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THE DIRECTOR OF CENTRAL INTELLIGENCE
WASHINGTON, D.C. 20505

14 August 2002

MEMORANDUM FOR: The Vice President
The Secretary of State
The Secretary of Defense
Chief of Staff to the President
Assistant to the President for
National Security Affairs
Counsel to the President
Chairman of the Joint Chiefs of Staff

SUBJECT: Regional Strategies

I draw your attention to the attached package of papers prepared at the request of the Deputies. I believe that you will find them of interest.

Once you have read them, you will see that they provide a useful common basis of understanding from which we can move forward in our planning and developing testimony and public statements.

George J. Tenet

Attachment:
As Stated

cc: [redacted] (b)(3) (b)(6)

[redacted] (b)(3) (b)(6)

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Iraq Papers for the Principals Committee
15 August 2002

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Tabs on Key Subjects

(b)(3)

This assessment was prepared by the Offices of Near Eastern, South Asian, and African Analysis. Comments and queries are welcome and may be directed to the [redacted] Issue Manager, NESAF, on [redacted] (b)(3)

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[redacted] [redacted] (b)(3)

Tab A

CENTRAL INTELLIGENCE AGENCY DIRECTORATE OF INTELLIGENCE

[redacted] (b)(3)

1 August 2002

Iraq: Expanding WMD Capabilities Pose Growing Threat [redacted] (b)(3)

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NESAF IA 2002-20113CXH

Iraq: Expanding WMD Capabilities Pose Growing Threat (b)(3)

Summary (U)

Since the end of inspections in 1998, Saddam has maintained the chemical weapons effort, energized the missile program, made a bigger investment in biological weapons, and has begun to try to move forward in the nuclear area. (b)(3)

Experience shows that Saddam produces weapons of mass destruction (WMD) to use, not just to deter. Over the last two decades, his regime came to look on unconventional forces as important instruments of policy and routine components of military operations.

- Distinctions between civilian populations and troops in the field mean little to Saddam when he is intent on preserving or projecting his power.

- Even before the Gulf war, Iraq hid and lied about its WMD capabilities, and despite inspections after the war, Iraq never fully disclosed these capabilities and was able to retain a small force of Scud-type missiles, chemical precursors, biological media, and thousands of munitions suitable for chemical and biological agents. (b)(3)

Iraq's concerted effort to enhance its chemical, biological, nuclear, and missile infrastructure has resulted in a number of gains that increase the capability of these weapons and the number of options to deliver them.

- Iraq has largely rebuilt declared WMD facilities damaged during Desert Fox, expanded its WMD-capable infrastructure—ostensibly for civilian production—and furthered UN-permitted ballistic missile programs that have direct applications to prohibited weapons systems.

- Unmanned aerial vehicles give Baghdad a more lethal means to deliver biological and, less likely chemical, warfare agents.

- Iraq's procurement of nuclear-related equipment and materials indicates it has begun reconstituting its uranium enrichment gas centrifuge program to produce fissile material for a nuclear device, a process that could be completed by late this decade. (b)(3)

Based on information about Iraq's Gulf war-related stockpile, precursor orders, and Iraqi intentions, we conclude that Iraq probably has restocked

its chemical and biological warfare (CBW) agents and upgraded weapons capabilities since the Gulf war by continuing research on and development of agents and agent weaponization, creating a network for procuring dual-use equipment, using small-scale production techniques, and indigenously producing CBW-related equipment. Iraq retains the capability to quickly convert some civilian chemical, pharmaceutical, and pesticide facilities for CBW agent production.

- Iraq probably has rebuilt a covert CW production capability by expanding its chemical industry. It is rebuilding former CW facilities, developing new chemical plants, and trying to procure CW-related items covertly. We judge it has the capability to produce mustard blister agent and the nerve agents sarin, GF, and VX. Iraq's CW agent production capability probably is more limited than it was at the time of the Gulf war.

- We remain concerned about construction, renovation, and expansion activity at dual-use facilities formerly associated with Iraq's BW program. Moreover, Iraq has developed a redundant capability to work on BW agents using mobile production centers, making this capability more difficult to attack. It almost certainly is working to produce the causative agent for anthrax along with botulinum toxin, aflatoxin, and ricin, and it has the capability to produce other biological organisms that we believe it retains, such as the smallpox virus and the causative agent for the plague. (b)(3)

We have little reliable information on Iraq's current CBW stockpile but judge it consists of finished agents, chemical precursors, and feedstock material. We have located several sites probably involved with precursor and CBW storage, as well as some dual-use CBW production sites. The paucity of detailed intelligence, Iraq's denial and deception efforts, and the limitations of remotely monitoring known and suspected sites make it extremely difficult to determine the location of most of Iraq's suspected CBW stockpile and key production facilities. (b)(3)

The operational capability of Iraq's CBW stockpile is limited by the ability to weaponize agents. Baghdad has few effective CBW delivery systems—the most well known systems are long-range ballistic missiles, artillery, multiple rocket launchers, and aircraft—but it has made advances in aerial spray delivery and agent potency.

- Iraq probably retains a small covert force of Scud-variant missiles, mostly the 650-km Al Husayn and possibly the 900-km Al Abbas missiles. (b)(3)

Baghdad has made steady progress in rebuilding its ballistic missile program, which is based on the al-Samoud and the Ababil-100.

- Iraq has conducted numerous flight tests of these two UN-authorized systems and is currently developing an extended-range al-Samoud variant with a range well beyond the UN-authorized 150-km limit.

