

**SCIENCE AND
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NATO Parliamentary Assembly

**SUB-COMMITTEE ON
THE PROLIFERATION OF MILITARY TECHNOLOGY**

VISIT TO VIENNA AND GENEVA

SECRETARIAT REPORT

10-13 APRIL 2006

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I. EXECUTIVE SUMMARY

1. Members of the Science and Technology Committee's Subcommittee on Proliferation of Military Technology visited Vienna, Austria and Geneva, Switzerland from 10-13 April 2006. The delegation of 24 legislators from member and associate countries, led by Subcommittee Chairman Jérôme Rivière (France) and Committee Chairman Michael Mates (UK), met with representatives of the International Atomic Energy Agency (IAEA), Comprehensive Nuclear Test Ban Treaty Organisation (CTBTO), United Nations Institute for Disarmament Research (UNIDIR), Geneva International Centre for Humanitarian Demining (GICHD), World Meteorological Organisation (WMO) and International Committee of the Red Cross (ICRC). The NATO PA delegation also met with several key ambassadors to the IAEA and the UN Conference on Disarmament. Members of the Subcommittee also visited the IAEA Analytical Laboratories at Seibersdorf.

2. Most of the discussion at the IAEA focused on implications of Iran's nuclear policy. The Agency's officials pointed out that Iranian authorities have not yet dispelled concerns over Tehran's nuclear endeavours and some questions remain unanswered. The Ambassadors of France and the United Kingdom to the IAEA criticised Tehran's posture and its reluctance to cooperate with the international community. They regretted that Iran's decision to decline constructive proposals from the EU and Russia left very little ground for optimism.

3. During the visit, NATO Parliamentarians also discussed other important issues, including nuclear safety in power plants, the relevance and prospects of the CTBT, missile defence and weapons in space, small arms control, challenges for the Conference on Disarmament, humanitarian demining, social and economic benefits of climatic research, prevention of natural disasters, the impact of emerging new military technologies and the prospects of the Biological Weapons Convention.

II. MEETINGS AT THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

4. Mr. Tariq Rauf, Head of Verification and Security Policy Co-ordination, briefed NATO Parliamentarians about the objectives, functions and structure of the Agency, emphasising that the IAEA serves as the world's nuclear verification "watch dog" and is the world's foremost forum for scientific and technical co-operation in the peaceful use of nuclear technology. He described in detail the instruments possessed by the IAEA to verify the compliance of the countries-signatories of the Nuclear Non-Proliferation Treaty (NPT). The traditional instruments are remote monitoring (installing cameras, seals and sensors in nuclear facilities) and the analysis of environmental samplings carried out in a network of analytical laboratories. The Additional Protocol is of particular value because it allows the Agency to make more intrusive inspections on two-hours notice and to receive more detailed information related to the country's nuclear activities.

5. With regard to Iran, Mr. Rauf pointed out that the information Tehran initially provided on its nuclear fuel cycle activities was often incorrect and incomplete. Later on, however, Iranian authorities provided acceptable answers to the majority of the IAEA's requests. Nevertheless, three issues of concern remain:

- 1) the origin of highly-enriched uranium (HEU) and low-enriched uranium (LEU) particles found by IAEA inspectors in the environmental samplings taken from Iranian uranium enrichment centrifuges;
- 2) the full extent of Iranian efforts to acquire P-1 and P-2 centrifuges for the enrichment. The IAEA requested that Iran give access to the records of such efforts in order to ascertain that Iran does not have undeclared enrichment technologies;
- 3) the refusal of Iranian authorities to grant the Agency additional access to certain military bases in Iran that, according to some unofficial reports, might have been engaged in clandestine uranium enrichment activities.

6. Overall, Mr. Rauf concluded that all the declared nuclear material in Iran had been accounted for, but the Agency was still not in a position to confirm that there are no undeclared activities. Mr. Rauf also briefed the NATO PA delegation about the history and the current status of the Agency's relations with North Korea.

