soviet Union agreed on extensive exchanges of information as well as mutual inspection activities on specific sites. The CWC involves numerous types of declarations and inspections (over 3,000 have taken place), while detection of nuclear explosions under the CTBT is accomplished by a worldwide monitoring system, though the treaty is not yet in force.³² Moreover, these two treaties allow for short notice intrusive challenge inspections. Short notice inspections became also part of the Additional Protocol (AP) of the IAEA safeguards regime, the AP providing more possibilities to find undeclared nuclear activities. In this connection it should be underlined that the use of satellite imagery for monitoring purposes is now also widely accepted.

A specific category of treaties (and other arrangements) under the auspices of the OSCE include extensive exchanges of information, large-scale destruc-

29 J. Lundin (Ed.), "Verification of Dual-use Chemicals under the Chemical Weapons Convention: The Case of Thiodiglycol", *SIPRI Chemical and Biological Warfare Studies*, No. 13, Oxford University Press, New York

30 M. Daoudi, R. Trapp, "Verification under the Chemical Weapons Convention" in *Verifying Treaty Compliance*, R. Avenhaus, N. Kyriakopoulos, M. Richard, G. Stein, eds, Springer, 2006.

31 Op.cit. Ref. 1.

32 Masahiko Asada, "CTBT: Legal Questions Arising from its Non-Entry-Into Force," *Journal of Conflict and Security Law*, Vol.7, No.1 (April 2002) 103-117.

tion of heavy conventional weapons and numerous challenge inspections to verify troop movements and remaining stocks under the Vienna Document and the CFE Agreement. Moreover, the Open Skies Treaty allows for low-altitude monitoring overflights in the OSCE area, including the whole territory of the Russian Federation and of the United States. Another category of conventional weapons, anti-personnel mines, was banned under the Ottawa Convention of 1997.

Another specific category of treaties are those establishing NWFZs. In addition to the previously mentioned Antarctic Treaty, these cover Latin America, the South Pacific, South East Asia, Africa and Central Asia (the latter two not yet in force). IAEA full-scope safeguards apply to all the States of the zones, and provide for the possibility of special inspections (sometimes in cooperation with the IAEA).

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In an effort to fulfil the need for verification of compliance with the BWC, States Parties worked in scientific meetings on the aspects that should be considered and then negotiated for six years on a verification protocol. The negotiations failed in the end, however soon thereafter, in 2002, the States Parties to the BWC decided to hold a review process over three years prior to the Sixth Review Conference in 2006 to consider aspects of the treaty such as national implementation measures, a possible code of conduct, biosafety and biosecurity measures, alleged use, and other issues that might strengthen the Convention. These annual meetings were considered useful because they kept the topic alive to the stakeholders, they addressed topics that had not been considered in connection with biological arms control previously, such as infectious disease surveillance, scientific codes of conduct, and it involved a number of international scientific societies such as the World Organization for Animal Health (OIE), the International Police Organization (INTERPOL), the World Customs Organization (WCO), the World Health Organization (WHO), etc.

Although the (2006) Sixth Review Conference of the BWC did not produce large-scale results, it reaffirmed the general prohibitions in Article I of the Treaty, which is now understood to cover new scientific and technological developments such as the ability to synthesize infectious viruses. It also adopted a new four-year intersessional work programme for 2007-2010 that

focuses on biosecurity (including pathogen security measures, education of scientists, oversight of dual-use scientific research, and professional codes of conduct), national implementation of the BWC, international exchanges in the use of biological science and technology for peaceful purposes, and promoting the capacity for detection, diagnosis, surveillance, and response to outbreaks of infectious diseases.

3. Who Decides if There Has Been Non-compliance ?

It all depends on the provisions of the treaty. None of the arms control treaties have a provision under which a dispute can be referred by a party or parties to an independent judicial third party (such as an arbitral tribunal or the International Court of Justice) and the alleged guilty party is required to answer the allegation and accept the judgment. On the contrary, some treaties include provisions that seem to be designed to exclude the establishment of an unambiguous and impartial mechanism for determining non-compliance. The CTBT empowers the Comprehensive Nuclear Test-Ban Treaty Organization (CTBTO) to implement provisions for “international verification of compliance” (Art. II, para. 1). The final judgement about compliance is left to the States Parties. The CTBT and the CWC provide explicit mention of taking disputes to the International Court of Justice for an advisory opinion (CTBT Art.VI, para. 2; CWC Art.XIV, para. 5). (See also Article VII of the Relationship Agreement between the UN and the OPCW.)

Treaties have a variety of means of dealing with allegations of non-compliance. One of the weakest is perhaps the BWC, which provides only that a party can refer alleged non-compliance to the UN Security Council – a sledgehammer which has never been used. The more usual provision is for an allegation of non-compliance to be investigated by verification missions and for any later action to be decided by either an executive council established by the treaty or by a meeting or conference of all the parties (see the CWC (Art. XII), CTBT (Art. II, IV, V) and the IAEA Statute (Art. XII(C))). However, such councils or meetings are political bodies where it is the parties who decide what to do, or not to do. Instead of dealing with the dispute dispassionately (as should a court or tribunal), extraneous political considerations often

intrude and can prevent any action being taken against a guilty party. Nor do such bodies usually have the power to suspend the rights of a guilty party.³³

Under Article XII.(C) of the IAEA Statute, the IAEA Board of Governors must refer to the UN Security Council (as the prime body charged with the maintenance with international peace and security) any non-compliance with an IAEA Safeguards Agreement.³⁴ Although it can wield considerable legal power (authorizing the use of force, imposing economic sanctions, etc.), the Security Council is a highly political body. Even when there is the necessary majority in favour of action, this can be prevented by use of the veto by one of the five permanent members.

4. The Problem of Determining Intent

Some agreements have built into them the necessity of considering the purpose or intent of some activity or substance. For example, both the CWC and BWC distinguish between “offensive” and “defensive” purposes and between “peaceful” and “hostile” intent.³⁵ This seems to require a judgment which could be difficult and controversial. For example, laboratory activities involving anthrax could be legal or illegal, depending upon the use to which such activities are directed, e.g., a vaccine or biological weapons. Certain chemicals used for insecticides can also be used in the process of making chemical weapons. These difficulties seem to be inherent and generally accepted and not the result of poor drafting. Transparency and clear explanations of such activities can help to allay suspicions. A similar problem occurs when equipment is “dual use.” This problem occurs in chemical, biological, nuclear and missile activities and equipment.³⁶ A danger here is that the

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33 Art. V of the CTBT allows the Conference of the Parties to restrict or suspend rights.

34 Under such agreements, the IAEA is authorized by the State concerned to verify independently the findings of the State’s system of accounting and control of nuclear material by checking them for correctness and completeness. The technical conclusions of the verification activities are expressed in terms of “material unaccounted for over a specific period”.

35 See for example CWC Art. II and Annex VI(A); BWC Art. I and Art. II.

36 Judith Miller, Stephan Engelberg and William Broad, “US Germ Warfare Research Pushes Treaty Limits,” *The New York Times*, September 4, 2001. See also Judith Miller, “Next to the Old Rec Hall, a Germ-Making Plant,” *The New York Times*, Sept. 4, 2001.

perception of a double standard may be created if certain capabilities in one State are accepted, while the same capabilities in another State are not.³⁷

There are undeniably political and other factors in compliance suspicions and judgments. These may include whether a particular State is perceived to be “friendly” or “responsible” or not. A State’s historical record of compliance or non-compliance may be taken into account. There may be concerns about how some future regime in a State will behave. For example, how some States have viewed both Iran and Iraq has changed dramatically over the past 20 years, and decisions about arms transfers and assistance with nuclear programmes by those States have changed accordingly.

This is seen clearly in the concern about the possibility that a State could acquire nuclear capabilities through legal activities under the NPT, and then rapidly move to a weapons programme, either by violating the NPT or withdrawing from it after.

One could not say that intent to breach a treaty is itself a breach, so long as no action is taken contrary to the object and purpose of the treaty. Although the question of intent may be a relevant issue, there is no objective measure for making a judgment about it, particularly in the absence of an independent and impartial international body. Also, the subjective nature of judgments about intent (or purpose) does carry the possibility of abuse, such as using compliance concerns as an excuse for furthering political objectives that have nothing to do with arms control.

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5. Recent NPT Issues

The situation regarding Iran has generated a great deal of attention and illustrates the complexities in determining compliance issues. Iran has been under constant pressure from the international community to explain its undeclared nuclear activities, which could possibly be devoted to the acquisition of a military nuclear capacity. An Iranian opposition group revealed in 2002 that some large installations in Iran were meant for a nuclear programme. Subsequent IAEA inspections in some sites revealed that over 18 years Iran

37 A commonly cited example is Israel’s nuclear capability.

had been doing nuclear research, some of which should have been declared. Iran accepted Additional Protocol-type IAEA verification measures, but after intensive inspections, the IAEA still could not guarantee that Iran was in full compliance with its Safeguards Agreement.

28 Three European States (France, Germany, and the UK: the EU-3) negotiated with Iran to try to prevent it from acquiring a national enrichment capability. In exchange, Iran would get nuclear assistance and other economic benefits. Iran has argued that its nuclear programme is for peaceful purposes and therefore consistent with its obligations under the NPT. Uranium enrichment facilities exist, under full IAEA safeguards, in Brazil, Germany, Japan and the Netherlands, in addition to some in the Nuclear-Weapon States, as well as in India and Pakistan. What makes the case of Iran different is the question of intent. The fact that Iran did not reveal some of its activities in the past has led to suspicion that Iran might be seeking, by using its enrichment technology, to make nuclear weapons and would, at a certain point, withdraw from the NPT. The reaction and lack of confidence of the international community, therefore, is pertinent to the question of intent. On 23 December 2006, the UN Security Council adopted unanimously resolution 1737(2006). Made under Chapter VII (and therefore legally binding on all UN Member States), it required Iran to cooperate with the IAEA and suspend all enrichment-related and reprocessing activities, as well as work on all heavy water-related projects. To back up its requirements, the Council imposed certain sanctions on Iran related to such activities and projects. Two months later, the Security Council adopted Resolution 1747(2007) which decided on a strengthened sanctions regime, as a consequence of Iran's refusal to suspend its enrichment activities and to comply with the provisions of Resolution 1737.

Although the resolution or outcome is not yet known, the case of Iran illustrates how the process is supposed to work: a possible violation occurs and is detected; the European Union and the United States try to find a solution, and the UNSC takes action. This situation also highlighted flaws in the NPT, which countries are trying to address and correct. The case is complicated by

other factors, such as politics and suspicions, but the NPT has faced both in the past without unravelling and it is likely to confront more in the future.

For a considerable time, problems existed (and continue to exist) with the Democratic People's Republic of Korea (DPRK, or North Korea) with its obligations under the NPT.³⁸ After DPRK's accession in 1985, it took seven years to agree on an IAEA Safeguards Agreement, despite the 18 months required in the NPT. North and South Korea negotiated the agreement on the denuclearization of the Korean peninsula in 1992, an agreement which has not been implemented thus far. In the meantime, IAEA inspectors looking for earlier plutonium production were denied access to Yongbyon. The DPRK announced that it was going to withdraw from the NPT, but this did not take effect because of the US-DPRK Joint Statement of 11 June 1993, in which the DPRK said that it had "decided unilaterally to suspend as long as it considers necessary the effectuation (sic) of its withdrawal." Weapons-related nuclear activities of the DPRK were frozen against a commitment to build two nuclear reactors for civilian use, oil deliveries, and United States diplomatic recognition and security assurances. The United States also was allowed to inspect some tunnels in the DPRK, allegedly intended for nuclear activities. A new crisis erupted after DPRK missile flights went over Japan, and when, in October 2002, the USA accused the DPRK of an undeclared uranium enrichment programme. In 2003 the DPRK withdrew from the NPT, including its Safeguards Agreement, and restarted plutonium production. At that time the Security Council did not take any action. NPT States Parties appear to have accepted its withdrawal.

In 2005 the DPRK declared that it possessed nuclear weapons. With the assistance of China, six-party talks (DPRK, South Korea, China, Russia, Japan and the USA) were established, which led to a preliminary agreement in September 2005. In this the United States affirmed that it had no intention to attack or otherwise invade the DPRK with nuclear or conventional weapons. Upon implementation of the agreement, the DPRK would rejoin the NPT. However, on 9 October 2006, the DPRK conducted a nuclear test. In response,

38 Masahiko Asada, "Arms Control Law in Crisis ? A Study of the North Korean Nuclear Issue," *Journal of Conflict and Security Law*, Vol.9, No.3 (Winter 2004), 331-335.

the UNSC adopted, under Chapter VII of the UN Charter, Resolution 1718 on 14 October 2006. The resolution determined that the DPRK's action was a clear threat to international peace and security; condemned the nuclear test; and demanded that the DPRK cease such action and return to the NPT. It also imposed certain sanctions. The ensuing Six-Party Talks led to the signature on 13 February 2007 of an agreed action plan whereby the DPRK committed itself to shut down the Yongbyon reactor, accept IAEA safeguards and provide a list of all of its nuclear programmes, to be followed by their disablement. In return the DPRK would get massive humanitarian aid, including 1 million tonnes of heavy fuel oil, and normalization of US-DPRK relations. Full implementation is still awaited.

Export control regimes can regulate the trade and thus the availability of certain sensitive materials and technologies to specific countries. In general, such regimes can be verified. However, these regimes do not regulate the development of technologies domestically. In addition, many of these technologies are dual-use. Therefore, the application and effectiveness of these regimes as detectors of non-compliance may present difficulties. There may be instances when a consultation and clarification process could be employed to help clarify the purpose of a State that has aroused suspicions. A greater commitment to transparency on the part of the suspected State may also be able to reduce the area of uncertainty.

It is possible that a treaty could be misused for political purposes. For example, a State could refer to “unmeasurable quantities” such as intent, lack of trust, past behaviour, or other issues unrelated to a treaty in order to impose conditions related to a specific treaty. A State could also use general facts and data to create suspicion that a particular State might be in breach of the treaty even when such facts and data do not differ from those of a number of other States. For example, Iran is denied certain nuclear technology which others are allowed to use, not because it is violating the NPT but because it may do so in the future. Review Conferences or other public events related to a treaty also present possible opportunities to promote political issues unrelated to the treaty.

