Iraq's Weapons of Mass Destruction: A Net Assessment
An IISS *Strategic Dossier*

Press Statement
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Monday, 9 September
Arundel House, London

Introduction

Welcome to the Launch of a special publication by the IISS: 'Iraq's Weapons of Mass Destruction: A Net Assessment', An IISS *Strategic Dossier.*

As all of you know well, the IISS has for over 40 years annually published *The Military Balance*. This is the only reliable, publicly available inventory of the world's armed forces, rebel groups and organised non-state armed groups. We have drawn on this experience in analysing material gathered from many different sources in compiling this *Dossier*.

We began to work on the preparation on this *Dossier*, in the month of June. By then it had become evident that the increased attention to the threat posed by Iraq's programmes to develop nuclear, biological, and chemical weapons as well as ballistic missiles, was crying out for a net assessment of this kind. This *Dossier* is the result of intensive work over eight weeks that has drawn on many sources. All of you have received today a copy of the final *Dossier.* In addition we have provided a document providing key excerpts from each chapter in the document. You will see that on each page of the *Dossier* that does not carry a table or graphic there is a 'pull' that extracts the main argument on the page. Read sequentially, these provide a quick summary of the highlights. Finally we have replicated from page 74 of the *Dossier* a table that summarises our net assessment of Iraq's current capabilities. A copy of the statement from which I am now reading will be available at the end of this press conference. I am delighted to be joined today by the Editor of the Dossier, Dr Gary Samore, Senior Fellow for Non-Proliferation, and by Dennis Gormley, Consulting Senior Fellow for Defence Policy and Technology.

Our objective has been to assess, as accurately and dispassionately as possible, Iraq's current WMD capacities. The task is challenging. Although UN inspections of Iraq produced a tremendous amount of technical information on the development, objectives and relative capabilities of Iraq's WMD and missile programmes, **Iraq made every effort to obscure its past, obstruct dismantlement of its present assets, and retain capabilities for the future.** Since Iraq forced inspections to end in December 1998, it has become more difficult to learn about its activities and assess its capabilities.

Questions include:

- **The extent to which Iraq has taken advantage of the absence of inspectors to begin reconstituting its programmes**
- **The extent to which Iraq has been able to obtain vital foreign assistance through cracks in the sanction regime**
- **The degree to which Iraq has been able to conduct activities that will have evaded sophisticated surveillance techniques**
- **The degree to which information gathered from defectors on Iraq's programmes can still be relied upon**

Recognising these difficulties, the IISS set out to build its assessment on a strong foundation of technical expertise. We have drawn on recognised technical experts, with long field experience in UNSCOM and IAEA inspections, to provide initial drafts on Iraq's nuclear, biological, chemical, and ballistic missile programmes. We have applied our own expertise and those of many other experts in scrutinising each draft. Each chapter covers the historical development of Iraq's technical capabilities through to the end of the Gulf War. The *Dossier* then assesses the disarmament achievements and the kind of activity that Iraq was able to conceal or continue during the inspection period ending in December 1998. We then carefully analyse what Iraq may have been able to accomplish in each of these key weapon areas since 1998.

UN Resolutions and the History of Inspections

Our report begins by recalling the relevant Security Council Resolutions that followed the cessation of hostilities at the end of the Gulf War. UN Security Council Resolution 687 passed on 3 April 1991, established the formal ceasefire between Coalition forces and Iraq. **Key amongst the ceasefire terms was the prohibition against Iraq's retaining, acquiring or developing WMD and long range missiles.** In addition there was a demand that Iraq unconditionally accept the destruction, removal or rendering harmless of its WMD under international supervision. **Iraq was required to submit within 15 days a declaration of all WMD sites and items**. In the period that followed passage of the resolution Iraq did everything in its power to avoid these and other obligations placed upon it.

