JIC Assessment, 10 May 2001

IRAQI WMD PROGRAMMES: STATUS AND VULNERABILITY

Key Judgements

I. Our **knowledge of developments** in Iraq's WMD and ballistic missile programmes since Desert Fox air operations in December 1998 **is patchy**. But **intelligence gives grounds for concern** and suggests that Iraq is becoming bolder in conducting activities prohibited by UNSCR 687. (para 1)

II. We **know most about Iraq's ballistic missile programme**. Over the past two years, there has been **a step change in progress**. In addition to its permitted programmes for missile up to 150 km range, we know that **Iraq is developing longer range systems** possibly up to 2000km. We have good intelligence on **research and development facilities** but we **do not know where the longer range missiles will be built.** (paras 2-6)

III. We have **no clear intelligence on Iraq's nuclear programme**. There is evidence of increased activity at Iraq's only remaining nuclear facility and a growing number of reports on **possible nuclear related procurement**. We judge but cannot confirm that Iraq is conducting **nuclear related research and development** into the **enrichment of uranium** and could have longer term plans to produce enriched uranium for a weapon. If successful, this **could reduce the time needed to develop a nuclear warhead once sanctions were lifted**. (paras 3-10)

IV. We have **good intelligence of Iraq's former chemical and biological warfare (CBW) facilities**, their **limited reconstruction** and **civil production**. Taken together, this suggests a continuing research and development programme. There is additional unconfirmed but credible **intelligence of weapons filling.** But we cannot confirm that specific sites are being used for CBW related activity. (paras 11-19)

V. Although some WMD facilities could be destroyed by direct military action, this would be **unlikely to have a significant overall impact on Iraq's WMD programmes** because:

- we do not know where all Iraq's ballistic missile development is taking place. There would be **some impact on Iraq's permitted missile programmes,** but military action would at best **only delay the development of prohibited longer range missiles**;
- **although targetting of Iraq's remaining nuclear facility** might have some impact on its nuclear programme, it would be **unlikely to eliminate all nuclear activity**, some of which may be taking place at other sites;
- because much of Iraq's CBW activity can be conducted in legitimate civil research facilities, Iraq's **CBW** programme is likely to be unaffected by action against known suspect sites. (para 21)

Implications: This assessment underlines the importance of pursuing vigorously work on the proposed UN controlled goods list, which would help sustain effective controls on Iraqi WMD development.

IRAQI WMD PROGRAMMES: STATUS AND VULNERABILITY

At MoD request we examine what we know of Iraq's WMD programmes, their future direction, our level of confidence in the intelligence, our confidence in being able to identify the location of Iraq's WMD facilities accurately and the potential impact of direct military action against them.

Iraqi WMD

1. Our knowledge of developments in Iraqi WMD and ballistic missile programmes since the Desert Fox campaign of December 1998 is patchy. But […] does give grounds for concern and suggests that **Iraq is becoming bolder** in conducting activities **prohibited by UNSCR 687**. Little of the intelligence is, however, sufficiently clear to identify the exact status and ultimate objectives of these programmes. Intelligence is clearest on Iraq's **missile facilities and associated activities**. In Iraq's other WMD programmes, there is **little to link information about activity prohibited under UNSCR 687** with **identifiable facilities where such activity is taking place**. Where we can identify facilities, **suspect activity is conducted under cover of the production of civil goods**.

Iraq's ballistic missile programme

2. We have **reliable intelligence of Iraq's current short range ballistic missile programmes**. We have intelligence which is less clear on longer term missile objectives. But there is a growing body of evidence that Iraq intends to develop missiles well beyond its permitted range of 150km. This would represent **a step change in Saddam Hussein's military capabilities**.