Even the application of specified verification regimes might not always be successful in detecting non-compliance. The nuclear programme of Iraq, geared towards the development of a nuclear weapon capability, was largely unknown before the first Gulf War of 1991, in spite of the application of full-scope safeguards by the IAEA in Iraq, an NPT party. Following the first Gulf War, the UN Security Council established a special monitoring commission (UNSCOM). It found and destroyed chemical weapons and equipment and material related to nuclear and biological weapons. Subsequently, in 2002, the Security Council follow-up commission, UNMOVIC, gained extensive access to Iraq, and despite military pressure, did not find any weapons of mass destruction (WMD). Exhaustive investigations after the second Gulf War also found none.

Both India and Pakistan, which are not parties to the NPT or the CTBT, did not have sanctions imposed on them by the UN Security Council for their 1998 tests, although the Security Council, in its Resolution 1172 (1998) said that it “strongly deplores these conducted underground nuclear tests.” Nevertheless some States followed the lead of the US and applied unilateral economic sanctions in response to the nuclear tests. These sanctions clearly inflicted substantial economic losses on both States, falling relatively more heavily on Pakistan, due to the differences in their economic conditions.

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6. Recent Legal Developments

Acting under Chapter VII of the UN Charter, the UN Security Council adopted Resolution 1540 (2004) that required all States to establish controls over WMD and the means to create and deliver them. The goal is to prohibit ‘non-State actors’ from developing, acquiring and using WMD and their means of delivery, and to enact and enforce the necessary national implementing legislation. It puts in one basket the whole gamut of WMD controls, including prohibition of proliferation, material protection and physical security as well as border and export controls. The measures are primarily concerned with preventing proliferation of WMD to terrorists and illicit networks and include certain legally binding measures imposed on all States, including those which are not parties to a relevant treaty or treaties. Thus, Resolution 1540 is binding

on all States regardless of their membership in the NPT, BWC or CWC. It is also potentially enforceable through the punitive measures available to the Council. The resolution calls upon all States to report on what they have done to a new committee of the Council. The committee's life was to last two years, but it was renewed for two years in April 2006 (Resolution 1673).

So far no State has fulfilled all of the obligations under SC Res. 1540 and most States have implemented only a few of the domestic legal requirements. By 2006, 62 States had not fulfilled the obligation to submit a report on their efforts to implement the resolution, the first of which was due by 28 Oct. 2004. In an analysis of the implementation of the resolution, the *Non-proliferation Review* studied various criteria to identify States that are especially important for the implementation of Resolution 1540.³⁹ It also highlights provisions of the resolution that are most important for those States to fulfil, such as adopting a legal framework and establishing enforcement mechanisms to punish violations of such laws. In applying the criteria (nuclear, chemical, biological weapons programmes, or capabilities, possible places of transfer of materials, etc.), it selected 50 States, which were then assessed vis-à-vis the key provisions of the resolution in order to make an assessment of the status of implementation of the resolution.

The report finds that less than one third of the legislative and enforcement mechanisms needed to prevent WMD proliferation to non-State actors have been enforced in those key States that pose the greatest risk of proliferation to non-State actors.⁴⁰ It is difficult to see how the United Nations can be effective when Member States do not fulfil the obligations required by the resolutions that they deem to be important, and Resolution 1540 is considered to be one of the most significant in recent history.

39 Peter Crail, "Implementing UN Security Council Resolution 1540: A Risk-Based Approach," *Non-proliferation Review*, Vol. 13, No 2, July 2006.

40 Ibid.

IV. Non-compliance: an Analytical Perspective

Devising a verification regime requires reaching a consensus and thus is the product of negotiation and compromise rather than a purely scientific analysis. The resulting constraints imposed upon the methodologies and technologies of verification will limit how effectively any given treaty obligations can be verified. Concerns regarding national sovereignty, as well as protection of sensitive national security or proprietary information, will limit how much openness a State will allow. An additional factor will be economic, because monitoring stations, on-site inspections and large secretariats can become very costly to establish. Where different States draw these lines will vary by State. Another constraint may be that States can be reluctant to use mechanisms that are provided in the treaty, e.g. challenge inspections.⁴¹

Those treaties that require verification specify methodologies, technologies and procedures for collecting and evaluating information. In other words, they require the use of objective information for verifying compliance with the treaty obligations and, conversely, detecting breaches of these obligations. Decisions about non-compliance based on information collected under a verification regime can be optimized by improving the quality, reliability, analysis and evaluation of that information. Typically, verification regimes, e.g., CWC, CTBT, comprise monitoring systems, consultation and clarification, on-site inspections, and confidence-building measures. On the other hand, under the CFE, challenge inspections are routine so to say.

Using the information collected through any specific verification regime does not automatically remove ambiguities in the detection of breaches. There are different causes for such ambiguities. The results of analysing data obtained through instruments or inspectors include ambiguities caused by the inherent measurement uncertainties.

An objective mechanism for detecting breaches needs to incorporate, in addition to the analysis of the information obtained by the verification regime, an evaluation of the results to determine whether a detected “breach” is actual

41 Masahiko Asada, “The Challenge Inspection System of the Chemical Weapons Convention: Problems and Prospects,” Ramesh Thakur and Ere Haru (eds.), in *The Chemical Weapons Convention: Implementation, Challenge and Opportunities*, United Nations University Press, 2006, 75-100.

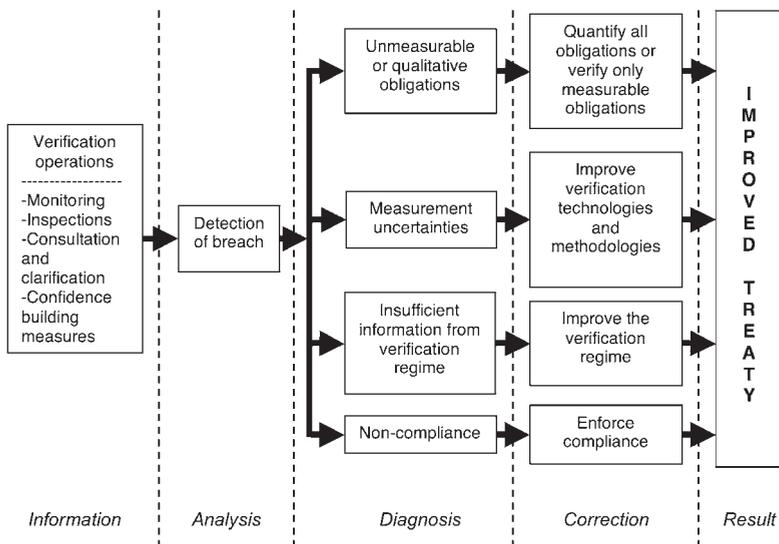


Figure 1. An analytical framework for improving the operation of a treaty

or apparent. Actual breaches should lead to enforcement of compliance, while apparent ones should lead to improvements of the verification regime. Each type of apparent breaches leads to different corrective action. Qualitative or ambiguous obligations need to either be clarified or be excluded from the verification regime. Measurement uncertainties can be minimized by using state-of-the-art technologies and methodologies; even so, residual uncertainties in detection of breaches will always be present. The biggest challenge is how to reduce uncertainties caused by limitations imposed upon the verification regime. These limitations are associated with cost and intrusiveness. Such is the case for the limitations of the CWC verification regime and the difficulties in defining a verification regime for the BWC. The incorporation of challenge inspection is one way of compensating for the uncertainties caused by the constraints imposed on the verification regimes. START, CWC, CTBT and the Additional Protocols to the IAEA Safeguards Agreements all provide for some form of challenge inspection. This could be a powerful tool and should be

used when needed, but, as noted above, States may be reluctant to request such inspections⁴².

The categories of “breaches” detected by the verification regime and follow-up actions for each category are illustrated in Figure 1. The TTBT is a good example of how an objective verification mechanism could help improve the operation of a treaty. The seismic signals from some Soviet Union nuclear tests created uncertainty whether or not the yields of these explosions might have exceeded the 150-kt limit in the TTBT (*ambiguity caused by limitations of the measurement system*). Following consultation and clarification as provided for by the verification regime, a need was identified to modify the verification procedures by adopting an additional protocol to the TTBT that allowed for bilateral on-site measurement of nuclear calibration tests at test sites in the two States. The protocol also provided for on-site measurement of the yields of specified future tests (*improvement of the verification system*). Measurements close to the detonation site of the yield of one explosion at each test site and detailed geological information of the test sites were exchanged. The yield values obtained from the close – in measurements could be used to re-interpret the seismic data (*improvement of the ability of the system to detect breaches*).

The analytical framework illustrated in Figure 1 provides an objective mechanism for arriving at factual conclusions on the basis of the information collected by the verification regime. It is important for the verification regime to distinguish between detected breaches that are due to weaknesses of the regime and those attributable to non-compliance. It should be noted, however, that, even under the best of circumstances, it would be unrealistic to expect that a verification regime would always provide unambiguous answers to the question whether a particular breach is likely due to non-compliance. Although it would be theoretically possible to devise a system that would maximize the probability of detecting non-compliance, such regime would be costly, intrusive and politically unacceptable.

42 Ibid.

When discussing options for improving the non-compliance procedures it is thus important not only to look at the individual elements of the treaty but also at the possible feedback loops that connect these elements. For example, the Joint Compliance and Inspection Commission (JCIC) for the START Treaty has issued over 100 agreements and joint statements to improve the viability and effectiveness of the treaty. These take account of new developments and incorporate lessons learned in the course of implementation. The establishment of compliance and non-compliance is a political act supported by an analysis of technical and other facts and observations. The “political” elements of the systems (consultation and clarification, additional provisions and unmeasurable quantities) are central to the process, but are the most difficult ones to quantify.

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For verification regimes involving collection, analysis and evaluation of data, detection of non-compliance is affected by a number of factors, first and foremost being the clarity of the obligations of the State Parties. For example, there is no objective mechanism for measuring the types and quantities of chemicals not prohibited consistent with the purposes of the CWC. As a general rule, anything that is not prohibited is allowed in a treaty. Thus, qualitative obligations do not have measurable attributes. The absence of measurable attributes implies that a verification regime cannot collect relevant data for detecting non-compliance with obligations that are qualitative, ambiguous or aspirational. Consequently, the interpretation of and adherence to these types of obligations involves subjective criteria that vary with circumstances and the perspective from which each State views and interprets such obligations.

V. Lessons Learnt

The extensive experience with compliance issues, some of which is discussed above, leads to some general conclusions regarding how individual States and international organisations have responded to such issues.

In general, those treaties which involve only the United States and the former Soviet Union have commissions charged with implementation and compliance issues. These commissions meet in private on a regular basis

and exchange notifications as required. Quite a few compliance issues have arisen which appear to have been dealt with reasonably efficiently, either in the commissions or bilaterally. Although some issues have remained unresolved for many years, at least in recent years, these problems have not been the cause of any crises in relations. Some issues have been elevated above the commissions to the political level, but have been resolved there and not escalated to other international forums.⁴³

The Strategic Arms Reduction Treaty of 1991 (START) JCIC deals confidentially with implementation and compliance issues. Examples of the kinds of issues which have arisen include differing interpretations of how to implement the complex inspection and verification provisions, testing practices, telemetry practices, the status and locations of ICBM launchers, procedural issues related to inspections, etc.

Issues arising in multilateral treaties are generally more difficult to resolve than those for bilateral treaties. Both have differing types of compliance monitoring and enforcement mechanisms and different procedures, yet generally operate by consensus. Their compliance issues have sometimes moved into public view, frequently with considerable acrimony (Iran, Iraq, and North Korea). The IAEA has been extensively involved in NPT safeguards issues and has generally been respected and reasonably effective. In the CWC, suspicions have been raised, but no State has attempted to use the challenge inspection mechanism to resolve them.⁴⁴

In several important disputes, special mechanisms or forums not envisioned in the treaty in question have been created on an ad hoc basis to deal with a specific problem. On the one hand, such initiatives could be seen as the result of shortcomings in the prescribed treaty mechanisms. These initiatives could also be seen as undermining these mechanisms. On the other

43 US Department of State, "Adherence to and Compliance with Arms Control, Non-proliferation and Disarmament Agreements", Op. cit.

44 See Edward Ifft, "Witness for the Prosecution: International Organizations and Arms Control Verification," *Arms Control Today*, Nov. 2005, 12-19; and "OPCW Draft Annual Report (2006)," Section 1, June 2007, at www.opcw.org.

hand, they have been creative and have made important contributions to resolving, or at least clarifying, difficult situations.⁴⁵

As an interesting comparison, the World Trade Organization (WTO) has a complex mechanism for resolving bilateral disputes, though it can take years. Although it is similar to well-established means of dispute settlement, it has some special features. It tends not to use traditional (confrontational) terms and so, instead of tribunals, most disputes are decided by ‘panels,’ usually of three lay (i.e. not legal) persons. This reflects the basic purpose of the mechanism, which is to seek an agreed settlement that produces positive, workable and mutually acceptable solutions. The parties are thus encouraged to reconcile their differences, and some two-thirds of the disputes referred to WTO are resolved by consultations.⁴⁶ The WTO mechanism works well because it deals with bilateral disputes, though other WTO members are sometimes involved indirectly. The WTO has a mechanism that can be invoked by any party and is pretty well guaranteed to solve the problem. It is clearly in the interests of all the WTO members that trade disputes are settled rather than become a running sore in their relations

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VI. Conclusions and Recommendations for Improved Compliance

The purpose of this work is to contribute toward the elimination of deficiencies and weaknesses of the arms control and non-proliferation systems and so make them more effective. In particular there is a need to deal more effectively with compliance issues. Some specific recommendations follow, including how improved mechanisms could be formalized for existing treaties.

1. Establish implementing mechanisms where they are lacking.

Some treaties (BWC, Outer Space Treaty) do not have an official implementing mechanism. They may rely simply on periodic review conferences or *ad*

45 Hans Blix, *Disarming Iraq*, Pantheon Books, 2004; Edward Ifft, *The Use of On-Site Inspection in the Avoidance and Settlement of Arms Control Disputes*, United Nations, 1994, 25.

46 See A. Aust, *Handbook of International Law*, Cambridge University Press, 2005, 382-7.

hoc meetings. Such arrangements are not likely to be effective in monitoring how well an agreement is functioning or in detecting non-compliance in a timely fashion. Even the NPT lacks a proper body for implementing the entire treaty and its IAEA Safeguards Agreements.