From the start of the inspections by UNSCOM in 1991 through to the demise of UNSCOM in 1998 Iraq practised a series of measures designed to prevent the UN inspectors from finding the full range and extent of its proscribed WMD and missile programmes. Indeed, this activity was so intense, that UNSCOM had to set up a special unit to counter Iraq's efforts. While there were notable successes in defeating Iraqi concealment efforts, many others failed.

The UNSCOM experience demonstrates that no on-site inspections of Iraq's WMD programmes can succeed unless inspectors develop an imaginative and carefully co-ordinated counter-concealment strategy.

On 17 December 1999, one year after UNSCOM left, the UN Security Council passed Resolution 1284, reaffirming all previous UNSC resolutions, disbanding UNSCOM, and establishing the UN Monitoring Verification and Inspection Commission or UNMOVIC.

Iraq has continued to reject Resolution 1284 on the grounds that it does not set a clear timetable or criteria for lifting sanctions.

If UNMOVIC inspectors were ever to go to Iraq, it would take them time to develop and refine the unique inspection techniques required. In addition, it would take them considerable field experience to develop the necessary tradecraft to deal with Iraqi obfuscation efforts.

Certainly, the strength of Baghdad's commitment to possess WMD is measurable in part by its efforts to resist unfettered UN inspections.

Nuclear Weapons

The IISS *Dossier* then goes on to analyse Saddam Hussein's nuclear weapons programmes. It carries an extensive examination of Iraq's programmes to produce highly enriched uranium (HEU) through various enrichment technologies, first electro-magnetic separation and then gas centrifuge. On the eve of the Gulf War, Iraq was on the verge of producing significant amounts of HEU that would have allowed it within two to three years to produce its first nuclear weapon**. Had the Gulf War not intervened, Iraq could have accumulated a nuclear stockpile of a dozen or so weapons by the end of the decade.**

The Gulf War heavily damaged Iraq's nuclear facilities. By the end of inspections in 1998, the IAEA was confident that Iraq's indigenous nuclear weapons programme had not produced more than a few grammes of weapons useable nuclear material.

At the same time, Iraq's nuclear potential was not completely eliminated. Most importantly, the scientific and technical expertise of Iraq's nuclear programme survived, and Baghdad has tried to keep its core nuclear teams in place working on various civilian projects.

Since 1998, Iraq has had more opportunities to reconstitute elements of its nuclear programme and to keep these activities secret. Iraq could have completed the necessary theoretical modelling and practical testing of critical nuclear weapons components. Our report covers this in detail. **As for production of indigenous material, Iraq could take a number of measures to hide a 1000 machine centrifuge plant from surveillance, but it would be more difficult to acquire foreign materials, equipment and components without detection.** It is unlikely that Iraq could have completed a facility for the production of nuclear weapons-useable material in only a few years.

Our net assessment of the current situation is that:

- **Iraq does not possess facilities to produce fissile material in sufficient amounts for nuclear weapons.**

- **It would require several years and extensive foreign assistance to build such fissile material production facilities.**

- **It could, however, assemble nuclear weapons within months if fissile material from foreign sources were obtained.**

- **It could divert domestic civil-use radioisotopes or seek to obtain foreign material for a crude radiological device**.

Biological Weapons

Our *Dossier* then goes on to examine the much more difficult subject of biological weapons. In the mid 1980s, Iraq's BW programme had picked up speed and by 1989, Iraq began to produce BW agent in volume. After its invasion of Kuwait, Baghdad stepped up large scale BW agent production and assembled rudimentary BW munitions. **These weapons were distributed to military units, who were delegated to use them if coalition forces advanced on Baghdad or used nuclear weapons.** Most of Iraq's key BW facilities, which had been successfully hidden from Western intelligence agencies, escaped attack during the Gulf War. After UN inspections began, Baghdad continued to conceal its BW programme until 1995. **By the time UNSCOM's work ended in 1998, it was only able to account for a portion of Iraq's BW munitions, bulk agents, and growth media.**

Again, Iraq retains the expertise and industrial capability to produce agents quickly and in volume if desired. Moreover, Iraq has had a decade of experience countering intelligence and developing effective concealment methods. Western intelligence agencies take seriously defector information to the effect that underground facilities have been built and a fleet of mobile biological production laboratories deployed, though these are hard to confirm.