3. Iraq retains the expertise that it used in extending the range of SCUD type missiles before the Gulf War, as well as some key components. Since then it has rebuilt its missile infrastructure and development capability. An injection of an additional $20 million and political pressure from Saddam Hussein appears to have **accelerated progress over the past year.** This includes:

- development of the **150 km range liquid propellant Al Samoud,** now close to limited production, and work on the solid propellant **Ababil-100**, which has begun flight tests;
- work on **extending the range of the Al Samoud missile to 200-300km -** production could start within the year;
- work on **a further missile engine test stand with the capacity for much larger engines than the Al Samoud, including SCUD;**
- tests on pairs of solid propellant motor cases. These are at a very early stage of development, but **if combined in a missile**, they could have a range of up to **2000km** with a 500kg payload. Developed individually into missiles, using the same payload, they could achieve a range of between **700-1200km**.

4. Even though we have reliable intelligence on much of Iraq's missile development, we do not have a complete picture of where all of it is located. [Material indicating knowledge about some locations redacted]

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- […]

5. At present, we **do not know** the location of some 20 reassembled 650 km range Al Hussein missiles. Neither do we know where **Iraq's extended range Al Samoud missiles** are being developed or **where their** new **SCUD type missiles might be** produced. We also lack recent intelligence of the **Iraqi industrial complexes which formerly manufactured components for its missile programmes**. In addition, some work has been dispersed from known missile facilities to unidentified sites.

6. We assess that within a year Iraq will **begin production of Al Samoud** and possibly its **extended range version**. Both could deliver a conventional, chemical or biological warhead. Apart from the construction of large test stand **there is nothing to indicate plans to produce new SCUD type missiles**. We do not know enough about the possible 2000 km range missile to judge a timescale for its completion.

Iraqi nuclear programme

7. Iraq is prohibited under **UNSCRs 687 and 707** from **any nuclear activity**. Its nuclear programme was dismantled after the Gulf War, and what remained was subject to UN controls. The **IAEA** conducted regular inspections under **UNSCR 687** until 1998. Since then its access has been restricted to an annual verification of Iraq's declared nuclear material at Tuwaitha.

8. We have an **unclear picture of the current status of Iraq's nuclear programme.** […] **Iraq continued its nuclear research after the Gulf War** and recalled its nuclear scientists in 1998. […] **efforts by Iraq since 1998 to procure items that could be used in a uranium enrichment programme using centrifuges.** These include:

- attempts to procure production scale quantities of **aluminium pipes** of specifications similar to those that can be used for a first generation centrifuge;
- […]
- attempts to procure **large quantities of other dual use items**, including products used in the production of uranium hexafluoride and in the chemical purification of uranium.

There has also been **significant, but intermittent activity** at Iraq's remaining nuclear facility, Tuwaitha, over the past year. But it is unclear **whether this is linked to the recent procurement attempts.**

9. Although we do not know if Iraqi procurement has been successful, the intelligence suggests that **Iraq could be investigating the enrichment of uranium using different types of centrifuge**. One of these enrichment routes is unproven and would be difficult to achieve; and Iraq lacks key materials and equipment for other methods. If, as we suspect, the procurement is linked to a nuclear weapons programme, the **scale** of the procurement could **indicate possible plans for more than research and development**. This could take place at unidentified sites and would be easy to conceal.

10. We do not believe recent media reports that Iraq possesses nine nuclear weapons and conducted a test at an underground test site. We continue to assess that while sanctions remain in place, Iraq cannot indigenously develop and produce nuclear weapons. Were sanctions lifted, it would take **Iraq at least five**

years to produce a nuclear device and a **further two to produce a warhead**. If successful, preliminary work of the kind that Iraq appears now to be undertaking **could shorten this timescale**, as would the acquisition of fissile material and/or expertise from abroad.

Chemical and Biological Warfare

11. We have good intelligence of **Iraq's former CW associated facilities, […]** But intelligence of other related **CW activity, including possible weaponisation, is less clear**.

12. We believe that Iraq retains some production equipment, stocks of CW precursors, agent and weapons, […]

13. [This paragraph referred to reports on activities related to production of chemical agents.]