2. Improve the technical and legal support available to high-level compliance bodies.

Some treaties, such as the NPT, CWC and CTBT, have highly developed organisations with great expertise. In the United Nations itself, while the UNSG and the UNSC could theoretically call upon expertise anywhere in the world, no clear mechanism exists for doing this on short notice. A list of suitable and willing experts (such as that which has been established for the BWC) and suitable facilities could be maintained for providing advice and analysis on difficult arms control compliance problems. This might even include a list of inspectors who could be sent out on ad hoc missions to investigate specific controversies on short notice, as has, in fact, been done several times in the past.

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3. Establish clear procedures for addressing compliance issues.

It is clearly not desirable to have to invent procedures and lines of communication each time a problem arises. At such times, there may well be tensions and time pressures which complicate smooth and predictable efforts at clarifying and resolving such issues. Issues should be resolved at the lowest possible level. Resolution of issues would be greatly aided by transparency and confidence-building measures. A carefully managed compliance regime would itself increase confidence. Issues could be resolved at the level of a secretariat in the case of a late or incomplete declaration. If a problem arises in the course of an on-site inspection, it would be best if it could be resolved on the spot between inspectors and escorts. If this is not possible, the quiet use of a consultation and clarification procedure might be next. If there is no consultation and clarification procedure for a particular treaty, one should be established. The chain of escalation then might go to an implementing commission or technical secretariat. If this fails, an Executive Council might

be the next rung on the ladder. At this stage, depending upon the specific treaty, some penalties might be imposed. The ultimate authority would be the UN Security Council, which should only be involved in exceptional cases after all other avenues have been exhausted. It is unavoidable that as issues move up the ladder they become inherently more political and decisions might be taken on grounds that have little connection to the basic facts of each issue. Many countries believe it is advisable to carry out an impartial expert analysis of a situation in order to avoid taking it to the Security Council, in part because only five countries have a veto power.

4. Address compliance problems promptly.

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It is clearly not desirable to overreact to an ambiguity or create a crisis unnecessarily. On the other hand, allowing even small problems to accumulate without efforts to correct them can create a permissive atmosphere that encourages more serious breaches to occur. Likewise, allowing problems to fester for years is not conducive to trust and the smooth operation of an agreement. States Parties should be encouraged to report problems which they see developing or activities which they feel may be misunderstood. For example, when certain States realized that they could not comply with the prescribed deadlines for the elimination of chemical weapons, they went to the OPCW in advance, explained the situation and requested extensions, in accordance with the CWC. This increased trust and avoided what would have become a serious compliance problem if they had simply failed to meet the agreed deadlines without warning or explanation.

5. To the extent possible, share relevant information and make greater use of open source data.

Implementing organisations should take greater advantage of the increasing availability of high-quality commercial satellite imagery. States with relevant information obtained through national technical means (NTM) should try to share this information, as appropriate, with implementing organisations.

For example, such information could be used to target inspections, without revealing sensitive sources and methods.

6. Provide assistance in meeting commitments to States Parties that need it.

Many technical violations occur because States fail to file required reports and declarations. In some cases, this occurs because some States have limited resources to devote to fulfilling such requirements. Rather than ignoring the requirements, such States should request assistance and it should be provided, either by a secretariat or by individual States. In other cases, financial or technical assistance is required. There are many encouraging examples of such assistance being provided. Article VII(2) of the CWC requires all States Parties to “cooperate with other States Parties and afford (i.e. provide) the appropriate form of legal assistance to facilitate the implementation of the obligations [under the Convention]. UNSC Resolution 1540, para. 7, expressly recognizes that some States may need assistance in implementing the requirements of the resolution, and invites States in a position to do so to offer assistance. States which need assistance should accept the responsibility of requesting help, rather than simply assuming that their compliance is not important and non-compliance will go unnoticed.

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7. Clarify how compliance judgments are made.

There is considerable confusion about who has the authority to make compliance judgments. Here bilateral treaties are much simpler, since the other party has presumably raised the issue and must be satisfied for the matter to be resolved. For large multilateral treaties, things are obviously more complex. While there may be general agreement that individual States Parties have the responsibility to make such judgments, translating this into a collective decision that will be regarded as legitimate is less well understood. If all States Parties are to be involved, must their decision be unanimous? Can an Executive Council, if any, make such a judgment? Can a verdict of “innocent,” as well as “guilty” be rendered? If there is no clear decision, how can an issue

be removed from the agenda of problems? There is general agreement that the UNSC is the supreme authority in such matters, but no one would argue that all compliance issues must be elevated to that level. An additional complication is that some agreements refer to the UNGA as a possible decision-making body, or the ICJ as a body that could render an advisory opinion.

The final objective is to how to strengthen the legitimacy of decisions regarding non-compliance, in order to get the fullest possible support of all States, including at the UN Security Council level. The question as to who makes a final decision on non-compliance is indeed the key question. A possible answer might be two-fold:

a. Increase the political weight of the IAEA Board of Governors and of the Executive Councils of important non-proliferation and disarmament treaties (CWC, CTBT, future FMCT, etc);

b. If a compliance issue must go to the UNSC, it could seek advice from a respected and impartial body of experts (see Recommendation 2). Of course, the UNSC would retain the final role of decision-making on corrective measures and sanctions.

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This approach would have the advantage of introducing more progressiveness and flexibility into the management of proliferation crises, therefore contributing to the elimination of political loopholes and to the reversibility of critical situations.

8. How could such improvements be implemented ?

This is for the Parties to each treaty to decide. Unlike the CWC or the CTBT, most arms control treaties do not have a built-in amendment procedure; and even if they do, it may well take a long time to give effect to a change. Instead, there is another, and much quicker, way in which changes can be made to a treaty. Article 31(3)(a) of the Vienna Convention on the Law of Treaties 1969 provides that in interpreting a treaty there shall be taken into account any ‘subsequent agreement’ between the parties regarding its interpretation or the application of its provisions. Given that the parties can agree later to modify the treaty, they can also subsequently agree on an authoritative interpretation of its terms, and this can amount, in effect, to an

amendment. There is no need for a further treaty or protocol: the provision refers deliberately to an “agreement” rather than a treaty. The agreement can take various forms, including a decision adopted by a meeting of the parties, provided the purpose is clear. In 1993 the parties to the CFE Treaty concluded a ‘Document of the States Parties’ which included an ‘understanding’ as to how certain provisions of the CFE Treaty would be interpreted and applied, and which are, in effect, amendments to the Treaty.⁴⁷ What is suggested here is essentially the same. In practice, changes to the interpretation or application of a treaty can be quite substantive, and the suggested method should be well able to cope with the suggestions made in the preceding paragraphs.

Further work is needed to examine responses to, and remedies for, violations of arms control treaties. This could include, for example, analysis of the effectiveness of political, economic and military sanctions. It would also be useful to develop a better understanding of the motivations behind such violations. For example, are violators generally seeking military advantage, political hegemony in their region or deterrence? Further, will the likely build-up of nuclear energy lead to increased suspicion that countries are violating their safeguards agreements and, consequently, more cases being brought to the United Nations Security Council? Could a special body under the United Nations Security Council be created to deal with treaty compliance issues? An analysis of how best to meet countries’ legitimate security concerns could assist in making future violations of treaties less likely.

47 See Aust, 191-3.

VII. List of References and Acronyms

For the text of treaties see <http://www.fas.org/nuke/control/index.html>.

In the list below:

a. 'ILM' means International Legal Materials (published by the American Society of International Law, and available online at Heinline);

b. 'UNTS' means the UN Treaty Series (<http://untreaty.un.org/English/access.asp>);

c. 'LNTS' means the League of Nations Treaty Series (on UNTS website).

Treaties

ABM	US/USSR Anti-Ballistic Missile Treaty 1972
Antarctic Treaty	1959 (402 UNTS 71 (No. 5778); www.ats.org.ar)
BWC	Biological Weapons Convention 1972, 1015 UNTS 163 (No. 14860); ILM (1972) 309
CFE	Conventional Armed Forces in Europe Agreement 1990 (ILM (1991) 6)
CTBT	Comprehensive Nuclear Test-Ban Treaty 1996 (ILM (1996) 1443)
CWC	Chemical Weapons Convention 1993 (1974 UNTS 317 (No. 33757); ILM (1993) 804)
FMCT	Fissile Material Cut-off Treaty (not yet negotiated)
Geneva Protocol	1925 (38 LNTS 190)
INF	US/USSR Intermediate-Range Nuclear Forces Treaty 1987
NPT	Nuclear Non-Proliferation Treaty 1968 (729 UNTS 161 (No. 10485); ILM (1968) 809)
Open Skies Treaty	1990
Ottawa Convention	(Landmine Convention) 1997 (2056 UNTS 241 (No. 35597); ILM
PTBT	Also known as LTBT (Partial Test Ban Treaty 1963, 480 UNTS 43 (No. 6964))
START	US-USSR Strategic Arms Reduction Treaty 1991, ILM (1992) 246)

JCIC	START Joint Compliance and Inspection Commission
TTBT	Threshold Test Ban Treaty 1974
Vienna Convention	(Vienna Convention on the Law of Treaties 1969, 1155 UNTS 331 (No. 18232); ILM (1969) 689)
WTO Agreement	(World Trade Organisation Agreement 1994, 1867
UNTS	4 (No. 31874); ILM (1994) 1144)

Other Acronyms

DPRK	Democratic People’s Republic of Korea
IAEA	International Atomic Energy Agency (www.iaea.org)
NNWS	Non-Nuclear-Weapon States
NTM	National Technical Means
NWFZ	Nuclear Weapons-Free Zone
OPCW	Organisation for the Prohibition of Chemical Weapons (www.opcw.org)
CTBTO	Comprehensive Nuclear-Test-Ban Treaty Organization (www.ctbto.org)
OSCE	Organization for Security and Co-operation in Europe
UNGA	United Nations General Assembly
UNMOVIC	United Nations Monitoring, Verification and Inspection Commission (www.unmovic.org)
UNSC	United Nations Security Council
UNSCOM	United Nations Special Commission on Iraq (http://www.un.org/Depts/unscom/) (replaced in 2000 by UNMOVIC)
UNSG	United Nations Secretary-General
WMD	Weapons of Mass Destruction

Part two

International Seminar:

Non-compliance with Disarmament and Non-proliferation Agreements: Lessons Learnt and Ways Forward

(GCSP, Geneva, 20 April 2007)

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I. Programme

0900 - 0910	Dr. Fred Tanner, Director, GCSP	Welcome Address
0910 - 0915	Dr. Ola Dahlman, Chairman of the IGSS	Introduction of the IGSS
0915 - 0930	Prof. Bernard Sitt, Director of CESIM	Introduction: The Study of the IGSS on Non-Compliance with Disarmament and Non- Proliferation Agreements
0930 - 1045	Session 1: The Lessons Learnt Chair: Dr. Ola Dahlman	
0930 - 1000	Dr. Jozef Goldblat, Vice- President, GIPRI - Senior Resident Fellow, UNIDIR	“How to Deter Violations of Disarmament and Non- Proliferation Agreements?”

1000 - 1030	Dr. Patricia Lewis , Director, UNIDIR	“Attempting to Unravel the Truth about a Biological Weapons Programme: The Case of Iraq”
1030 - 1045		Discussion
1045 - 1100		<i>Break</i>
1100 - 1230	Session 2: The Role of International Organisations Chair: Prof. Bernard Sitt , Director of CESIM	
1100 - 1130	Dr. Lassina Zerbo , Director of International Data Centre Division, Preparatory Commission for the Comprehensive Test Ban Treaty	“The Capacity of the Comprehensive Test-Ban Treaty Organisation (CTBTO) to monitor Compliance with a Comprehensive Test-Ban Treaty (CTBT)”
1130 - 1200	Dr. Bruno Pellaud , Former Director of Safeguards, IAEA	“Dealing with Non-Compliance with the Non-Proliferation Treaty (NPT): Beyond the Lessons Learnt”
1200 - 1230		Discussion
1230 - 1400		<i>Private Lunch</i>
1400 - 1530	Session 3: The Technical Aspects Chair: Mr Marc Finaud , Faculty Member, GCSP	
1400 - 1430	Amb. Serguei Batsanov , Former Director of Special Projects, OPCW - Director, Geneva Office, Pugwash Conferences	“Theory and Practice of Compliance - Some Lessons of the First Decade of Implementation of the Chemical Weapons Convention (CWC)”
1430 - 1500	Ms Jenifer Mackby , Fellow, Center for Strategic and International Studies (CSIS)	“Monitoring Compliance with the Biological Weapons Convention (BWC) by Industry: Is it Feasible?”
1500 - 1520	Amb. Yuri Nazarkin , former former Russian Chief Negotiator for START I	“START I and the 2002 Moscow Treaty (SORT): Comparative Analysis of their Compliance Systems”

1520 - 1540	Amb. Bérengère Quincy , Former Permanent Representative of France to the Office of the United Nations in Vienna	“The Interaction between National and International Legal Obligations Deriving from Multilateral Disarmament and Non-Proliferation Regimes: Is There an Ideal System?”
1540 - 1600		Discussion
1600 - 1615		<i>Break</i>
1615 - 1800	Session 4: The Political Aspects Chair: Dr. Bruno Tertrais , Senior Researcher, Foundation of Strategic Research (FRS), Paris	
1615 - 1645	HE Mr. Nobuyasu Abe , Ambassador of Japan to Switzerland, former UN Under-Secretary-General for Disarmament Affairs	“The Role of the UN Security Council in Promoting Compliance with Multilateral Disarmament and Non- Proliferation Treaties”
1645 - 1715	Dr. Edward Ifft , former Deputy Director of the On-Site Inspection Agency and Senior Advisor to the Defense Threat Reduction Agency (USA)	“Issues in Implementation and Verification”
1715 - 1730		Discussion
1730 - 1745	Dr. Ola Dahlman , Chairman of the IEGSS	Conclusions
1800 - 2000	HE Mr Jean-François Dobelle , Permanent Representative of France to the Conference on Disarmament	Keynote Concluding Remarks, followed by a Reception French Permanent Mission, Villa “Les Ormeaux”, 36 route de Pregny, Chambésy

II. Summary

International Experts Discuss Non-compliance with Disarmament and Non-proliferation Agreements,⁴⁸

On 20 April 2007, the GCSP organised an international seminar on “Non-Compliance with Disarmament and Non-proliferation Agreements: Lessons Learnt and Ways Forward”. This event took place on the occasion of a working meeting of the International Expert Group on Global Security (IGGS), hosted by the GCSP from 18 to 25 April 2007.

