

Appendix I

A summary of Iraq's chemical and biological munitions

Introduction

1. Open source reports announced the discovery of some munitions in southern Iraq in January 2004, and speculated that those munitions contained prohibited chemical warfare agents. Subsequently, it was declared that the munitions in question did not contain prohibited chemical warfare agents.
2. However, the reports cast a spotlight on the subject of prohibited munitions in general and specifically on what was previously known about Iraq's chemical and biological munitions and what was discovered during the period of UNMOVIC inspection activities in Iraq.
3. From 27 November 2002 to 17 March 2003, UNMOVIC conducted over 90 inspections of munitions-related facilities in Iraq. During the course of the inspections a small number of proscribed munitions, components of proscribed munitions or suspect related items were either discovered by UNMOVIC inspectors or examined as the result of declarations by Iraq. No evidence of either current or recent development or production of proscribed munitions was uncovered.
4. The UNMOVIC findings regarding munitions either designed or possibly intended for use with chemical or biological agents and what was previously known about those munitions are summarized below.

Findings regarding confirmed chemical and biological warfare munitions

5. The four types of munitions referred to in the following paragraphs were all declared by Iraq as having been developed for use with chemical and biological warfare agents and had been destroyed during the period of activity of the Special Commission. The discovery of some of these types of munition by UNMOVIC suggests that residual munitions from the former Iraqi chemical and biological weapons programme may be found in the future.

155-mm artillery projectiles

6. Iraq purchased tens of thousands of empty 155-mm artillery projectiles designed to disseminate smoke compounds. Subsequently, the original markings were generally painted over and the projectiles filled with approximately 3.5 litres of the chemical warfare agent mustard. More than 10,000 of these projectiles were destroyed under the supervision of the Special Commission.
7. In October 2002, Iraq declared the existence of 10 mustard-filled munitions at the former Muthanna chemical weapons facility. UNMOVIC was previously aware of the 10 155-mm mustard-filled artillery projectiles remaining from uncompleted Special Commission operations. During operations in mid-February 2003, UNMOVIC inspectors used remote-controlled drilling equipment to both sample and evacuate the contents of the projectiles. Laboratory analysis of the samples

confirmed the contents as high-purity mustard. Both the mustard and the projectiles were destroyed in subsequent operations.

122-mm rocket warheads

8. Iraq purchased or produced more than 100,000 empty 122-mm rocket warheads suitable for use with chemical weapons agents. Several different models of warhead were supplied by foreign manufacturers, including the Sakr-18 and 30; the Firos-25 and other manufacturers' copies of those warheads. Iraq also produced indigenously both aluminium and steel 122-mm warheads similar to those purchased abroad. The Special Commission supervised the destruction of thousands of those warheads that had been filled with the nerve agent Sarin. Iraq declared that it had unilaterally destroyed thousands more.

9. Eighteen 122-mm rocket warheads designed for use with chemical agents were either declared by Iraq in January 2003 or were discovered by UNMOVIC inspectors. The munitions included four Firos warheads declared by Iraq and 13 Sakr-18 warheads and one Al-Buraq warhead discovered by UNMOVIC inspectors. All of the warheads were examined and no indication of prohibited chemicals was found.

Sub-munitions for cluster bombs

10. In its declaration of December 2002, Iraq described tests conducted in 1988 of 250-kg CB-250 cluster bombs containing 18 3.5-litre sub-munitions filled with a chemical agent simulant. The Special Commission recovered examples of two versions of these 122-mm sub-munitions and examined the type of cluster bombs they were tested in.

11. UNMOVIC inspectors visited several relevant sites in an effort to gain a clear understanding of Iraqi work relating to cluster bombs. During the course of the inspections, a 122-mm sub-munition designed to contain and disseminate approximately 2 litres of liquid agent was discovered. Subsequently, this sub-munition was identified as the 3.5-litre chemical sub-munition declared in the declaration of December 2002 as being tested in the CB-250 cluster bomb. This sub-munition was not completely intact and did not contain prohibited agents.