14. We judge that this reflects **a continuing chemical warfare programme**, including research and development, together with the possible production and weaponisation of agent. We **know the location of Habbaniyah II and some of its delivery options**, including the remotely piloted **L-29** aircraft. However, we **do not know the location of pre-Gulf War CW related stocks** or where Iraq may have filled weapons. Such stocks would enable Iraq to use its chemical industry to **produce significant amounts of mustard gas within weeks** of a decision to do so, and **nerve agent within months**.

15. Our picture of Iraq's **BW programme** is unclear. We have good intelligence of **one facility** that could be used **to support BW agent production**. […] points to the possible research and **production of BW agent is unconfirmed**.

16. We believe **Iraq retains equipment and materials to produce BW and a number of delivery options**. There is currently little evidence of BW related work at facilities formerly associated with Iraq's BW programme. But there is reliable […] of castor bean processing at Habbaniyah I, which could be used to produce ricin toxin.

17. […]:

- Iraqi **attempts to recruit new scientists by people formerly associated with Iraq's BW programme** to work on **BW related research, including genetic engineering**;
- [This referred to mobile BW production facilities];
- evidence of increased activity at a former **BW associated plant in Amariyah.**

18. We judge that this indicates continuing biological warfare research and the possible production of agent. Although **we know** the location of **two possible BW associated facilities**, we **do not know the location of research or production facilities**. We continue to judge that **Iraq could produce BW agent within weeks** of a decision to do so. This could be done in legitimate biotechnology facilities, without procurement from abroad, or recourse to suspect facilities.

19. These judgements on Iraq's CBW capability are not new. But these capabilities represent the **most immediate Iraqi WMD threat**.

Vulnerability of Iraq's WMD Programmes

20. Intelligence on Iraqi WMD is difficult to obtain and to verify. We have a more accurate picture on the current status and future direction of **Iraqi missile programmes** and can identify some sites where current development is taking place. We know the location of facilities formerly associated with Iraq's nuclear, chemical and biological programmes. But we do not know whether current research, production and weaponisation is taking place there or elsewhere. We judge that much of the chemical and biological activity is being conducted in legitimate research institutes or civil production facilities.

21. Direct **military action** against **Iraq's missile infrastructure** could have an **impact on Iraq's permitted missile development**. But it would at best only delay the development of Iraq's longer range missiles. It might also have an impact on its nuclear programme, but would be unlikely to eliminate all nuclear activity which could be taking place elsewhere. The **targetting of suspected chemical or biological facilities would be portrayed as attacks on the civil infrastructure** and would in any case have limited or **no impact on Iraq's ability to produce and weaponise chemical or biological agent.**

An example of direct military action.

The following WMD facilities were targetted in the Desert Fox Campaign of Dec 1998:

- WMD related industrial facilities, including those connected with ballistic missile production and a castor oil plant that could be used to support production of BW;
- airfield facilities housing the L-29 remotely piloted aircraft;
- sites used by regime security organisations also involved in WMD.

Other WMD-related programmes were not targetted.

Impact of Desert Fox:

- Parts of BM programme set back by up to a year;
- castor oil plant damaged, but no known impact on BW capability. No CW facilities attacked;
- damage to aircraft shelters associated with L-29, but no aircraft destroyed;
- disruption to security organisations involved in Iraq's WMD, but those connected with concealment unlikely to have been damaged.

22. In addition to gaps in our intelligence picture, **our ability to constrain Iraqi development of its WMD through other means is limited**. The development of Iraq's WMD has been helped in recent years by **the absence of UN inspectors, the increase in illegal border trade and hard currency available to Iraq.** There have been an increasing number of […] reports on orders for illegal imports of missile related components and materials, […]. Because of the need for raw materials and components from abroad, sanctions remain an obstacle to the development of all Iraq's WMD programmes.