7. Answering the questions of NATO parliamentarians, the speaker admitted that the IAEA does not have institutionalised access to relevant intelligence information gathered by NPT member states. The Agency would accept such information if a country decided to share it. With regard to another set of questions related to non-NPT countries, such as India or Israel, Mr. Rauf noted that the Agency had no power to induce these countries to join the Treaty and to embrace commitments under the IAEA Safeguards Agreements. The Agency is not responsible for the universalisation of the NPT and the countries themselves should take an initiative.

8. Another speaker, Mr. Ken E. Brockman, Director of the Division of Nuclear Installation Safety, addressed the issue of nuclear safety. The international legal basis in this field is quite developed and rests primarily of the Convention on Nuclear Safety, which provides a framework for a comprehensive dialog between nuclear experts and officials from 56 contracting parties. In addition, the Code of Conduct on the Safety of Research Reactors deals with important issue of safety of research reactors, some of which are in poor condition. The IAEA supports the initiative to reorganise research reactors to operate on LEU, rather than HEU. The Agency is also responsible for promulgating international standards for the safety of nuclear installation operations. The IAEA standards cover not only the safety of nuclear reactors, but also safety culture, human performance, preparation to deal with possible emergencies and natural disasters as well as data overload and effectiveness of decision-making. Asked by NATO parliamentarians to assess the likelihood of a Chernobyl-type disaster, Mr. Brockman stated that nuclear plants in Europe are safe and the likelihood of such a disaster is extremely low.

9. Mr. Miroslav Gregoric, Office of Nuclear Security, made a presentation on the issue of the security of nuclear materials. According to the records of the IAEA Illicit Trafficking Database Programme, there are almost 700 confirmed trafficking cases. Mr. Gregoric stressed the need for a comprehensive approach in dealing with this issue, including sustainable prevention (first line of defence), enhanced detection and monitoring (second line of defence), and effective response (the third line of defence). Along those lines, the IAEA Board of Governors (BoG) approved a new four-year Nuclear Security Plan for 2006-2009. A particularly worrying trend was the increased interest of sub-state actors in nuclear and radioactive material. Efforts to deal with this threat are still in the initial phase. The main challenge is to adopt a sustained and consolidated effort rather than an hoc approach. Asked by Lord Joppling (UK) about the effectiveness of existing detection technologies, Mr. Gregoric observed considerable progress in this area, but noted that if dangerous material is well-shielded even the most advanced technologies might not detect it.

10. In a separate meeting, Ambassadors François-Xavier Deniau, Representative of France to the IAEA, and Peter Redmond Jenkins, Representative of the United Kingdom, discussed the efforts of the European Troika to address the issue of Iran's nuclear policy. Ambassador Deniau admitted that there was no direct evidence that Iran was pursuing nuclear weapons capability yet a variety of facts can hardly have another explanation. After 18 years of deception and non-compliance and subsequent years of grudging co-operation, Iran has largely lost its credibility, which could be restored by a series of confidence-building measures. The European Troika was determined to build a diplomatic solution that would both satisfy Iran's energy security needs and appease the concerns of the international community. Unfortunately, Iran rejected the European proposals and withdrew from the Paris Agreement. The IAEA will continue its work with Iran, but the ball is in the court of the UN Security Council (UNSC).

