



Status of and challenges to chemical weapons destruction

Dr. Stephan Robinson
Green Cross Legacy Programme
St.Galler-Ring 9
CH-4055 Basel
Tel./fax +41-61-382 91 97
stephan.robinson@greencross.ch
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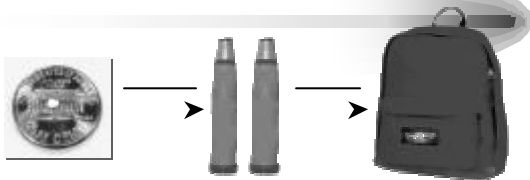


Toxicity of chemical weapons

- Two generations of chemical weapons (CWs)
 - Blister agents: mustard gas, lewisite
 - Attack the skin, relatively low lethality
 - Nerve agents: tabun, sarin, soman, VX
 - Attack the nervous system, high lethality



Nerve Agent Toxicity




The size of a lethal dose of VX (10 mg)

Two 122mm MRL warheads contain 600'000 lethal doses of VX total


Two warheads could fit in a backpack - each weighs 16 kg and is 56 cm tall



Explosive release of 2 backpack-size Sarin warheads in a stadium filled with 65'000 people results in 1'500-23'000 deaths



Urban Results




For two 122mm MRL warheads

VX Explosion

- 70-1'200 deaths
- 10'000-50'000 injuries

Sarin Explosion

- 35-300 deaths
- 3'000-20'000 injuries



The Chemical Weapons Convention

- Prohibits since April 1997 the development, production, stockpiling, and use of CWs
- Puts the destruction of CWs under international control
- Is a non-discriminatory treaty
- Provides regular on-site inspections and provisions for challenge inspections
- Has today 145 member states



Declared CW stockpiles

- Russia: 40'000 metric tons at 7 stockpiles
- U.S.: 31'500 metric tons at 9 stockpiles
- India: several thousand metric tons
- South Korea: several thousand metric tons

- Important groups of missing member states:
Korean Peninsula, Middle Eastern States



Status of destruction

- Russia: first destruction facility opens in 2002
- U.S.: 23.3% destroyed by Sept. 2001
(newer data not available)
- India: no numbers available
- South Korea: stalled because of public protests



The Russian situation

- Enormous challenge
- Has declared CW destruction as one of its prime international obligations
- Has requested already before ratification of the CWC international assistance
- Main assistance package from U.S.: support to construction of nerve agent destruction facility in Shchuch'ye (Southern Urals)



American conditions (1)

- U.S. FY2002 budget for chemical weapons destruction in Russia: USD 50 million
- Conditions:
 - "(1) information provided by Russia, that the United States assesses to be full and accurate, regarding the size of the chemical weapons stockpile of Russia;
 - *Bilateral discussions started on 26 February 2002*
 - "(2) a demonstrated annual commitment by Russia to allocate at least \$25,000,000 to chemical weapons elimination;
 - *Russian expenditures 2001: USD 115 million, Russian FY2002 budget: USD 200 million*



American conditions (2)

- "(3) development by Russia of a practical plan for destroying its stockpile of nerve agents;
- "(4) enactment of a law by Russia that provides for the elimination of all nerve agents at a single site;
 - *New plan approved in August 2001, foresees a centralized nerve agent destruction facility in Shchuch'ye + transport from the other stockpiles*
 - *Enactment of the State Commission for Chemical Weapons Destruction*



American conditions (3)

- "(5) an agreement by Russia to destroy or convert its chemical weapons production facilities at Volgograd and Novocheboksark; and
 - *Russia has requested the OPCW to approve conversion of the former production facilities*
- "(6) a demonstrated commitment from the international community to fund and build infrastructure needed to support and operate the facility."



Foreign assistance to Russian CW destruction (1)

- Total costs of Russian CW destruction programme: USD 3.5-4 billion
- Committed
 - USA: USD 888 million (Shchuch'ye)
 - Germany: USD 31 million (Gorny)
 - EU (TACIS): USD 16.3 million (Gorny, Dzershinsk Shchuch'ye)
 - UK: 11.4 Mio. USD (Shchuch'ye)
 - The Netherlands: USD 10 million (Gorny)
 - Italy: USD 6.9 million (Shchuch'ye)
 - Norway: USD 2 million (Shchuch'ye)
 - Sweden: 0.5 Mio. USD (Kambarka)
 - Finland: 0.4 Mio. USD (Kambarka)
 - Canada: USD 0.2 million (Shchuch'ye)



Foreign assistance to Russian CW destruction (2)

- Total committed non-U.S. funds: approx. USD 80 million (depending on exchange rates used)
- Considered
 - Switzerland: USD 35 million
 - Canada: USD 1.8 million
 - Sweden: USD 1 million
 - Finland: USD 0.5 million
 - Nuclear Threat Initiative: USD 1 million
- Total considered non-U.S. funds: approx. USD 40 million



Unresolved questions

- Endpoint of CW destruction
- Transport of CWs and their reaction mass across Russia
- Processing of final waste
- Poor public involvement
- Neglect of public health, environmental monitoring and emergency preparedness
- Additional international assistance
- Coordination of international assistance