Iraq can certainly produce new stocks of bulk BW agent, including botulinum toxin and anthrax with its existing facilities, equipment and materials. BW agent could be delivered by short range munitions including artillery shells and rockets. Delivery by ballistic missile is more problematic given that much of the agent would be destroyed on impact and the immediate area of dispersal would be small. Civilian casualties could still be in the hundreds or thousands. **Refurbished L-29 trainer aircraft could operate as weapons-carrying UAVs with a range of over 600km. Such UAVs, in theory, would be considerably more effective than ballistic missiles in delivering CBW. Commando and terrorist attack is also possible.**

Our net assessment of the current situation is that:

- **Iraq has probably retained substantial growth media and BW agent (perhaps thousands of litres of anthrax) from pre 1991 stocks.**
- **The regime is capable of resuming BW Agent production on short notice (in weeks) from existing civilian facilities. It could have produced thousands of litres of anthrax, botulinum toxin and other agents since 1998. Actual stocks cannot be known.**
- **Iraqi production of viral agents is unknown as is the question of whether the regime possesses small pox.**

Chemical Weapons

Compared to its efforts to acquire nuclear and biological weapons, Iraq's chemical weapons (CW) programme was the first to reach full maturity, and included riot control, blister and nerve agents in a variety of munitions including missile warheads, aerial bombs, rockets and artillery shells. Iraq used chemical weapons extensively against Iranian troops from 1982 onwards. **Indeed Iraq emerged from the war with Iran with the largest and most advanced chemical weapons capability in the Middle East at that time**. Between 1988 and 1991 Iraq made further progress in developing binary chemical munitions, producing and weaponising an advanced nerve agent, VX, and developing an indigenous production base for key CW precursors. **The Gulf War however devastated Iraq's primary CW production facilities and a large portion of its stockpile of CW munitions. Through to 1998, UNSCOM was able to dispose of large quantities of CW munitions, bulk agent, precursors and production equipment that were not destroyed in combat.**

Here too, Iraq was almost certainly able to conceal and salvage key aspects of its CW programme, including CW munitions, agent and precursors. Iraq has retained the experienced personnel, know how and chemical industrial capability to reconstitute elements of its CW programme on an emergency basis.

Iraq could have retained stable precursors for a few hundred tonnes of sarin and cyclosarin and a similar amount of VX. Weaponisation of any retained material would not pose a significant obstacle.

Assessing the production of new CW agent and precursors depends on determining the degree to which Iraq will have chosen to mobilise its civilian chemical industry to produce these capabilities. **Without inspectors present, Iraq would not find it difficult to build on pre 1991 stocks and produce and weaponise fresh agent.**

Unless Iraq has advanced beyond the impact fusing and warhead design of its 1990 era special warheads, its ability to disseminate effectively CW agent on ballistic missiles is questionable, since so much agent would be destroyed on impact. **Iraq's known ability to marry chemical warheads to its rocket and artillery pieces (with ranges up to 30,000 metres) could complicate operations for opposing forces, who would be required to wear protective gear.**

Our net assessment of the current situation is that:

- **Iraq has probably retained a few hundred tonnes of mustard and precursors for a few hundred tonnes of sarin/cyclosarin and perhaps similar amounts of VX from pre-1991 stocks.**

- **It is capable of resuming CW production on short notice (months) from existing civilian facilities. It could have produced hundreds of tonnes of agent (mustard and nerve agents) since 1998. In these circumstances, it is not possible accurately to estimate present stocks**.

Ballistic Missiles

A great deal of attention needs also to be placed on Iraq's ballistic missile capabilities. Iraq is proscribed by UN Resolutions from possessing ballistic missiles with a range greater than 150km. In the mid 1970s Iraq began to import Scud B missiles with a range of 300km from the Soviet Union and ultimately acquired 819. In the mid 1980s Iraq worked to modify the Scud missiles in order to double their range. The new missile, called the *al Hussein*, with a range of 650km, was used during the war against Iran.