11. STC Chairman Michael Mates questioned if there was a clear plan of action if Iran continued to ignore the resolutions of the IAEA BoG and the UNSC. Ambassador Jenkins acknowledged that there was no consensus among the members of the UNSC: while Western countries are in favour of curtailing the deadlines, Russia, for example, evidently opposes rigorous language with respect to Iran. Russia can hardly be persuaded to endorse sanctions as Russia's own economic interests in might be harmed. Mrs. Ana Gomes (European Parliament) noted that the very integrity of the NPT is at stake not least because of mixed signals sent by US authorities engaging in nuclear cooperation with India, a non-NPT state. The ambassadors replied by suggesting that one not ignore the positive outcomes of the US-India deal for nuclear safety and security in the world. Mr. Yuly Kvistinsky (Russian federation) asserted that the West pursues a policy of double standards towards Iran and warned that this might lead to 'another Iraq'. The Ambassadors strongly disagreed with this allegation and pointed out that the 'Iranian crisis' was exclusively a proliferation crisis and a crisis of confidence. The reports of the IAEA unambiguously indicate that Iran breached its commitments under the Safeguards Agreement. Furthermore, there are strong indications that Iran is seeking nuclear weapons capacity. "It's the risk the international community cannot run", said ambassador Deniau. Mr. Mario Palombo suggested that we not be naïve about Iran's true intentions and that we have the courage to take resolute actions. Asked by the Sub-Committee Chairman Jérôme Riviere to comment on the likelihood and consequences of hypothetical military action against Iran, Ambassador Deniau stressed that he believed in negotiations which are the only right solution.

12. The Sub-Committee delegation also visited IAEA Analytical Laboratories in Seibersdorf, near Vienna, where scientists explained how nuclear energy could be used for a variety of peaceful purposes from optimising soil and water management practices to increasing genetic diversity for crop improvement. NATO parliamentarians could also visit the IAEA Clean Laboratory for Safeguards where analysis of environmental samplings takes place to detect clandestine or undeclared nuclear activities in countries subject to full-scope safeguards.

III. COMPREHENSIVE NUCLEAR TEST BAN TREATY ORGANISATION (CTBTO)

13. **Ambassador Tibor Tóth**, Executive Secretary of the Preparatory Commission of the CTBTO, gave an overview of the current status of the CTBT. The Treaty is signed by 176 countries and ratified by 132. However, the lack of key ratifications means that the treaty has yet to enter into force. The Treaty still needs to be ratified by India, Pakistan, North Korea, Israel, the Peoples Republic of China, the United States, Egypt, Iran, Indonesia and Columbia. In spite of that, the CTBTO is already well advanced in developing the International Monitoring System (IMS), a network of stations using 4 types of technologies (seismological, hydroacoustic, infrasound and radionuclide) to detect nuclear explosions. The collected data can also be used to detect and even forecast earthquakes, tsunamis, volcano eruptions and other natural events as well as conventional explosions. Data is relayed from stations to the CTBTO International Data Centre (IDC) for data processing. Although still only 50% operational, IMS picks up thousands of events every year, albeit only a tiny part of them are actually relevant. Due to the novelty of the system it is still not quite clear how it could be used in the civil sector. The experts of the CTBTO presented in detail the technologies used by its stations, the work of the IDC and preparations for possible on-site inspections - an additional tool of the CTBTO verification regime that cannot be invoked before the entry into force of the Treaty.

14. During the discussion, Ambassador Tóth underscored the importance of Treaty ratification. The existing uncertainty seriously limits the use of CTBTO verification system. For example, the IDC is in provisional operation mode and will not operate 24 hours-a-day before the entry into force of the Treaty. Ms. Gomes (European Parliament) asked if the CTBTO system shared its information with respective governments during the tsunami disaster in the South-East Asia.

Ambassador Tóth explained that the IMS had recorded the earthquake west of northern Sumatra. The first automatic event list containing the Sumatra earthquake was released by the IDC to states-signatories about two hours after the event. The IMS detectors proved to be remarkably accurate. The CTBTO representatives stressed, however, that their system provides nothing but raw data and it is up to the countries themselves to make conclusions and take necessary actions.