The IGGS is composed of Dr. Anthony Aust (UK), Dr. Ralph Alwine (USA), Prof. Masahiko Asada (Japan), Dr. Ola Dahlman (Chairman, Sweden), Dr. Edward Ifft (USA), Prof. Nicholas Kyriakopoulos (USA), Ms Jenifer Mackby (USA), Dr. Bernard Massinon (France), Amb. Arend Meerburg (the Netherlands), Dr. André Poucet (Belgium) and Prof. Bernard Sitt (France). The IGGS has been conducting a study on non-compliance, which will take into account the results of the seminar organised by the GCSP jointly with the French Centre for International Security and Arms Control Studies (CESIM) and supported by the French Ministry of Foreign Affairs (*Centre d’analyse et de prévision*).

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One of the issues discussed was how to prevent, deter and deal with **violations of disarmament and non-proliferation agreements**. One speaker supported strong treaty-based verification regimes capable of detecting non-compliance, combined with determined action by the UN Security Council as well as solidarity of the international community with States victims of violations; ideally, detailed responses in cases of non-compliance should be integrated in the relevant obligations of the States Parties.

The case of the **Iraqi biological weapons programme**, which was analysed by one speaker, showed that the UN had collected most of the evidence before 2003, and that a combination of inspections, export control and sanctions can be effective in deterring States from conducting illicit WMD programmes or

⁴⁸ See: http://www.gcsp.ch/e/meetings/Events_new/Special_News/2007/May-Aug/CESIM.htm. On this website, some of the presentations which are not reproduced in the present report are available.

leading them to terminate such activities. However a 100 percent-proof verification system could not exist.

The Director of the International Data Centre of the **Comprehensive Nuclear Test-Ban Treaty** Organisation Preparatory Committee (CTBTO) demonstrated the capacity of the International Monitoring System put into place by this organisation to verify a CTBT once it enters into force. The case of the detection of the nuclear test carried out by the DPRK in February 2007 was analysed.

Another speaker, taking the example of the **Nuclear Non-proliferation Treaty** (NPT), discussed the differences between verification (professional, factual, independent) and enforcement (political), as well as between the various levels of violation (anomaly, breach, non-compliance). In the case of Iran, the IAEA Board of Governors determined non-compliance with the IAEA Safeguards Agreement as a result of a breach of the obligation of reporting acquisition of nuclear material (1.8 t of uranium) and non-compliance with its request for suspension of uranium enrichment. That statement automatically referred the case to the UN Security Council.

In the discussion, other factors were mentioned, such as compliance of the nuclear-weapon States with their commitments, as well as the need for a non-discriminatory approach in determining non-compliance.

A speaker considered that some lessons in the implementation of the **Chemical Weapons Convention** (CWC) could be useful to other arms control agreements: the Secretariat of the OPCW collects information from inspections, shared with the Member States which can decide to ask for clarification or seize the Executive Council; most of the time, a political crisis is avoided; if non-compliance is detected, priority is given to measures for redressing the situation; sanctions are envisaged only if no action is taken by the non-compliant State Party. Assistance to weak States is required. In the discussion, the risk of use of chemicals by non-State actors was considered greater from commercially available agents than military stockpiles.

Another speaker recalled that a report of US biotechnology and pharmaceutical industry had demonstrated the feasibility of verifying compliance in such industry with the obligations of the **Biological Weapons and Toxin**

Convention (BWTC) while preserving confidentiality, and called for similar trial inspections to improve awareness of the stakeholders and biosecurity or biosafety.

One speaker compared the verification mechanisms of the bilateral **START I Treaty** and the 2002 Moscow SORT Treaty, concluding that the most recent treaty, without a real verification system, could give rise to misunderstandings about the actual number of warheads reduced, distinction between nuclear and conventional warheads, the fate of the excess warheads, the use of national technical means of verification (inadequate to count warheads instead of missiles), extension of the treaty, withdrawal from it. While START did lead to actual reductions, SORT may in fact allow further qualitative build-up. Either a new START treaty was needed after 2009 to supersede SORT, or at least the present START Treaty should be extended beyond 2009.

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A speaker analysed the national obligations resulting among others from UN Security Council **Resolution 1540** of 2004, noting that the recourse to peer-policy review was a trend in the UN. But States also had multilateral obligations within organisations such as the IAEA and the OPCW, including assistance to weak States and cooperation against illegal trafficking. The growing energy requirements called for a comprehensive approach of non-proliferation, where multinational assurances of nuclear fuel supply should play a role as proposed by the IAEA Director-General. The Iranian case was a test of international governance, requiring a solution based on transparency and negotiation.

One speaker addressed the issue of the legitimacy of **action against non-compliant States Parties**, stressing that unanimous sanctions are more efficient; sanctions combined with export controls are effective but take time; the optimal mix is a combination of incentives, sanctions and threats, without rewarding past violations.

Another speaker analysed the role played by the UN Security Council (UNSC), in particular in the cases of Iran and the DPRK, considering that it should be the last resort when core security concerns are at stake. He called for more technical expertise to be made available to the UNSC, especially on missiles and bioweapons, and for the 1540 Committee to be extended and

provide assistance to Member States. He regretted that some Member States put national security considerations or trade interests before global non-proliferation objectives.

One speaker compared the various **implementation regimes** of arms control agreements, noting that evidence of compliance can be obtained from national declarations, inspections and national technical means (provided that information from the latter is shared with other States Parties). In protecting confidentiality, the IAEA and OPCW had a good record, but difficulties remained with the BTWC and a possible cut-off treaty (FMCT). After collecting the evidence, decision on guilt and innocence should not be left to the secretariat of an organisation but to the States Parties, or to a legitimate UN organ (UNSC, UNGA, ICJ). In case of guilt, States Parties should not be afraid of “naming and shaming” the culprit, but in some case sanctions could make things worse (like in the case of Iran, cooperating less with the IAEA).

In conclusion, it was considered that the issue of non-compliance is multi-faceted; it is important to know the limits of knowledge resulting from verification systems, and to be content with the information necessary to satisfy those concerned; a strong verification regime will promote confidence of all States Parties and deter violations; political judgment on non-compliance must be based on facts and precise measurements, but has often raised difficulties; sanctions should be subject to balance and proportionality, and their possible effects anticipated.

III. Main Presentations

1. How to Deter Violations of Disarmament and Non-proliferation Agreements

Jozef Goldblat, Vice-President, Geneva International Peace Research Institute (GIPRI), Resident Senior Fellow, United Nations Institute for Disarmament Research (UNIDIR)

Introduction

In 1951 Fred Iklé, Director of the US Arms Control and Disarmament Agency (ACDA) asked in his article in *Foreign Affairs*: “After Detection What?” He referred to the detection of breaches of arms control obligations. As far as I know, he received no authoritative reply to his question.

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Since that time, the need to enforce compliance with arms control treaties has increased. Several violations were committed, but no coercive measures have been taken against the violators. It is true that Iraq, which had committed a material breach of the NPT, was forced under Security Council resolutions to dismantle or destroy the key elements of its weapons of mass destruction programmes. However, these sanctions were imposed not because of the detected breach of the NPT, but because of Iraq’s aggression against Kuwait in violation of the UN Charter.

I am always in a predicament when my students ask me what is the value of international arms control norms if one can disregard, circumvent or violate them with impunity? I have now mustered all my courage to draft a formula that may perhaps partially answer this question. I expect it to be met with scepticism by some countries, but the subject is of primary importance. It deserves a wide exchange of views among researchers, politicians and diplomats in pursuit of a generally acceptable solution. It is logical to start with the role of verification.

The Role of Verification

It is generally assumed that States enter international treaties in good faith, that is, with the intention to abide by their commitments. In restricting their own freedom of action, they expect others to do the same. Nevertheless, the

parties usually verify whether the contracted obligations are being observed, especially when vital matters, such as national security, are involved. The possibility to check compliance is, therefore, an important requirement to be taken into account when States decide whether to conclude or accede to an arms control agreement.

The form and modalities of verification depend upon the nature, scope and military significance of the agreed constraints, but the main role of verification is the same for all arms control treaties, namely, to deter cheating. A government contemplating a violation may refrain from committing it if it fears detection which may be followed by a vigorous response from the cheated State or States, and perhaps even provoke a very negative reaction in its own country. Deterrence of violations presupposes, of course, the ability to detect them. Timely detection is vital to enable the injured party to redress the situation, especially in cases constituting an immediate military threat.

Verification also has confidence-building functions. By providing evidence that the parties are fulfilling their obligations, and by stating that no prohibited activities have been found, verification helps to generate an international belief in the viability of the arms control measures and instil trust in participating States that their interests are protected. In addition, the existence of a verification mechanism makes it easier for a party unjustly accused of a breach to demonstrate its innocence. Charges, which have not been disproved, and misunderstandings, which have not been clarified, may negatively affect the international climate by weakening confidence in treaties and casting a shadow on arms control endeavours.

It is often postulated that verification must be adequate, appropriate, or effective. The meanings attached to these terms differ. Most people take the view that there will always be a limit to detecting violations, but that the threshold should be low enough to make the significance of undetected breaches negligible. The reasoning behind this pragmatic approach is that what matters most is not the fact of non-compliance but the effect of non-compliance; and that, to make a significant difference altering the military balance between States, cheating would have to be practised on such a scale as to render detection inescapable. Others consider any deviation from the

contracted obligations to be an offence that cannot be tolerated, regardless of its military significance, and insist on total verifiability. The reasoning behind this legalistic approach is that the principle *pacta sunt servanda* (contracts should be adhered to) must be observed unconditionally, even at the risk that disputes over trivial matters might undermine the treaty. Since foolproof verification of a treaty is not achievable, and since complete absence of violation can never be proved, only the first of the two approaches makes the conclusion of an arms control agreement possible. The parties must judge for themselves whether the threat posed by undetected violations exceeds that posed by an uncontrolled arms competition. Passing such a judgement is a political matter.

Responses to Violations

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However well-intentioned governments are at the time of signing an arms control agreement, they may at a later stage change their mind and be unable to resist temptations to acquire clandestinely the weapons they have renounced, or to engage in other outlawed activities. A government determined to derive military benefits from non-compliance may take the risk that its felony will be detected through verification and disregard the consequences. Once a breach has occurred, it is up to the cheated party or parties to react.

Responses may differ depending on the extent to which a breach is considered serious by those affected by it. They may range from deliberately overlooking certain offences for overriding political or security reasons (for example, the unwillingness to reveal the source of information) to abrogation of the relevant treaty followed by some punitive action. Between these extremes lies the possibility of using diplomacy to bring about a change in the behaviour of the guilty party.

Many multilateral arms control treaties provide for formal notification of a suspected or proven violation to the United Nations and/or another international organisation, thus making the event public. As no government likes to be pilloried as a violator of legal obligations, publicity may be helpful as an instrument of sanction, but only in democratic countries that are sensitive to public disapproval. A reported violation may lead some States to recall

their ambassadors and even sever diplomatic relations. International organisations may pass condemnatory resolutions. However, to make the violating State rectify its behaviour, considerably stronger measures of enforcement may be needed.

UN Action

After a competent body has made a finding that a state has violated an arms control agreement, the UN Security Council may, if so requested, consider the matter. The UN Charter does not authorize the Council to take action against violators of arms control agreements, but if the Council finds that the situation brought about by the violation could lead to international friction, it may, under Chapter VI of the Charter, recommend to the State or States concerned “appropriate procedures or methods of adjustment”.

The Council may also decide that a specific violation, or a certain type of violation, constitutes a “threat to the peace”. It could then, under Chapter VII of the UN Charter, call on UN members to apply sanctions, such as complete or partial interruption of economic relations and of rail, sea, air, postal, telegraphic, radio and other means of communication. It can also recommend to the UN General Assembly the suspension of the rights and privileges of UN membership or even expulsion from the Organisation. Finally, the Council may decide that military sanctions should be taken, including demonstrations, blockade, and other operations by the air, sea or land forces of UN members.

Thus, the Council possesses the means necessary to restore international peace, which has been broken as a result of arms control violations. The determination to resort to these means was expressed in the 1992 statement by the President of the UN Security Council, on behalf of the members of the Council, to the effect that “proliferation of weapons of mass destruction would constitute a threat to international peace and security”, and that appropriate action would be taken to prevent it. Significantly, such action would affect all States breaking the rule of non-proliferation, not only parties to the relevant agreements, even though the ban on proliferation of either nuclear, or chemical, or biological weapons is not yet a rule of customary inter-

national law binding on all States alike. However, a statement by the president of the Security Council does not have a binding legal effect. To have such an effect, it would need to be converted into a formal decision of the Council. Also the term “proliferation” would have to be unambiguously defined.

UN Security Council Resolution 1540, adopted in 2004, requires all governments to put in place “appropriate, effective” measures to deny access to biological, chemical and nuclear weapons, their delivery systems and related materials to terrorists and other non-State actors. The Resolution passed under Chapter VII of the UN Charter, which provides for the application of sanctions in case of non-compliance. However, its scope is narrow. It deals mainly with measures to be taken against potential nuclear proliferators rather than against actual proliferators

58 In practice, it is difficult to reach agreement on the application of drastic measures against States. Even with the requisite two-thirds majority, the Council may prove unable to act when any one of its permanent members exercises the right of veto – as foreseen in the UN Charter – to protect its own interests or the interests of its allies. The problem of reconciling the right of veto with the proper functioning of arms control treaties was recognized as early as in 1946, when the United States put forward the Baruch Plan for the creation of an international atomic development authority. At that time, the US government stressed the importance of immediate punishment for infringements, maintaining that there must be no veto to protect violators of international agreements – a proposition that the Soviet Union categorically rejected.

The 1993 Chemical Weapons Convention (CWC) and the 1996 Comprehensive Test Ban Treaty (CTBT) stipulate that some (unspecified) collective measures may be taken by the parties without reference to the UN Security Council if one of them engages in prohibited activities which can damage the object and purposes of the agreements. Urgent cases of non-compliance with the CWC or the CTBT may be brought to the attention of the United Nations if the required majority of parties decides to do so. However, the right of veto of the great powers in the Security Council may render the relevant UN Charter provisions inoperative.

The General Assembly is another principal organ of the United Nations, to which complaints of treaty violations can be addressed. Its actions are not subject to veto. Only a two-thirds majority is required for a recommendation concerning international peace and security. However, even when it is duly adopted, a resolution of the Assembly – unlike a decision of the Security Council – is not binding on UN members.