R-400 aircraft bombs

12. Iraq developed the R-400 series of bombs to meet technical needs expressed by the Air Force. The steel body 100-litre capacity R-400 was closely patterned after the 375-kg BRI-P parachute-retarded high explosive filled bomb that Iraq had purchased in substantial numbers. Biological warfare agents were loaded in the R-400 A version (most had an internal epoxy coating), whereas chemical agents were intended for the uncoated R-400's. Iraq declared the unilateral destruction of some of these bombs and the Special Commission supervised the destruction of others.

13. In February 2003, Iraq invited UNMOVIC to witness the excavation of the remains of R-400 series bombs that had been unilaterally destroyed. Eight intact R-400 bombs were recovered, together with components from 96 additional bombs of the same type. As noted in earlier reports to the Security Council, subsequent laboratory analysis of liquid samples collected by UNMOVIC from two of the intact

bombs revealed evidence of fragments of the DNA of *Bacillus anthracis* and of the chemical compounds Iraq used to neutralize the biological agent.

Findings regarding munitions and components linked to prohibited programmes

14. UNMOVIC inspectors discovered munitions and munition components similar to items Iraq included in its declaration of December 2002. However, no linkage with prohibited programmes was conclusively established prior to the withdrawal of inspectors in March 2003.

107-mm rocket warhead

15. Iraq acquired substantial quantities of 107-mm short-range ground-to-ground rockets with conventional warheads. The declaration of December 2002 mentions that Iraq considered, but did not implement, development of a chemical warhead for this rocket.

16. UNMOVIC inspectors discovered a single example of an unfinished aluminium base plate similar in design to base plates for known chemical warheads for other rockets. The diameter of the example discovered suggests that it was intended for a 107-mm warhead.

540-mm rocket warhead

17. The 540-mm Luna (Frog-7) rocket is a large battlefield support weapon with a 70-km range. The declaration of December 2002 includes statements regarding the proposed development of several different types of warheads for the Luna, including a cluster warhead for use with chemical agents.

18. An empty fibreglass cluster warhead for the 540-mm Luna rocket was discovered by UNMOVIC inspectors. UNMOVIC believes this warhead is possibly the one described in Iraq's declaration as having been proposed for use with chemical sub-munitions.

Findings regarding munitions and components whose purpose is under review

19. UNMOVIC inspectors discovered munitions and munition components that are not described in Iraq's declaration of December 2002 although they have characteristics consistent with chemical or biological munitions. It was not possible to clarify the actual purpose of the following items prior to the withdrawal of the inspectors.

- A small number of components of an unusual 81-mm rocket warhead were discovered at two sites. Subsequent comparison of the components with similar components of known chemical rocket warheads suggests that they are part of two different warheads for 81-mm rockets, possibly intended for use with proscribed agents. No trace of proscribed agents was found on the recovered components.

- A fibreglass mould that Iraq identified as intended to produce a cluster warhead for a 200-mm rocket was discovered. Subsequently, inspectors discovered parts identical in design to the base plate for a 122-mm chemical rocket warhead but appropriate in diameter for a rocket of 200-mm diameter. The extent of Iraq's work on 200-mm rockets and the linkage between the warhead mould and the base plate had not been resolved prior to the departure of the inspectors.
- An unusual sub-munition fuse was discovered. This fuse was reportedly intended for use with a conventional sub-munition for the previously described 200-mm rocket cluster warhead. However, subsequent analysis at UNMOVIC headquarters in New York disclosed that the fuse was similar to one observed on an unidentified sub-munition in a video of Iraqi tests of chemical sub-munitions. The detailed analysis of the video pertaining to this sub-munition was carried out after the withdrawal of UNMOVIC inspectors thereby preventing the necessary follow-up investigation.
- A small number of 155-mm steel spheres pierced with a pattern of small holes were discovered at two sites. These spheres were designed for use as sub-munitions in the Iraqi-built Nasr-28 cluster bomb. Site representatives stated that the spheres were designed to spray a smoke-producing compound as they rebounded in the air following impact with the ground. UNMOVIC could not conduct an adequate follow-up investigation for lack of time.