IV. UNITED NATIONS INSTITUTE FOR DISARMAMENT RESEARCH (UNIDIR)

15. The visit of the STC delegation in Geneva started with briefings at the UNIDIR. **Dr. Christophe Carle**, Deputy Director of the UNIDIR, presented research activities of the Institute which was established to assist diplomatic negotiations and disarmament efforts and to engage the arms control and disarmament community on a variety of current topics. In his presentation, Dr. Carle emphasised several salient security issues that so far lack appropriate attention. MANPADs ("Man-Portable Air-Defence System") - shoulder-launched surface-to-air missiles - present an enormous security challenge especially in an era plagued with terrorism. MANPADs are not covered by existing international regulations, perhaps with the exception of the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies (40 member states). During recent conflicts and turmoils, a considerable number of MANPADs have been stolen. Easy to use and readily available on the black market, MANPADS pose an acute threat to military aircraft and civilian airliners. Dr. Carle said that humanity was rather lucky so far to have avoided such attacks, but we cannot count on luck for long. He called for extending the Wassenaar Arrangement and introducing additional worldwide international regulations in this area.

16. With regard to missile defence (MD) systems, Dr. Carle observed that the proliferation of MD systems is greater than proliferation of missiles themselves. The debate whether MD has a future is pointless: these systems are already being developed and deployed progressively by a number of countries in the world, including Russia, China and North Korea. It is important to avoid, however, a new arms race in MD systems and new international initiatives are needed. One possible way could be using the model of the Russian-proposed Global Control System for the Non-Proliferation of Missiles and Missile Technology.

17. Dr. Carle also urged to pay particular attention to the question of space debris which is dangerously increasing. Even smallest particles spinning around the Earth at enormous speed could cause substantial damage for space assets, further increase debris and thus invoke a chain reaction which would bring disastrous consequences for our civilisation.

18. Mr. Palombo (Italy) emphasised the reality of the threat posed by surface-to-air missiles for the civilian aircraft. These missiles could be launched from trucks outside the guarded airport territory. Several members of the Assembly underlined the need to account for these missiles by imposing a system to follow the route of a missile from producers to end-users. Dr. Carle noted that the UNIDIR is actually working on the list of producers of such missiles. As far as military uses of space are concerned, Mr. Rafael Gimalov (Russia) stated that the existing international regulatory system is outdated and needs to be amended to encompass new challenges. Dr. Carle replied by ensuring that the UNIDIR is preparing documents to review the outer space law, but regretted that substantial breakthrough in this area is currently not possible due to the deadlock in the Conference on Disarmament (CD).

19. **Ms. Valerie Yankey-Wayne**, UNIDIR Researcher, spoke specifically on the issue of small arms and light weapons (SALW). She reviewed the international instruments and regional initiatives including NATO PfP Trust Fund that deals with illicit manufacturing, trafficking and destruction SALW. Ms. Yankey-Wayne identified the black market of SALW as a huge problem.

Referring to parliamentary contribution, she urged legislators to join the Parliamentary Forum on SALW (the international platform designed to support parliamentarians in their small arms related work); and to join their government delegations to UN Conference to Review Progress Made in the Implementation of the Programme of Action to Prevent, Combat and Eradicate the Illicit Trade in SALW in All Its Aspects, New York, 9-20 January 2006.

V. UNITED NATIONS CONFERENCE ON DISARMAMENT

20. In Geneva, the delegation also met with three CD ambassadors: the current **Chairman of the CD Mr. Doru Romulus Costea (Romania)**, previous Chairman **Mr. Zdzisław Rapacki (Poland)**, and **Mr. Eduardas Borisovas (Lithuania)**, the co-ordinator of the working group on Explosive Remnants of War (ERW).

21. Ambassador Costea gave a brief overview of CD's accomplishments in negotiating treaties such as NPT, Chemical Weapons Convention, Biological Weapons Convention and CTBT. However, since the conclusion of the CTBT in 1995, no other treaty has been concluded at the CD. The Conference is unable to reach consensus on any of its four core issues: Fissile Material Cut-off Treaty (FMCT), nuclear disarmament, Prevention of an Arms Race in Outer Space (PAROS) and negative security assurance.