IAEA Action

Another intergovernmental organisation capable of dealing with breaches of arms control obligations is the International Atomic Energy Agency (IAEA). As envisaged in Article XII of its Statute, cases of non-compliance with nuclear safeguards agreements are to be reported to the UN Security Council and the General Assembly. If corrective action is not taken within a reasonable time, the IAEA Board of Governors may direct curtailment or suspension of assistance provided by the Agency or a Member State, and call for the return of materials and equipment made available to the transgressing member. A non-complying State may also be suspended from exercising the privileges and rights of IAEA membership. Since no country enjoys the right of veto in the IAEA Board of Governors, adoption of decisions to apply such sanctions cannot be ruled out, but their effectiveness is doubtful.

The IAEA provides very little direct assistance to States; certainly, not for their nuclear power programmes. As regards possible curtailment of assistance provided by States, such a decision may be adopted by the Board, but it is not as unambiguously mandatory under the IAEA Statute as are decisions of the UN Security Council. Even if all the deliveries of nuclear items were actually cut off to penalize the offending State, that State might not feel significantly disadvantaged in a world where no country is exclusively dependent on nuclear power. Withdrawal of materials and equipment already supplied is not a realistic measure, because it would require voluntary co-operation of the State being penalized, which is unlikely. Moreover, return of nuclear supplies may be both exceedingly expensive and dangerous, and the supplier may be unwilling to take them back. Suspension of IAEA membership does not seem to be an effective measure either. In concrete terms, it would

involve withdrawing the right to receive Agency assistance, which is not an important sanction; barring access to information possessed by the Agency, which is available to non-members as well; and exclusion from Agency meetings, which cannot be particularly hurtful. Expulsion from the Agency is not provided for. The weakness of the IAEA enforcement mechanism has been best illustrated by the case of North Korea, which refused international inspection of certain suspect facilities without provoking immediate and effective sanctions.

Other Collective Action

60 Collective sanctions against a violator of a multilateral agreement may be taken also in the absence of an enforcement provision in the treaty. Such sanctions, when applied, are usually related to the nature of the particular offence. Thus, in the 1970s, the breach by India of its undertaking under international co-operation agreements to use nuclear energy exclusively for peaceful purposes prompted a number of countries to restrict their supplies of nuclear materials and equipment to India. Iraq's use of chemical weapons against Iran, in violation of the 1925 Geneva Protocol, went unpunished, but, even before the 1991 Gulf War, certain industrialized States decided to ban exports to Iraq of chemicals which could be used in the manufacture of chemical warfare agents. However, to produce the desired effect, "in-kind" sanctions would have to be complemented by such measures as cancellation of economic assistance, imposition of trade restrictions, and even suspension or termination of vitally needed supplies unrelated to the breach.

Abrogation

In bilateral relations, the threat of abrogation is the primary means of enforcing a treaty, for it may deprive the violating nation of the advantages it has gained from entering it. Alternatively, the party injured by a violation may respond by taking the same prohibited action as the offender, without repudiating the agreement as a whole. Such a "tit-for-tat" interplay – which would be equivalent to informally modifying the terms of the treaty – is conceivable only as

long as the main purpose of the treaty has not been perverted. In multilateral relations, abrogation or retaliation with a similar violation could lead to the collapse of the treaty to the detriment of the complying parties.

Proposed Approaches

One has to admit that the traditional responses to established violations encounter a number of obstacles that are difficult to overcome. Removing these obstacles would require radical changes in the structure and working of the main organs of the United Nations as well as of other international organisations. In particular, the force of UN General Assembly resolutions would have to be enhanced, the Security Council permanent members' veto would have to be restricted or ended, and the prerogatives of the executive bodies of the arms-control implementing organisations would have to be widened and their decisions made mandatory. Such changes, the implications of which would go beyond arms control, would certainly be regarded by many States as politically undesirable. They are, therefore, not feasible in the foreseeable future.

If a response to a violation of a multilateral obligation is to be effective, all or most parties must act in solidarity with the State or States hurt by the violation. However, action in solidarity is not always possible, mainly because many countries are opposed to applying sanctions that have not been decided upon by competent international bodies. If collective enforcement measures against a culprit State were to be applied without the requirement that a formal international decision must be taken in each individual case, such measures would have to be agreed in advance.

In devising possible responses, a distinction must be made between different types of violation. Violations can vary from technical to material breaches, that is, from inaccurate or incomplete reporting to non-observance of procedural clauses, to offences resulting from misunderstanding, to violations of provisions essential to the accomplishment of the object or purpose of the treaty, including obstruction of the control system in pursuit of unilateral advantages. Violations can be committed by governmental authorities, by non-governmental institutions or even by individuals (with or without the

consent or knowledge of the authorities). Further differentiation is necessary between intentional and unintentional breaches. The latter – usually easier to remedy – may result from sheer negligence. Some breaches may be reversible, others may not.

In my opinion, the most appropriate approach would be to make responses to possible violations part and parcel of the complex of obligations contracted by the parties. The agreed responses – different for different treaties, but proportionate to the offences – could be incorporated in the treaty itself, or in a protocol attached to it, or in a protocol added to the treaty already in force. They might include the measures already mentioned, with the exception of the use of force. Military sanctions may be decided solely by the UN Security Council. The responses could be graduated from mild to severe, so as to increase pressure on the violators over time and force them finally to mend their ways. The conditions for transition from one response to another would then have to be spelled out.

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In the present world order the enforcement formula I am proposing – though equitable – would be difficult to apply to the great powers. There is, therefore, a need for a step-by-step approach, starting with an undertaking by the parties to choose and apply at least one of the measures included in a list of predetermined responses. The mere existence of such a list could fulfil the function of deterrence and reduce the probability of violation. A government declining to react to any violation of an arms control agreement and abstaining thereby from efforts to uphold the validity of the agreement would be in breach of its obligation.

It is obvious that compliance cannot be ensured by sanctions alone. The stronger and the richer the country, the easier it may be for it to withstand outside pressure. Nonetheless, it is essential that violations of arms control treaties should not be ignored, and that no country, large or small, developed or undeveloped, should be immune from criticism, condemnation or penalties. The general public tends to equate arms control violations with immediate threats to national security. Reactions to violations should, therefore, be predictable. Violators must apprehend detection.

2. Monitoring Compliance with the Biological Weapons Convention (BWC) by Industry: Is It Feasible ?

Jenifer Mackby, Fellow, Center for Strategic and International Studies (CSIS)

The Center for Strategic and International Studies (CSIS) invited a group of senior industry scientists and managers to develop plans for trial inspections to test the proposed strategy and technologies for a protocol to monitor the BWC at industry facilities. The group of US pharmaceutical and biotechnology industry experts questioned the conclusion that the BWC is unverifiable, and they came up with a detailed proposal in 2004 on how to monitor the Treaty. They believe that the need to stem the proliferation of biological weapons in this age of terrorism makes it incumbent on the US bio and pharma industry, the US government, and the international community to resuscitate the BWC. They also believe that the BWC has taken a back seat compared to the strong campaigns to halt the spread of nuclear and chemical weapons.

The industry experts claim that highly skilled inspectors using their monitoring strategies and techniques should be able to differentiate legitimate facilities from those that mask illicit weapons activities. Because of the dual-use nature of bio materials, they recognized that the task of monitoring the BWC is daunting. They proposed that their BWC trials be conducted as soon as possible and thereafter analysed for benefits and risks in developing inspections. These might be shared with policymakers and ultimately other members of the BWC.

The industry experts are well known in their fields and are in top positions in companies like Monsanto, AstraZeneca, Smith Kline, University of Maryland Biotechnology Institute and other high level institutions. The report states, in fact, that the experts share more than 330 years of varied industry experience. I do not need to detail their bios, as these are included in the report, which I believe GCSP can make available and which can be found on the CSIS website.⁴⁹ The full title of the Report is “Resuscitating

49 The full text of this report, entitled “Resuscitating the Bioweapons Ban: US Industry Experts’ Plan for Treaty Monitoring”, of 1 November 2004, is available on the CSIS Web site at: http://www.csis.org/media/csis/pubs/041117_bioweapons.pdf.

the Bioweapons Ban: US Industry Experts’ Plans for Treaty Monitoring; A Collaborative Research Report of Experts from the US Pharmaceutical and Biotechnology Industries.”

The industry experts designed plans to test their monitoring approach in trial inspections at US bio-pharmaceutical facilities involved in development and manufacturing activities. As you probably know, industry facilities have been the favoured place for governments to hide bioweapon programmes. These experts thought it was essential to determine the technical feasibility of monitoring the BWC. Key principles guided their inspection plans, such as:

a. Balancing monitoring activities to determine treaty compliance with the need to protect proprietary business, trade or defence information (similar to the problem faced in negotiating the CWC). In this context, in order to protect trade and business secrets, all participants in the trials would be obliged to sign a confidentiality agreement.

b. Beginning with basic concepts and graduating to increasingly more complex and demanding trials in order to test BWC monitoring, while at the same time maintaining consultation with host facilities

c. Minimizing the burden on facilities hosting the trial inspections, and sharing the lessons learnt from the trials with interested parties in the United States and other countries.

The industry experts developed a multi-layered on-site inspection strategy. They anticipate that an on-site trial would take 5 days, and would include:

a. An initial site tour, including an inspection of the facility’s strain collections;

b. A review of documents in the facility;

c. Interviewing staff on the production line or in laboratories;

d. Cross-checking information to validate important facts and explore inconsistencies;

e. Taking a final product sample.

It is important to note that the experts stipulated that the trials would seek only information relating to the BWC, and not to proprietary information or other regulations e.g. of the US Food and Drug Administration (which can be more stringent and frequent). They agreed that the most important tool

to reveal any “smoking gun” would be the sampling of a final product. Of course the host of a manufacturing or a development site is likely to refuse to provide samples because of the need to protect proprietary information and thus sampling would probably only take place during a challenge inspection, which would be requested by a BWC member that alleged another party was cheating.

In order to carry out such trials, the experts believe that the team of inspectors should come from the biopharmaceutical industry, academics with industry experience and retired government officials. The host site would supply an observer along with an independent ombudsman who would provide separate evaluations of the activities. A chemical industry expert who had been involved with inspections for the Chemical Weapons Convention and who could thus provide valuable perspectives would also participate, as well as a small number of US government escorts.

The report provides a history of the BWC and the efforts towards a verification mechanism as well as lengthy descriptions of the preparations for trial inspections, logistics, profiles of facilities to host trial inspections, recommended expertise for inspectors, equipment that would be used, tabletop exercises to review data and documents, etc.

The experts stipulated that once inspectors have assessed the activities of a facility, they would prepare an inspection report to include their factual findings on items relevant ONLY to compliance with the BWC. The inspected facility would have 30 days from the receipt of the final inspection report to file a response detailing the steps that they would take to clarify remaining uncertainties. The inspectors would consult and establish deadlines for the site to demonstrate further concerns. They could decide on a follow-up routine inspection in order to confirm that compliance had been established. If the site fails to submit its reports and plans, an immediate routine inspection or, if the issues are considered serious, even a challenge inspection may be called for.

There are concerns that the amount of time that would have elapsed between notifying a site and visiting it would give the site time to cheat. Many of the experts, however, believe that biological materials would leave

fingerprints, and that evidence will be apparent from PCR (polymerase chain reaction) and sensitive enzymatic assays. The FBI in particular has taken the lead in developing procedures for microbial forensics.

The primary purpose of the trial inspections is to test whether inspectors can tell the difference between legitimate industry facilities and covert weapons sites using the proposed inspection strategies and techniques. The secondary goal of the trials is to educate the stakeholders involved in the process of formulating policy – industry and government. The experts believed it best to begin these trials in the manufacturing process rather than development of just one specific product at the host facility. Once the companies gain confidence in the viability of monitoring the BWC and the utility of trial inspections, the trials can increase in difficulty and include development activities. In a manufacturing facility the inspection team will most likely focus on three key aspects of the facility: the level of biosafety containment, the waste treatment system and the operational set-up of the facility. The trials would include 5-10 inspectors, depending on the facility.

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There are very different types of facilities that could be used to test BWC monitoring such as pharmaceutical companies, animal vaccine development facilities, government contractors and laboratories, universities and R&D biotech firms. The experts believed that host companies would recognize the value of the inspection experience because a trial would be an opportunity to test their internal procedures for safeguarding sensitive information.

Moreover, limited shrouding would be allowed for certain equipment, items or material that is considered proprietary or not relevant to the purposes of the inspection. On a tour, the team would look at the type of facility, the health, safety and containment structures, quantities of biological materials, storage temperatures and conditions, ventilation, energy consumption, appropriateness of the equipment for manufacturing the declared product, inventory logs and other documents, as well as access to the facility.

While experts agree that sampling will probably be employed during a challenge inspection, the authority to sample during a routine inspection is one of the most contentious issues in the monitoring of the BWC. It involves a detailed chain of custody that specifies the people authorized to send,

ship and receive the sample. It also entails what kinds of analysis can be performed.

Following a trial, all inspection participants will begin an interactive feedback session in order to learn from the experience and improve the procedure. The host company officials in particular will offer valuable feedback on the tolerability and effectiveness of the procedures as well as the inspectors. The obvious objective here is to educate the industry and the US government about whether BWC compliance can be achieved, and if so at what cost. The industry experts believe that the process could well start with support from their trade associations.

The industry experts concluded that as trial inspections are made more difficult, the US industry will gain more confidence in their utility, as they will see that the interests of host facilities can be safeguarded even when inspectors use more aggressive approaches to find out whether or not a facility is engaged in illegitimate activity. More advanced trials would involve deliberately planting “evidence” that the host facility might be engaged in illicit bioweapons activities, or having the host company deliberately deny inspectors access to parts of the facility, or refusing to provide documentation or interviews. The experts pointed out that trial inspections were carried out at US chemical plants, and these helped to demonstrate that treaty inspections would not compromise trade secrets. In addition, they compared various aspects of the BWC trial inspections to the inspections of the Food and Drug Administration visits and concluded that they mirror each other.

The experts questioned why the US left the international efforts to strengthen the BWC and suggest that if the trial inspections show that inspectors can differentiate between legitimate commercial facilities and those pretending to be, perhaps it would spur renewed interest in restarting international negotiations on a monitoring protocol. This is all the more attractive in view of the large concern in the US about the threat of biological weapons proliferation.

3. The START and SORT Treaties: Comparative Analysis of Compliance Systems

Amb. Yuri Nazarkin

Former Russian Chief Negotiator for START I

The conclusion of the START Treaty⁵⁰ was the continuation of the SALT process⁵¹ that had started in the late 60s, when both sides facing mutual assured destruction (MAD) were interested in reducing nuclear threats.