During the 1991 Gulf war an *al-Hussein* missile strike against a US military facility in Saudi Arabia caused the greatest number of US casualties in any single incident, and the mobility of the launchers allowed them to evade allied planes, which were unable to destroy any mobile missiles during the war.

In the wake of the Gulf War, much of Iraq's missile infrastructure lay in ruins. (The US and UK, during Operation Desert Fox in December 1998, attacked a number of missile related facilities). During the inspections period Iraq continued to conduct small scale covert research and development on proscribed missiles. In addition, Iraq continued missile related procurement efforts. Despite international sanctions, Iraq covertly negotiated transactions with more than 500 companies. Its interests included liquid propellant engine parts, solid propulsion technology, guidance and control equipment, and many other items**. In one case complete gyroscopes recovered from Russian long range ballistic missiles were even smuggled into Iraq and later recovered by UNSCOM in December 1995.**

UNSCOM attempted to account for all imported missiles and for indigenously produced missiles, but that accounting was incomplete and **it must be presumed that Iraq has been able to retain some of its proscribed missiles. Also, it is likely that Iraqi engineers will have been able to increase the propellant tanks capacities in the *al Samoud* to reach ranges of some 200km with a few hundred kilogrammes payload suitable for CBW delivery.**

Our net assessment of the current situation is that:

- **Iraq has probably retained a small force of about a dozen 650km range *al-Hussein* missiles. These could strike Israel, Saudi Arabia, Turkey, Iran and Kuwait. Could be armed with CBW warheads.**
- **Iraq does not possess facilities to produce long range missiles and it would require several years and extensive foreign assistance to construct such facilities.**
- **Iraq may, in addition, have a small number of *al Samoud* missiles with ranges of up to 200km able to strike Kuwait but only if deployed within the southern no fly zone**
- **It is capable of manufacturing rudimentary CBW warheads; its development of more advanced designs is unknown**
- **Iraq can convert civilian vehicles to provide mobile launchers for its ballistic missiles**

Conclusion

In conclusion, war, sanctions and inspections have reversed and retarded, but not eliminated Iraq's nuclear, biological and chemical weapons and long range missile capacities, nor have they removed Baghdad's enduring interest in developing these capacities. **The retention of WMD capacities by Iraq is self-evidently the core objective of the regime, for it has sacrificed all other domestic and foreign policy goals to this singular aim.** It has retained this single objective, and pursued it in breach of the ceasefire and UN Security Council Resolutions that brought a conditional end to the 1991 Gulf War. Over more than eleven years the Iraqi regime has sought to evade its obligations and undermine support for the sanctions and inspections regime meant to eliminate its WMD capacities and contain its ambitions. Iraq has fought a relatively successful diplomatic war of attrition. It is worth recalling that the international debate 18 months ago was centred on how sanctions against Iraq might be relaxed, and inspections concluded with some dispatch in light of the dwindling willingness to support the containment policy developed in 1991.

Today, after four years without inspections, there can be no certainty about the extent of Iraq's current capacities. A reasonable net assessment is that Iraq has no nuclear weapons but could build one quickly if it acquired sufficient fissile material. It has extensive biological weapons capabilities and a smaller chemical weapons stockpile. It has a small force of ballistic missiles with a range of 650km, that are capable of delivering CBW warheads, and has prepared other delivery methods for CBW, including manned aircraft and UAVs**. Sooner or later, it seems likely that the current Iraqi regime will eventually achieve its objectives.**

In compiling this *Strategic Dossier*, the IISS has sought to put the best available facts on this difficult issue before the wider public. **This Strategic Dossier does not attempt to make a case, either way, as to whether Saddam Hussein's WMD arsenal is a *casus belli per se*. Wait and the threat will grow; strike and the threat may be used.** Clearly, governments have a pressing duty to develop early a strategy to deal comprehensively with this unique international problem.