22. There are several reasons for the deadlock:

- 1) some delegations tend to sustain a very tight linkage between all four issues. In other words, they require progress in all four areas, making a progress in one conditional on the progress in another;
- 2) the agenda itself is considered outdated by some countries;
- 3) national priorities differ and sometimes are mutually exclusive;
- 4) some nations abuse the principle of consensus even when it comes to procedural matters.

23. Ambassador Rapacki elaborated on the steps undertaken by the previous Polish presidency to break the deadlock. As the substantial reform of the CD is not plausible, in order to get the Conference moving, thematic debates were introduced for each presidency. For example, under the Romanian leadership, the debate focuses on FMCT, while the upcoming Russian presidency will embark upon the issues related to the outer space. The Polish diplomat believed it is necessary to address issues in a piecemeal manner and to forget about conditionality. Asked by the Committee Chairman Mr. Mates and Lord Joppling (UK) to name specific countries that stall the work of the CD, both ambassador Costea and ambassador Rapacki said they were not in a position to do that but mentioned that different countries block different initiatives.

24. Ambassador Borisovas discussed the acute issue of explosive remnants of war. The Protocol V of the Convention on Conventional Weapons (CCW) deals with this problem, but it is yet to enter into force due to the lack of two additional ratifications. Mr. Borisovas urged the parliamentarians to support ratification of the Protocol if their parliaments had not done so yet.

VI. GENEVA INTERNATIONAL CENTRE FOR HUMANITARIAN DEMINING (GICHD)

25. The issues of humanitarian demining were discussed during the meeting with **Mr. Robert Diethelm**, Support Director of GICHD and **Mr. Tim Lardner**, Mine Action Specialist. Two international instruments deal with the issue: 1) the Protocol II of the CCW, which restricts (not prohibits) the use of all *land*-mines; 2) the Ottawa Convention, which prohibits the *anti-personnel* mines (APMs). The Ottawa convention is a real success. It is signed by 150 states, but unfortunately, some key countries such as the US, Russia and China are absent. APMs pose an

immense challenge as they are difficult to find and remove. Mr. Diethelm identified major elements of the Mine Action programme: education programmes (teaching communities how to live near mines), mine clearing, stockpile destruction, victim assistance and the international advocacy of demining. It is important to note that the actual demining has to be carried by local deminers. The international assistance focuses merely on providing funding, equipment, know-how, advice and management. It is also extremely important to use available resources wisely, i.e., to ensure that clearing mines near inhabited places is a priority.

26. According to Mr. Lardner, the progress in demining technologies has been steady albeit not remarkable. No fundamentally new techniques were introduced, but the traditional ones are being increasingly enhanced and mastered. These techniques include:

- 1) odour detection, a popular and effective technique that employs the scent of specially trained sniffer dogs, rats and sometimes other animals such as pigs or bees. A new methodology called REST is being developed based on remote sensing. REST involves scent from a source being collected on filters and presented to animals for analysis (detection).
- 2) mechanical applications such as tractors carrying massive metal detectors, are irreplaceable for certain missions, for example, clearing roads in Sudan. However, maintenance of such machines may prove to be extremely complicated.
- 3) manual clearing, the slowest but still the most reliable technique.

VII. WORLD METEOROLOGICAL ORGANISATION (WMO)

27. Due to the constant interest of the STC in climate issues, briefings were organised for the delegation at the WMO, a specialised agency of the UN for meteorology (weather and climate), operational hydrology and related geophysical sciences. **Mr. Gilles Sommeria**, Senior Scientific Officer at the World Climate Research Programme, addressed specifically the issue of global warming. A worldwide network of ground-, sea- and air-based stations as well as satellites provides an enormous amount of data on change of temperature and levels of greenhouse gases in different parts of the world. The scientific analysis suggests that a dramatic increase in temperatures in the last 100 years is related to human activity. All estimates indicate that the global warming trends will continue in future. Therefore, the international community has to be prepared to deal with negative consequences including coastal erosion, desertification, increases in natural disasters such as storms, increases in health risks in the tropics, increases in floods and precipitation in humid areas and permafrost decrease, etc. An increase in natural disasters as a result of global warming could cost the world over \$300 billion annually by the year 2050.