The elaboration of START began during the worst days of the Cold War and the signing of the Treaty in 1991 symbolised the end of the Cold War. Mutual fears and suspicions, on the one hand, and the growing desire to stop the arms race, on the other, strongly influenced the contents and the form of the Treaty and contributed to its complexity. Both sides were interested in ensuring its reliable compliance.

Here are the main points of the **START Treaty** relating to its compliance:

a. The Treaty has strictly **defined subjects** that are to be reduced, limited or prohibited. This makes verification more effective.

b. **An effective verification system.** It includes: a data exchange and notification system (these exchanges and notifications started in 1990, i.e. before the signing of the Treaty, and later occurred through the Nuclear Risk Reduction Centre and are subject to verification); a variety of on-site inspections (both routine and short-notice); continuous monitoring of mobile missiles production facilities; full access to telemetric information during flight tests of missiles; national technical means (NTM) with a combination of cooperative measures and a prohibition of concealment measures. This verification system is adequate to the limitations, reductions and prohibitions of the Treaty. It has worked quite well. When questions arise, they are discussed and sorted out within the Joint Compliance and Inspection Commission (JCIC).

c. **The Joint Compliance and Inspection Commission (JCIC).** It was established in order to resolve any questions related to compliance and agree

50 Treaty on the Reduction and Limitation of Strategic Offensive Arms.

51 Negotiations on Strategic Arms Limitations.

upon such additional measures as may be necessary to improve the viability and effectiveness of the Treaty⁵².

d. **The right of withdrawal.** Neither side used this right until now.

All the reductions that were provided for by START were successfully carried out on time (by the end of 2001). The implementation of the Treaty after the accomplishment of reductions continued along the remaining tracks (closure of mobile missiles production facilities, restraints on qualitative modernisation of the arsenals, monitoring quantitative levels).

The SORT Treaty⁵³ was signed in 2002 and entered into force in 2003 – under different political conditions. The Cold War was over, the Soviet Union was disintegrated, the Warsaw Treaty Organisation was dissolved, NATO was enlarging, and the US found itself the most powerful country in the world, both militarily and economically. This stimulated the US Administration's trend to unilateralism. The US leaders decided that their military planning should not be subject to any international regulations and limitations. The US withdrew from the ABM Treaty, refused to ratify START 2 (after the Russian Duma ratified it with some reservations) and refused to negotiate START-3. Instead the Strategic Offensive Reduction Treaty (SORT) was concluded.

The Treaty does not provide for any verification. There are two provisions that might be regarded as instruments of compliance – on a Bilateral Implementation Commission and the right of withdrawal (in contrast to other treaties SORT does not require any motivation for withdrawal). Do these provisions really ensure compliance? Let me remind what Article 1 says:

“Each Party shall reduce and limit strategic nuclear warheads, as stated by the President of the United States of America on November 13, 2001 and as stated by the President of the Russian Federation on November 13, 2001 and December 13, 2001 respectively, so that by December 31, 2012 the aggregate number of such warheads does not exceed 1,700-2,200 for each Party. Each Party shall determine for itself the composition and structure of its strategic

⁵² Besides, the task of the Commission is to resolve questions related to the application of relevant provisions of the Treaty to a new kind of strategic offensive arm. The JCIC meets regularly in Geneva and works confidentially.

⁵³ Treaty on Strategic Offensive Reductions (“Moscow Treaty”).

offensive arms, based on the established aggregate limit for the numbers of such warheads”.

This Article raises a number of questions (the rest of the Treaty does not answer them either), namely:

a. Which should be the **levels of the reduction** – 1,700 or 2,200 or somewhere in between? (this is a minor point). This question stays unclear. Art. IV create an additional confusion by providing for the possibility of the extension of the Treaty. The only explanation of this extension can be to defer the achievement of the levels of reduction.

b. **How to count remaining quantities of warheads?** START provides for special counting rules, which permit to reduce not only the means of delivery but also warheads attributed to these means. SORT does not mention any counting rules. The US “Article-by-Article Analysis” stresses that “the Moscow Treaty and the START Treaty are separate”. One can conclude from this that, according to the US position, the START warhead-counting rules are not applicable to SORT.

c. **How to distinguish nuclear warheads from conventional ones?** Air-launched cruise missiles (ALCMs) already exist in both variants. Besides, according to the US administration officials, the 2001 Nuclear Posture Review aims to reduce U.S. reliance on nuclear weapons augment them with growing conventional strike capabilities.

d. **What should be done with excess means of delivery** as well as with excess warheads – are they going to be removed or destroyed? The US side clarified that it meant to reduce its operationally deployed strategic nuclear warheads from missiles in their launchers and from heavy bomber bases, and by removing some missiles, launchers, and bombers from operational service. The Russian side did not specify what it was going to do. In any case the removal from operational service – without destructing or converting – means that warheads, missiles, launchers, and bombers can easily be returned into operational service (“downloading capability”).

As it was said earlier, SORT does not mention verification at all. Of course, each side can use its NTM. But the problem is that the ambiguities and

inconsistencies of the Treaty mentioned above make NTM useless. First of all because NTM cannot count warheads.

Thus, SORT does not permit to judge whether it is complied with or not. Fortunately, START is still in force. It permits to monitor levels of means of delivery with attributed warheads. But it is the merit of START and not SORT.

The comparative effectiveness of the compliance of the two Treaties can be seen in developments that followed the conclusion of each Treaty.

START stimulated efforts aimed at further reductions of nuclear forces. Soon after the signing the START the US side declared its unilateral actions in this field, and the Soviet/Russian side reciprocated with similar unilateral measures. In its Act of Ratification (1992) the Russian Parliament provided for the adoption of a Programme for the implementation of the Treaty and oriented the Russian Security Council on further reductions of armaments. In 1992 Russian-American negotiations on START 2 began. After the signing of START 2 in 1993 preliminary bilateral discussions started with a view to negotiating START 3.

These facts show that START stimulated further reductions and limitations of strategic offensive arms. This process stopped due to reasons that were beyond the framework of this Treaty.

SORT, due to its very vague compliance system, has produced quite different consequences. They can be characterised as the stimulation of further military build-up by both sides. Though SORT proclaimed lower ceilings for nuclear warheads than START, this build-up is going on qualitatively (after the expiration of START in 2009 the restraints for qualitative improvement will be removed), and both sides keep strong uploading capabilities.

Though the Russian Duma ratified the Treaty (May 2003), Russian parliamentarians expressed suspicions towards intentions of the US side. They were reflected in the Statement made by the Duma in connection with the ratification. The title of the Statement is “On Securing Military Preparedness and Strengthening Strategic Nuclear Forces of the Russian Federation”. In fact this Statement demanded a military build-up. No other arms control agreement caused such reaction.

The Duma adopted another Statement, in which it oriented the Russian side in the Bilateral Implementation Commission on efforts aimed at making the Treaty more specific and effective. In particular, it recommended to agree upon an order for the process of reductions, to work out accounting rules for nuclear warheads and to adopt confidence-building measures and regular exchange of information on reductions.

The US Senate ratified SORT in April 2003. Democratic Senators strongly criticised the Treaty during the floor debate, pointing out that it contained serious flaws. Senator John Kerry called SORT “as flimsy a treaty as the Senate has ever considered”. Senate critics noted that SORT forgoes several important provisions contained in prior nuclear arms control agreements. They said that the treaty contains no additional means of verifying the reductions and does not include a schedule for achieving the reductions by the December 31, 2012, end date. It does not require dismantlement or elimination of warheads or delivery systems.

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The Resolution of ratification by the US Senate reflected concerns about the flaws of the Treaty. It contained a number of conditions for securing better control of the Administration on the Treaty implementation and on its line in the Bilateral Implementation Commission.

The US Senate Resolution also raised the question about extending the START verification regime beyond December 2009. Indeed, START’s comprehensive verification regime provides the foundation for confidence, transparency and predictability in further strategic offensive reductions, but definitely it can be applied to SORT only in case SORT is substantially amended. First of all, many START verification provisions relate to conversion and elimination of means of delivery, production facilities, limitations on mobile ICBMs and some other objects, which SORT does not deal with. Besides, the START verification system is designed to count means of delivery and check their characteristics. It can count warheads attributed to these means of delivery in accordance with its counting rules. START provides for re-entry vehicles inspections (10 per year) with the purpose to confirm that deployed ICBMs and SLBMs contain no more re-entry vehicles than the number of warheads attributed to them.

This means that in order to apply some relevant verification provisions to SORT, it should provide at least for warhead-counting rules and regular data exchange.

Thus, both the US Senate and the Russian Duma noted the shortcomings of the Treaty and, as I may conclude, expressed their intentions to correct them somehow through the Bilateral Implementation Commission. But as far as the Commission holds its meetings confidentially, it remains unclear what is going on there. The only source is official unclassified reports by the two governments. In 2006 Washington reported that the US deployed offensive strategic warheads numbered 3,878 as of the end 2005. Moscow, on its side, reported on 1 July 2006 that under START warhead-counting rules it had 4,384 strategic warheads and 912 strategic nuclear delivery vehicles (this information was given under START).

Conclusions

a. Reliability of compliance depends not only on verification and some other provisions that can deter violations, but also, and first of all, on precision and clarity of the basic prohibitions.

b. Verification should correspond to the basic prohibitions.

c. Lack of compliance of arms control agreements causes suspicions; the latter provoke consequences contrary to the very idea of these agreements, i.e. a trend towards an arms build-up and an arms race.

d. If the US and Russia do not want a new arms race, they should launch negotiations on a new treaty on strategic armaments, which would replace START after its expiration and supersede SORT as ineffective.

e. If such a new treaty is not ready by December 2008, the sides should consider the extension of START (in accordance with Art. XVII they are supposed to start this process no later than one year before its expiration). If START I is extended and a new treaty is ready before 2015, it would supersede both START and SORT.

4. The Role of the UN Security Council in Promoting Compliance with Multilateral Disarmament and Non-Proliferation Treaties

HE Mr. Nobuyasu Abe⁵⁴

Ambassador of Japan to Switzerland

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Each one of the multilateral disarmament and non-proliferation treaties has its own compliance and enforcement provisions. For example, the NPT has its article 3 paragraph 1 on safeguards. The IAEA Statute, then, provides in its article 12 paragraph 7-C that the Board of the Governors of the Agency shall report the non-compliance to all IAEA members and to the Security Council and the General Assembly of the United Nations and that it may curtail and/or suspend assistance being provided by the Agency or by a member, and call for the return of materials and equipment made available to the recipient member or group of members. Mr. Pellaud this morning talked about the need to give more clout and authority to the Director-General to enable him to deal with the measures mentioned here. It is also clear from these provisions that first it is the question for the Board of Governors to exercise its mandate that has been already given.

The CWC has its article 12 and an elaborate system of declaration, inspection and verification. The article provides for the Conference of the States Parties to take necessary measures to ensure compliance with the Convention which may include restriction or suspension of the State Party's rights and privileges under the Convention, collective measures by States Parties and ultimately bringing to the attention of the United Nations General Assembly and the Security Council.

The BTWC provides in its article 6 that any State Party which suspects may lodge a complaint with the Security Council of the United Nations for its consideration.

⁵⁴ Former Under-Secretary-General for Disarmament Affairs of the United Nations (2003-06); currently Japanese Ambassador to Switzerland and Liechtenstein. The views expressed here represent the personal views of the author and do not necessarily reflect those of the United Nations or the Japanese government.

In each of the cases the road is provided for the case of non-compliance to lead to the Security Council. But they basically left it to the Security Council how and what measures to take to secure compliance. The referral of the issues of non-compliance to the Security Council, I think, is based on the realization by framers of those treaties and treaty-entities that, while they may institute reporting requirements, inspection verifications, reporting of non-compliance, calling upon the party in question for remedial action and ultimately denial of services or membership of the international body concerned, they knew that they did not have the strong measures of economic sanctions or military action that may ultimately bring compliance of the party in question. Those last resorts are in the preserve of the UN Security Council under the current international framework.

History shows, however, that the Security Council has taken an almost timid course to engage itself with questions of disarmament or non-proliferation treaty compliance.

Even though the Charter of the United Nations provided in its article 26 that the Security Council shall be responsible for formulating plans for a system for the regulation of armaments, it has long been inactive in the field of arms control, or disarmament and non-proliferation. I suppose it was partly due to the intense East-West confrontation during the Cold War that very often made the Council itself inoperative.

It was only after the end of the Cold War that the Security Council exerted itself for more active role in the field of disarmament and non-proliferation. The salient actions are: (1) Resolution 687 of 1991 and the subsequent resolutions on the elimination of WMD in Iraq, (2) Resolution 1540 of 2004 on WMD non-proliferation to non-State actors, (3) recent resolutions on Iranian nuclear issue, and (4) the resolution on the North Korean nuclear test.

Among these, the Iraqi case was the toughest that the Security Council has ever taken to stop proliferation of WMD. It had all mandatory provisions requiring Iraq of abandoning WMD, economic sanctions and verification mechanisms of UNSCOM at the beginning and UNMOVIC subsequently. However, one may call the Iraqi case as a unique case because the action

was taken as a *quid quo pro* for the cease-fire at the end of the war to expel Iraqi forces from occupied Kuwait.

Short of such a special circumstance as Iraq, the Security Council has been rather prudent in taking drastic measures to face WMD proliferation. In the case of North Korea, the Security Council took up the issue as early as April 1993 adopting a resolution calling upon North Korea to reconsider its withdrawal from the NPT and to comply with its safeguards agreement with the IAEA. Learned scholars of the United Nations can immediately notice that the resolution was not a mandatory one, and merely “called upon” or requested North Korea to comply voluntarily with the calls of the resolution. As you know, the question was bilaterally settled in the Agreed Framework of 1994.

The next time the Security Council addressed the North Korean issue was 13 years later, only after North Korea resumed ballistic missile testing and detonated nuclear devices for the first time.

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The Security Council resolution issued after the missile testing carried strong wordings but stopped short of citing Chapter 7 of the UN Charter and short of making actions required of North Korea and UN Member States mandatory. It used such expressions as “Acting under its special responsibility for the maintenance of international peace and security”, “condemns” the missile launches, “demands” that the DPRK suspend all activities related to its ballistic missile programme, “requires” all Member States to exercise vigilance and prevent transfer of missile and missile-related materials and technology, and financial resources in relation to missile or WMD programmes, and “strongly urges the DPRK” to return immediately to the Six-Party Talks. But all these strong words were short of being mandatory.

