

Loose Minute

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WHAT DOES IRAQ NEED TO DO TO GET THE BOMB QUICKLY?

Ref: JIC(02)059, 15 March 2002

Current JIC position

1. At ref the JIC judges that Iraq does not possess a nuclear weapons capability. Iraq was within three years of producing a weapon when the Gulf War intervened. Its programme was effectively dismantled by the IAEA and then subjected to subsequent monitoring. Although there is very little intelligence, the JIC judges that Iraq is still pursuing a nuclear weapons programme. Intelligence indicates that scientists were recalled to work on a nuclear programme in the autumn of 1998, but it is not known if large scale development work has yet recommenced. Procurement of dual-use items over the last few years could be used in a uranium enrichment programme. But we have no definitive intelligence that such items are intended for a nuclear programme. The JIC concludes that:

- (a) while sanctions remain effective, Iraq cannot indigenously develop and produce nuclear weapons;
- (b) if sanctions were removed or became ineffective, it would take at least five years to produce a nuclear weapon. This timescale would shorten if fissile material was acquired from abroad.

What does Iraq have now?

2. AWE has concluded that up to 1991 the Iraqis had made significant progress in designing a nuclear device. Many aspects of a simple design had been studied, although the high explosives needed to detonate the device had not been fully developed. More sophisticated concepts were being considered to produce a smaller and lighter device, capable of missile delivery, but it is unlikely that much progress had been made. From this work Iraq will have retained **documents, drawings and expertise.**

3. By 1991 Iraq still needed to complete aspects of its design and, in particular, to validate the high explosives system. It is unlikely that much of this would have been done before IAEA inspectors left in December 1998 for fear of detection. However if all the key scientists had been recalled in 1998, they could have reconstituted the programme and **further developed warhead designs** since then. This would not necessarily have been detected by intelligence.

4. Iraq also has some possible **platforms to deliver** a suitable nuclear device outside its frontiers. Its Russian-made jet aircraft (eg MiG 25) could probably be adapted carry a simple nuclear bomb to Israel. Any former SCUD missiles that could be assembled could take a more sophisticated device. However, the remaining 650 km range Al Hussein missiles would not be suitable.

What would Iraq need?

5. Iraq does not have the **fissile material** to make a weapon. To rebuild its uranium enrichment programme would take years and require extensive foreign procurement, which would not be possible with effective sanctions in place. To make a weapon quickly, Iraq would need sufficient High Enriched Uranium (HEU) from the "black market" (eg stolen from Russia). It would be credible though very difficult for Iraq to do this. We have no good evidence of Iraq ever acquiring any such material.

6. Iraq cannot make the crucial **neutron initiator** for the device. Iraq needs a nuclear reactor to make a key material in the original unfinished design: it has not had a operable reactor since 1991. Iraq would need to develop or buy a completely new initiator system. Even if it acquired system from abroad, Iraq would have to develop the theory and practicalities of how to use such a component. Iraq could only do this quickly with outside expertise.

7. Iraq's goal had been to produce a missile warhead. If it had the necessary components and fissile material, Iraq could complete its former simple warhead design for **air delivery** within a year. However a **missile warhead** would require a more sophisticated design concept which would take at least two years longer. These timescales could be shortened only with outside assistance.

Improvised Nuclear Device (IND)?

8. If Iraq could acquire _____ on the "black market" it could assemble a crude nuclear weapon. Such an IND _____ but would be large and unreliable. An IND would have to be delivered by unconventional means (eg a lorry). However, there is no evidence that Iraq has sought such material.

Conclusions

9. (a) Iraq does not have any nuclear weapons.
- (b) Iraq has much of the design technology for a simple nuclear weapon.
- (c) It cannot make the fissile material or a neutron initiator for a weapon.
- (d) To make a nuclear weapon quickly, Iraq would have to acquire fissile material and a weaponised neutron initiator system, together with foreign expert assistance.

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- (e) If Iraq could acquire sufficient [redacted] it could make a crude IND, but would need to use risky unconventional delivery means.

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