28. **Mr. Rodolfo de Guzman**, Director of the Strategic Planning Office, stressed that the importance of the social and economic benefits of weather-, climate- and water research is often unappreciated due to low visibility of meteorological services. However, credible meteorological data is crucial in many areas including agriculture, fishery, energy sector, transportation, tourism, health and so forth. Investing in meteorology results in 400-500% return of investments, Mr de Guzman stressed.

29. According to **Ms. Maryam Golnaraghi**, Chief of the Natural Disaster Prevention and Mitigation Programme, hydro-meteorological natural disasters (HMNDs) such as storms, avalanches, floods and droughts are more frequent and disastrous than geological ones (earthquakes and volcano eruptions). HMNDs have an increasingly negative impact on economy, food security, water resources, health and other aspects of life. This is especially the case for the developing countries. HMDs cannot be avoided but it is possible to avoid or at least diminish losses in human lives. Effective meteorological services are crucial in order to achieve this. Many

countries of the world are still very much in a reactive mode, instead they need to focus more on prevention.

30. The experts at the WMO refused to comment on explicitly political issues, such as ratification of the Kyoto Protocol, but urged the politicians to take necessary decisions based on evidence provided by the scientific community.

VIII. INTERNATIONAL COMMITTEE OF THE RED CROSS (ICRC)

31. On the last day of the visit, members of the Subcommittee visited the headquarters of the ICRC. **Mr. Louis Maresca**, Legal Adviser at the ICRC Legal Division, discussed the current status of and main challenges for the International Humanitarian Law (IHL). IHL seeks to minimise effects of armed conflicts on people who no longer participate in fighting. The main principle of the IHL: it is prohibited to use weapons of a nature that might cause superfluous injury and suffering. IHL succeeded in prohibiting or restricting the use of exploding bullets, chemical and biological weapons, non-detectable fragments, mines, incendiary weapons, blinding lasers and the explosive remnants of war. The ICRC experts are involved in promoting IHL and developing respective international conventions.

32. **Dr. Robin Coupland**, adviser on armed violence and the effects of weapons for the ICRC, addressed the issue of biological weapons (BW). He admitted that one could foresee the emergence of new, exotic and attractive agents that are easier to produce and to deliver. Even the feasibility of 'ethnic targeting' can no longer be completely ruled out. The sense of responsibility and consciousness of the scientific community is of utmost importance. Scientists must realise that some of their publications might serve as a cookbook for terrorists. He stressed that scientists often are not aware that production of BW is legally prohibited. The future biologists should be informed of that at university. However, it is difficult to effectively stop BW research and development due to the dual-use nature of many bio agents. Dr. Coupland especially underscored the need for the upcoming BWC Review Conference to send a clear signal in order to uphold the norm of prohibition. However, he was 'slightly pessimistic' about the success of this conference due to the evident lack of consensus among the countries on the future of the BWC.

33. Dr. Coupland also spoke about an interesting issue of "Non-Lethal Weapons" (NLWs). He asserted that NLW is merely an attractive marketing term because most of these weapons can cause serious damage and even lethality. Some NLWs are strikingly inhuman, for example blinding lasers that are prohibited by a separate convention. Dr. Coupland presented different types of NLWs, such as acoustic, electric, electromagnetic, etc. He stressed that the ICRC is neither "for" nor "against" NLWs. Some of them might indeed be irreplaceable, for example, in hostage crisis situations. The main issue is how to distinguish truly non-lethal weapons from those that cause serious damage to a victim.

34. The Subcommittee delegation also visited the impressive International Red Cross and Red Crescent Museum.