It was only after North Korea conducted nuclear tests that the Security Council adopted a resolution citing Chapter 7 of the UN Charter. But it was a unique Council resolution in the sense that it specifically cited Article 41 of the Chapter that concerns economic measures only, thus effectively excluding the possibility of any military actions to be taken. The mandatory paragraphs of the resolution that start with verbs “decides” and “shall” referred to suspension of all activities related to its ballistic missile programme and the launch moratorium, abandonment of all nuclear weapons and existing nuclear

programmes in a complete, verifiable and irreversible manner, acting strictly in accordance with the obligations under the NPT and the IAEA Safeguards Agreement, providing the IAEA with additional transparency measures, and abandoning all other existing WMD and ballistic missile programme in a complete, verifiable and irreversible manner. These are fairly comprehensive mandatory requirements on North Korea.

The resolution further decided as a mandatory measure for the UN Member States to impose embargo of major conventional weapon systems, nuclear and other WMD and ballistic missiles items, and luxury goods. The resolution also prohibited export of such items from North Korea. It also imposed financial sanctions on the funds and personnel movement of those who are related to WMD and ballistic missiles.

Thus far, the Security Council has come as far as to take mandatory measures on North Korean nuclear issue. So far, the Six-Party Talks has achieved the commitment from North Korea to dismantle its nuclear programme in return for food, energy, economic and security concessions. I sincerely hope that the current efforts within the framework of the Six-Party Talks will succeed. If they do not succeed, the ball will come back to the Security Council for it to consider further steps.

Compared to the North Korean case, the actions taken so far by the Security Council on the Iranian case are even more reserved. Unlike the case of North Korea which declared that it is out of the NPT and the IAEA, Iran still stays with the NPT and the IAEA, and the series of the Security Council resolutions and its Presidential Statements seem to reflect the agonizing process of the IAEA to enforce its verification mandate on Iran and almost a soul-searching process of the Security Council about what the Council should be doing with such a question of serious security implications.

The latest resolution 1747, for example, starts with recalling a long series of Council resolutions and Presidential Statements and deplores the Iranian failure to comply with those resolutions. As was in the case of SC resolution 1718 on North Korea, this resolution also specifically refers to Article 41 of Chapter VII, thus excluding possibility of any military action under the SC mandate.

The resolution imposes trade and financial sanctions specifically tailored to immediate matters relating to nuclear issues in order to pressure Iran to take the steps required by the IAEA Board of Governors and to resolve outstanding questions, and to suspend all enrichment-related and reprocessing activities, and works on all heavy water-related projects.

The trade, financial and personnel movement restrictions asked by the resolution are similar to those imposed on North Korea except that the restrictions only refer to nuclear matters and the means of delivery rather than to all WMD, and that the restrictions on personnel movement and sale of major conventional weapon systems are voluntary measures.

The long and arduous history of the negotiations that have been conducted between the EU-3 and Iran clearly show that the kind of incentives given by the EU have not been enough to dissuade Iran from proceeding with its nuclear programme. Iran also defies the sanctions so far imposed by the Security Council and declares that it is determined to pursue its nuclear programme. The moment will come when the IAEA submits its next report within 60 days after the Security Council adopted its resolution 1747, i.e. the middle of May. If Iran has not complied with the resolution by that time, the Council will have to consider what next steps it should take.

Having said all this, I am not trying to put blame on the Security Council members. But for those of us who have been long working on disarmament, non-proliferation and arms control matters, it is a well known fact that the Security Council is the last resort of non-compliance questions. It is true that all these issues are clearly not kind of issues that are easy to deal with. Being an issue concerning WMD, each issue relates to the core concern of a State's national security. If the Council fails to handle the issue correctly, the issue may end up with a disastrous consequence sometimes involving military confrontation or worse even a use of WMD.

But exactly because of that concern, the world, the non-proliferation experts and virtually everybody expects the Security Council to face squarely with the question and take appropriate steps at appropriate moments. Those who are concerned seriously about proliferation are inclined to think that the Security Council tends to wait too long and the key members of the

Council very often put their national geopolitical interests ahead of proliferation concern.

The Advisory Board on Disarmament Matters of the UN Secretary-General addressed this question three years ago when the fate of the Iraqi WMD question seriously troubled Secretary-General Kofi Annan. At that time he called on the High-Level Panel on Threats, Challenges and Change to come up with answers, i.e. clear and practical measures for ensuring effective collective action, based upon a rigorous analysis of future threats to peace and security. In an effort to contribute to the works of the Panel, the Advisory Board chaired by Dr. Harald Muller, came up with a series of practical suggestions. Dr. Muller is a serious scholar of arms control and international relations and I know he gave a very serious thought to come up with genuine answers, ideas that are realistic and have a good chance to work.

I think they are still valid proposals and hope the people concerned, especially the five Permanent Members of the Security Council study the proposals seriously. Let me summarize the salient points of the recommendations.

First of all the report cited the SC Presidential Declaration of 1992 which has defined the proliferation of weapons of mass destruction as a threat to peace and international security, and said thus the Security Council “could decide to take action on such cases under Chapter VII of the U.N. Charter. The Council also possesses the authority to take the initiative on its own in cases of proliferation and non-compliance even if referred to it by other actors or institutions.” This is an important point to bear in mind. The Security Council has its own original mandate based on the UN Charter relating to the maintenance of international peace and security. Theoretically it does not have to wait for the referral from other international bodies such as IAEA or OPCW. It can take its own initiative to address an issue of non-proliferation if it considers it to be a threat to international peace and security. Likewise, any Member State of the United Nations may bring any dispute, or any situation that is likely to endanger the maintenance of international peace and security to the attention of the Security Council (Art. 35). The Secretary-General may also “bring to the attention of the Security Council any matter which in his opinion may threaten the maintenance of international peace and security” (Art. 99).

This may deviate a little from the topic of today's seminar but it is also important to bear in mind that the report said that "the Security Council may choose to take the initiative on its own, inter alia, when problems other than non-compliance arise that cannot be dealt with by the instruments currently available to the regimes themselves, or when they present such urgent risks that immediate measures are required."

The report went on to argue that "except for cases where the evidence on non-compliance is unambiguous and undisputed, the Security Council would develop its judgment on non-compliance if it could pose a threat to international peace and security. It would also have to decide on the appropriate means under the Charter to remedy the situation. All these decisions require timely and efficient decisions-making."

The report first recommended that "in cases of concern about non-compliance, the instruments available within established regimes should be fully utilized." This means complementary access under the Additional Protocol under the IAEA, or special inspections if the Additional Protocol is not in force. It means challenge inspections under the CWC and investigations invoked by parties concerned under the BWC.

For cases referred to the Security Council, the report emphasizes that "timely and efficient decision-making should be ensured." For this purpose, "all relevant information and aspects should be made available for consideration" and "if required, the Council should be able to obtain independent technical expertise on short notice, drawing on the verification bodies of the regime concerned." We know that as far as nuclear and chemical weapons-related matters are concerned, there are well-established expertise stored at the IAEA, the CTBTO and the OPCW.

As to BW and missile-related matters, the report recommended that "a core technical WMD verification and elimination capability with particular expertise in the BW and missile sector be available at UN headquarters." "This core organization should be capable of drawing on a broad roster of experts." In this connection, I recall that there is already a roster of experts in the UN Secretariat dating back to the time when the Secretary-General was asked to conduct fact-finding missions during the Iran-Iraq War. Since then

years have passed and the list has been more or less dormant. This list needs to be updated.

I also recall that there have been suggestions to keep the expertise of the UNMOVIC somewhere in the UN Secretariat. I understand there is not yet a consensus among the Security Council members as to the disposition of the UNMOVIC. Sooner or later they will have to make a decision. My advice would be to keep a small staff derived from the UNMOVIC so that the necessary expertise is securely kept in the Secretariat and the Secretariat can immediately draw on the expertise when the need arises in future.

Last, I wish to touch upon the question of proliferation of WMD to non-State actors and specifically SCR1540. It is true that the existing WMD regimes are not well-equipped to cope with the new threat of proliferation to non-State actors. It was the revelation of the A.Q. Khan underground network that motivated the Security Council to adopt the resolution on non-proliferation of WMD to non-State actors.

At the time of the adoption of the resolution, there were much reservations expressed mainly by non-permanent members of the Security Council and the non-Security Council members of the UN. Their concern basically was that the Permanent Members of the Security Council may be usurping the legislative power of the General Assembly, the forum where the non-permanent UN members have a greater chance to be heard. But it was also true that the General Assembly did not or could not act expeditiously to meet the urgent concern about the proliferation of WMD to non-State actors. Thus, the Council eventually adopted the resolution with the understanding that it was an exceptional stopgap measure.

SCR1540 poses comprehensive requirements under Chapter 7 of the UN Charter on Member States to establish domestic legislations on export and border controls, physical protection, law enforcement and financial control to prevent proliferation of WMD and their means of delivery to terrorists and other non-State actors. If implemented fully the resolution will be a very powerful tool. However, 3 years from the adoption of the resolution in 2004, there seems to be still a long way to go to fulfil the task.

As of last February (23) when the Security Council had a meeting on the operation of the Committee 1540, only a little over two-thirds of the UN Member States (135) submitted their first national reports on the implementation of the resolution. I have to remind you that these are initial reports of Member States basically describing the current state of their domestic measures. My expectation was that from there the national reports should be reviewed by the Committee so that Member States would be reminded of the gaps in domestic measures. So far 85 Member States have responded to inquiries by the Committee. Clearly this process should be further pursued to encourage Member States to fully implement the resolution.

It also became clear that quite a number of Member States do not have administrative resources or technical capacity to implement the resolution fully. Therefore, I think the Council should consider ways to provide assistance to those Member States that have willingness but have resource problem.

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Against this background I think the Council should renew the mandate of the committee. During the February meeting the Slovakian Chairman of the Committee 1540 had already acknowledged that “the results of work completed by the Committee thus far clearly indicate that resolution 1540 will not have been fully and universally implemented when the existing mandate of the Committee expires in April 2008.”

But after all, whatever the competence of the Security Council under the UN Charter, and however desirable it is for the Council to take a firm action to deal with a question of non-compliance, it is up to the 15 members of the Council to decide if a specific case threatens international peace and security and deserves such an action to be taken by the Council. Practically this requires an agreement among the five Permanent Members of the Council.

My impression is that over the years the important members of the Council very often put their geopolitical or other interests ahead of non-proliferation concern. It can be strategic consideration, e.g. to think that it may not be a totally bad idea to have a country in question to come to hold nuclear weapons because the country may serve as a military buffer, or it may help tilt strategic balance favourably to that member. It can be sometimes commercial and business interests of that Council member. Naturally every country with

nuclear industry is eager to have new business opportunities, or it may want to improve general trade and business ties with the country in question.

Therefore, we have to try to establish an international environment where proliferation concern is not overpowered by immediate national security or commercial interests. This is easier said than done. My personal experience in the Japanese Government and in the UN Secretariat shows that those of us who are working on disarmament and non-proliferation issues are always in competition with those who are working in geopolitical departments who very often put more immediate political expedience ahead of long-term proliferation concerns.

The recommendation contained in the Secretary-General's High Level Panel on Threats, Challenges and Change issued towards the end of 2004 contained interesting recommendations in this respect. In order to strengthen the ability of the Security Council to generate credible information about potential instances of proliferation, the report recommended that links between IAEA and OPCW and the Security Council must be strengthened. The Directors-General of IAEA and OPCW should be invited by the Security Council to report to it twice-yearly on the status of safeguards and verification processes, as well as on any serious concerns they have which might fall short of an actual breach of the NPT or CWC.

The report also recommended that the Security Council should be prepared to deploy inspection capacities for suspected nuclear and chemical violations, drawing on the capacities of IAEA and OPCW. Until multilateral negotiations yield a BWC verification mechanism, the Security Council should avail itself of the Secretary-General's roster of inspectors for biological weapons, who should remain independent and work under United Nations staff codes. This roster of inspectors should also be available to advise the Council and liaise with WHO authorities in the event of a suspicious disease outbreak.

My hope is that all these additional arrangements for the Security Council will make members of the Council more familiar with proliferation questions and thus make them looking at issues more from proliferation-prevention point of view.

5. Issues in Implementation and Verification

Edward Ifft⁵⁵

Former Deputy Director of the On-Site Inspection Agency and
Senior Advisor to the Defense Threat Reduction Agency (USA)

Thirty five years ago, President Nixon proclaimed that we were moving from the era of **confrontation** to the era of **negotiation**, and he was correct, since what followed was a “golden age” of successful arms control negotiations. Ten years ago, as we were finishing negotiation of the CTBT, it seemed to some of us that we were about to move from the era of **negotiation** to an era of **implementation**. It seemed that a series of crucial problems in international security had been dealt with successfully:

a. Nuclear weapons had been controlled by the INF, START and CTB Treaties;

b. The NPT appeared healthy, especially after the 1995 Review Conference had made it permanent;

c. Chemical and biological weapons had been banned completely and clear international norms established;

d. The problem of dangerously high levels of conventional weapons in Europe had been solved by the CFE Treaty;

e. The Open Skies Treaty provided a useful confidence-building regime, especially for States without access to satellite imagery;

f. Improving commercial satellite imagery promised to make verification easier, or at least bring more players into the game.

Of course, no one believed that all problems had been solved – far from it. However, it did seem that most of the major weapons problems had been dealt with and the time had come to shift the focus to making these agreements work effectively. Now, sadly, we seem to be regressing somewhat:

a. The NPT is under great stress, primarily because of the activities of North Korea and Iran;

⁵⁵ The views expressed are those of the author and do not necessarily reflect the policies of the US Government or Georgetown University.

b. The START regime is in grave danger – it is set to expire in 2009 and the prospects for preserving its key benefits are in doubt;

c. There are widespread suspicions of cheating under both the CWC and BWC, but little is being done about it;⁵⁶

d. Russia is hinting it may withdraw from both the INF and CFE Treaties;⁵⁷

e. Contrary to earlier expectations, the CTBT has still not entered into force;

f. The Conference on Disarmament has been unable to make any significant progress for 10 years.

In spite of this rather troublesome outlook, I believe that the earlier assessment that we need a new focus on implementation, verification and compliance was correct – indeed the current problems support that view. Most of the major agreements have some sort of implementing organisation, some of which run extensive on-site inspection (OSI) efforts. In general, these organisations have functioned well, but there is a bewildering diversity in their structure and how they deal with verification and compliance problems. In view of the time limitation, I will deal rather superficially with five regimes which illustrate this diversity.⁵⁸

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1. START

The Joint Compliance and Inspection Commission (JCIC), based in Geneva, began as a bilateral organisation, then was seamlessly converted into a five-party body (US, Russia, Ukraine, Belarus and Kazakhstan) after the break-up of the Soviet Union. The INF Treaty was implemented in a similar fashion. The JCIC does not administer OSI, but it does deal with any OSI issues which arise. The JCIC has a very good record.

While it is the case that some issues continued for years, these have generally been of a technical nature and have not detracted from the successful

56 See, for example, "Adherence to and Compliance with Arms Control, Non-proliferation and Disarmament Agreements and Commitments," Op. cit.

57 On 26 April 2007, President Putin announced that Russia is "suspending" compliance with the CFE Treaty. See *International Herald Tribune*, April 27, 2007.

58 For a more complete discussion of implementation organisations, see Edward Ifft, "Witness for the Prosecution: International Organizations and Arms Control Verification," *Arms Control Today*, November, 2005, pp. 12-19.

implementation of the Treaty. Although the required START reductions were successfully completed in 2001, several notifications a day are provided through the Nuclear Risk Reduction Centres of the parties. About two inspections per month continue to be carried out. A large 100-page data base is updated completely every six months. The JCIC has issued over 100 Agreements and Joint Statements to improve the viability and effectiveness of the Treaty.

It is important to note that the deliberations of the JCIC are classified. This, in my opinion, gives it a great advantage over the large multilateral implementation bodies, which must operate largely in the public spotlight.

2. NPT

It is somewhat curious that something as important as the NPT lacks an organisation responsible for implementation of the entire Treaty – the IAEA, based in Vienna, is primarily responsible for Safeguards. The fact that the IAEA received the Nobel Peace Prize in 2005 indicates the high regard in which it is held. It spends about \$100m per year on verification.⁵⁹ I believe the IAEA has made heroic efforts to deal constructively with the serious problems posed by North Korea and Iran. Its Action Team played a key role in understanding Iraq's illegal nuclear activities. The world should have paid greater attention to its findings and recommendations.

Important recent activities of the IAEA include devising the Additional Protocol and strengthening the Small Quantities Protocol, which provided a loophole in the regime. The IAEA is now grappling with the fuel cycle problem – how to allow the benefits of Article IV without undermining the prohibitions of Article II.

3. CWC

The relevant body is the Organization for the Prevention of Chemical Weapons (OPCW) in The Hague. Earlier administrative and financial problems appear to have been resolved. The OPCW conducts about 200 inspections per year. About ¼ of the 71,000 tonnes of chemical weapons declared (the

⁵⁹ See IAEA web site, www.iaea.org.

great majority in the US and Russia) have been successfully eliminated, along with about 1/3 of the 8.6 million items (shells, etc.) associated with such weapons,⁶⁰ and reductions are continuing. Although there are suspicions of cheating under the CWC, it is curious that no **challenge inspections**, which are provided for in the Convention, have been requested by any State Party.

4. CFE

The relevant body for The Conventional Forces in Europe Treaty, sometimes called “The Cornerstone of European Security,” is the Joint Consultative Group (JCG), based in Vienna, which reports to the OSCE. Something like 80,000 treaty-limited items in five categories have been eliminated. Because CFE was basically negotiated as a NATO-to-Warsaw Pact agreement, the break-up of the Soviet Union and the Warsaw Pact posed huge problems for implementation. These were solved remarkably smoothly, first by the Tashkent Agreement, which divided up the former Soviet Union’s military assets relevant to CFE among the eight successor States, and then by the Adapted CFE Treaty negotiated by all the States Parties. Another creative change was the adoption of “mixed teams” during inspections, which gave more States Parties access to locations of interest.

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5. BWC

The Biological Weapons Convention has neither an implementation organisation, nor a verification regime, relying instead on Review Conferences. Earlier efforts to design a verification regime were abandoned in 2001. The 2006 Review Conference did establish three full-time staff positions in the UN Department of Disarmament Affairs, at least until 2011. It also set up annual meetings with a work programme.⁶¹ Although there are suspicions of cheating under the BWC, little action has been taken to clarify or respond to these.

60 See OPCW web site, www.opcw.org.

61 Oliver Meier, “States Strengthen Biological Weapons Convention,” *Arms Control Today*, February, 2007, pp. 27-29.

All these and other implementing organisations have shown agility, ingenuity and good will in modifying regimes to keep pace with new technical and political developments, especially the dissolution of the Soviet Union and the Warsaw Pact. All the major agreements seem to be operating successfully and some have already met their chief goals – INF, START, CFE. Much of the credit for this goes to the implementing organisations, and, of course, to the States Parties themselves.

However, the record is less good on **compliance** and **enforcement**. Rather than rehearse specific problems, which are well known to this audience, I will pose briefly four questions, which illustrate the difficulties:

1. Where does the evidence of compliance or non-compliance come from ?

Such evidence comes from declarations made by the States Parties, from OSI and from information gathered by the States Parties. The latter category comes from National Technical Means, or National Means and Methods, which is an alternative formulation. Use of such information may be limited by concerns about “sources and methods,” but greater use could be used made of such information in cueing OSI.

In my view, organisations have been too lax about “technical” and book-keeping violations – failure to submit declarations, failure to meet deadlines, failure to pay assessments, failure to negotiate safeguards agreements, etc.

It is extremely important that these organisations maintain very high standards of not allowing unwarranted intelligence infiltration and in protecting confidential and proprietary information. The IAEA and OPCW seem to have very good records in this regard, but we must recognize that a certain lack of confidence in the ability of international organisations to do this has been a factor in deciding not to seek a verification regime for the BWC and a potential Fissile Material Cut-off Treaty (FMCT). According to Hans Blix, there were concerns regarding UNSCOM in this regard, which might explain some of Iraq’s resistance to its work.⁶²

62 Hans Blix, “Disarming Iraq”, Pantheon Books, 2004, pp. 36-37, 77-78.

2. How is information interpreted?

Information regarding compliance is interpreted by the States Parties themselves. It may also be interpreted by a Technical Secretariat and by an Executive Council, if such bodies exist. A good example is provided by the CTBT, under which the International Data Centre provides analytical services, as requested, to individual States Parties.⁶³ The pre-war intelligence on Iraq illustrated the difficulties of interpretation, as well as the need for better communication about compliance matters, both internally and internationally.

Interpretation of information is particularly difficult when judgments regarding *intent* are required. This is a key aspect of the problems posed by Iran's nuclear programs. It is worth noting that both the CWC and BWC require distinctions to be made between “offensive” and “defensive” programs and between “peaceful” and “hostile” intent.⁶⁴

3. Who decides guilt or innocence?

This difficult question presents a confused picture. Basically, such decisions are the responsibility of individual States Parties. However, many States feel that they lack sufficient access to information or the technical expertise to make such judgments. For bilateral agreements, the other State Party will make a compliance judgment and the parties must simply work out the matter between themselves. For the big multilateral agreements, the situation is less clear-cut. There seems to be general agreement that the UN Security Council is the supreme authority. However, some agreements also mention the UN General Assembly, and the CWC and CTBT mention the possibility of an advisory opinion from the International Court of Justice. Other fine legal points can arise, such as whether a State Party is *reported* or *referred* to the UNSC.

4. If there is a guilty verdict, then what?

This may be the hardest question of all and everyone is painfully aware how difficult and frustrating it is to try to find international consensus on

63 Protocol to the Comprehensive Nuclear Test Ban Treaty, Part 1.

64 Chemical Weapons Convention, Art. II; Biological Weapons Convention, Art. I, Art. II.

appropriate responses to non-compliance. Some agreements have built-in penalties, such as financial penalties, loss of vote, and so on. Countries can resort to financial sanctions, political sanctions, and, as a last resort, military action. However, there is generally great reluctance to inflict real punishment in response to transgressions for fear of making the situation worse. Turning a blind eye to seemingly small compliance issues can foster an atmosphere of permissiveness that can lead to more serious problems later. Perhaps a greater use of “name and shame” when compliance problems first arise could head off problems before they become major political issues.

South Africa and Libya provide encouraging examples of how quite serious violations of arms control agreements can be resolved peacefully and in the best interest of all concerned. It will require a large measure of good will and good fortune to make the current difficult cases turn out so well.

6. Concluding Remarks

HE Mr Jean-François Dobelle,
Permanent Representative of France to the Conference
on Disarmament

Dear Colleagues and friends,

Allow me to say first a few words in French before continuing in English.

Je suis heureux de vous accueillir à la Mission de la France à Genève, ville internationale et centre mondial de la francophonie au sein du Système des Nations unies. En effet, c'est vous, chers amis francophones, qui faites rayonner, avec le pays hôte et tous les membres de notre grande famille, notre langue mais aussi nos valeurs communes de solidarité, de défense des droits de l'Homme et d'attachement au droit international. Soyez donc ici les bienvenus et sentez-vous comme chez vous.

I am very pleased to welcome you all at the end of this international seminar jointly organised by the French Centre for International Security and Arms Control Studies (CESIM) and the Geneva Centre for Security Policy (GCSP) with the support of the French Ministry of Foreign Affairs. I am particularly glad that you have chosen as a subject the difficult issue of non-compliance

with disarmament and non-proliferation agreements, especially multilateral agreements. I wish to recognize the important work already accomplished in this area by the International Expert Group on Global Security, chaired by Dr Ola Dahlman in association with CESIM. I was told that your seminar hosted by the GCSP was an opportunity for a deep and useful discussion thanks to the participation of high-level international experts on this subject.

This topic is indeed more than ever on the top of the agenda of the international community. Today, even more so than in the 1990s, our attention needs to focus on the challenges to the international régime of non-proliferation of weapons of mass destruction and their means of delivery. The examples of such challenges are abundant:

a. The good surprise brought by the decision of Libya to renounce its WMD programmes in 2003,

b. The Iranian nuclear issue and the defiant behaviour of Iran. The resolutions of the Security Council have expressed the serious concerns of the international community regarding its nuclear programme. We deplore that Iran is not complying with UNSC requests and with its other international obligations and that it does not create the conditions to build confidence in the nature of its programme and between this country and the international community;

c. The hope arising from the Six-Party Agreement with the DPRK in February 2007, but also the present concerns about its implementation.

It is therefore very relevant, in this context of regional crises, to question the strengths and weaknesses of the non-proliferation regime in the light of the lessons learnt from experience in the implementation of the major bilateral and multilateral arms control agreements. The cases of non-compliance with such agreements, and the way they were resolved, can indeed serve present and future developments.

In this respect, the issues that were addressed by the IGGS and developed during your seminar are the issues which deserve to be further studied by governments, the academic world and the international organisations. Indeed, as we know perfectly well here at the Conference on Disarmament, the non-proliferation regime and the disarmament agreements need new, imaginative

approaches, taking into account the evolving international context. They need to see their legitimacy and their efficiency strengthened. Our collective and national security depends on sufficient confidence that agreements are complied with. It also requires that the UN Security Council can act, on behalf of the international community, as the ultimate guardian of the norms we are all committed to respect.

Unfortunately the radical change occurred in the international context after 11 September demonstrates that the world is not more secure than during the Cold War. Non-State actors sometimes supported by States are spreading terror, violence and a culture of death. In this context, it is more essential than ever to remain vigilant and to preserve the NPT, this indispensable and irreplaceable instrument of collective security architecture.

I wish to thank you for your invaluable contribution to the thinking and research on this crucial issue. I am convinced that the study which will result from your work, soon to be published, will be thought provoking and will allow the international community to make progress towards the ideals that we all share.

About GCSP

Objectives

The Geneva Centre for Security Policy (GCSP) is an international foundation that was established in 1995 under Swiss law to “promote the building and maintenance of peace, security and stability”. The GCSP was founded by the Swiss Federal Department of Defence, Civil Protection and Sports, in cooperation with the Federal Department of Foreign Affairs, as a Swiss contribution to Partnership for Peace (PfP). The Member States of its Foundation Council now include 35 States and the Canton of Geneva.

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Activities

The GCSP is engaged in four areas of activities:

1. Training in international peace and security, with a special focus on the globalising security environment;
2. Research;
3. Conferences;
4. Dialogue.

The GCSP’s core activity is the provision of expert training in comprehensive international peace and security policy for mid-career diplomats, military officers, and civil servants from foreign, defence, and other relevant ministries, as well as from international organisations. Participants in GCSP courses come from countries of the Euro-Atlantic Partnership Council, NATO’s

Mediterranean Dialogue, the Istanbul Cooperation Initiative, and beyond, including South and East Asia and Africa. In addition to its three principal courses (each lasting from three to nine months) offered in Geneva, the GCSP also offers tailor-made courses in Geneva, Brussels, New York, and other locations. Alumni from GCSP courses remain engaged in the Centre's activities.

GCSP faculty and senior staff, both academics and practitioners, come from a wide range of countries, disciplines, and interests, covering a broad spectrum of the security-policy arena. They write extensively in GCSP publications, internationally reputed peer-reviewed journals, and other publications. In addition, they contribute regularly to the policy and academic debates on key security issues. Moreover, the GCSP convenes conferences, workshops, and discussions to promote dialogue on peace and security issues. Some of the latter activities aim to facilitate discreet dialogue in post-conflict situations.

Thematic Focus

The GCSP's activities focus on the following thematic areas:

- Challenges to Peace and Security, including WMD proliferation, terrorism, threats to human security, and migration;
- Global and Regional Issues, Institutions, including Trans-Atlantic relations, the Middle East, Africa and the Mediterranean region, the Russian Federation and the CIS, South-eastern Europe, and South and East Asia; the UN, the EU, NATO, the OSCE, the AU, and ASEAN;
- Conflict Management and Peacebuilding, including conflict analysis, peace operations, peacebuilding, transition and democratisation, and sexual violence and trafficking in human beings during conflict;
- Geopolitical Implications of Globalisation, including political, economic, social, security, and environmental impact and responses.

About CESIM

The Centre for International Security and Arms Control Studies (Centre d'études de sécurité internationale et de maîtrise des armements – CESIM) is a French organisation specializing in research and analysis of arms control, non-proliferation, and disarmament as well as the strategic questions and international security issues which are attached to these areas. To this end, it publishes, in electronic form, a monthly bulletin in French (Observatoire de la Non-prolifération), available on its Web site (www.cesim.fr).



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