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(b)(3)

Iraq is advancing both its liquid- and solid-propellant missile programs,

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(b)(3)

Iraq's unmanned aerial vehicle (UAV) program gives it a delivery platform for BW or, less likely, CW that threatens its neighbors and US forces in the region. Iraq until late 2000 had focused on converting the L-29 jet trainer aircraft for autonomous flight, but it is now looking to convert aircraft with greater ranges, payloads, and speeds, and small UAVs that may be more survivable in a threat environment.

- Aircraft—manned or unmanned—equipped with spray systems are probably Iraq's most effective means to disseminate BW agents. (b)(1) (b)(3)

- Baghdad is attempting to procure UAV-related components and topographical and routing software specific to the United States. (b)(3)

We believe Saddam never abandoned his nuclear weapons program. Iraq retains a significant number of nuclear program scientists, program documentation, and probably the manufacturing infrastructure to support a reinvigorated effort. (b)(3)

Iraq is attempting to reconstitute its uranium enrichment gas centrifuge program to produce fissile material for nuclear weapons,

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[redacted] Iraqi front companies have made concerted efforts to purchase high-strength aluminum tubes with dimensions and tolerances best suited for use in uranium enrichment gas centrifuges. (b)(1)

- We assess that Baghdad may be able to produce material for a weapon by late in the decade—or possibly as early as mid-decade if it has established a facility to produce the uranium feed materials needed for an enrichment effort and has taken significant steps to build and outfit a centrifuge facility. Baghdad's successful denial and deception efforts have left us few clear benchmarks with which to assess its progress. [redacted] (b)(3)

The only scenario in which we think Baghdad could have nuclear weapons in as short as a year or less is if it obtains fissile material from abroad. While we have not detected Iraqi efforts to do this, we expect Baghdad to exploit the prospective offers it receives. [redacted] (b)(1) (b)(3)

Scope Note (b)(3)

CIA's Office of Near Eastern, South Asian, and African Analysis, with contributions from the Weapons Intelligence, Non-Proliferation, and Arms Control Center, prepared this assessment to respond to senior policymaker interest in a broad update on the status of Iraq's efforts to develop and acquire weapons of mass destruction (WMD) and delivery systems in the absence of UN inspectors. The Intelligence Community last addressed this issue in a product in late 2000: A National Intelligence Council (NIC) Assessment, *Iraq: Steadily Pursuing WMD Capabilities* (ICA 2000-007HCX), December 2000, discussed Iraq's continued development of its infrastructure to produce WMD and delivery systems and those items unaccounted for after seven years of UN inspections and monitoring. This CIA study establishes a baseline assessment of Iraq's current WMD capabilities and its efforts to enhance or acquire new production capabilities and delivery systems. (b)(3)

This assessment distinguishes between WMD and delivery systems. WMD refers to chemical, biological, and nuclear weapons—agents, nuclear-weapons-usable material, related sub-systems, and components. Delivery systems include but are not limited to missiles, aircraft, rockets, bombs, and artillery. This distinction largely coincides with UN Resolution 687 of 1991, which established UNSCOM and laid out basic disarmament requirements for Iraq.

- Resolution 687 ***prohibits*** possession, use, research, development, and acquisition of all WMD, as well as the construction of support and manufacturing facilities.

- The Resolution ***restricts*** Iraqi delivery systems by barring possession, construction, acquisition, research and development, and use of ballistic missiles with ranges greater than 150 km, as well as related major missile parts and repair and production facilities.

- Although UN Resolutions 661 and 687 bar all states from selling or supplying Iraq with arms and related materiel of ***all types***, Iraq may possess ballistic missiles with ranges of 150 km or less, aircraft—including remotely piloted and unmanned aerial vehicles—bombs, artillery, and rockets. (b)(3)

Iraq: Expanding WMD Capabilities Pose Growing Threat

Iraq has significantly expanded the infrastructure—consisting of research laboratories, production facilities, and procurement networks—that can produce weapons of mass destruction (WMD), However, the dual-use nature of many of its facilities complicates our ability to detect actual WMD production. Iraq has rebuilt most of its former WMD-related facilities damaged during Desert Fox in December 1998 and is furthering UN-permitted programs—such as the al-Samoud and Ababil-100 missiles—that could support prohibited systems. and it is continuing work on unmanned aerial vehicles (UAVs) as potential delivery platforms for biological warfare (BW) or, less likely, chemical warfare (CW) agents. (See Figure 1.)

Chemical Weapons—Capitalizing on Dual-Use Facilities

Iraq already has a CW agent production capability within its chemical industry, and it probably is concealing chemical agents, munitions, precursors, production equipment, and sensitive program information. We have been unable to corroborate claims of large-scale chemical agent production, Baghdad is covertly procuring the types and quantities of chemicals and equipment sufficient to allow limited CW agent production hidden within Iraq's legitimate chemical industry, to include mustard blister agents and the nerve agents sarin, cyclosarin, and VX. In addition, UNSCOM was unable to verify that Iraq had destroyed 1,300 to 3,200 tons of chemical precursors, which could give Iraq the ability to produce more chemical agents. suggests Baghdad is developing a mobile production capability.

Research, Development, and Agent Testing

Iraq probably is focusing its offensive CW research and development on quality control and agent shelf life of VX and other nerve agents, based on where we think Saddam's CW program is headed. It may also be hiding small-scale agent production within legitimate research laboratories,

CW Agent Production

We judge that Iraq is expanding its chemical industry primarily to support CW production because it is rebuilding a dual-use infrastructure that it could quickly divert to CW-related production, By the end of the Gulf war we assess Iraq had produced 700 metric tons of bulk and weaponized CW agents—mainly mustard and G-series nerve agents.

- The Habbaniyah II chlorine and phenol plants, have legitimate civilian applications—such as pesticides and resins—but also can be used to produce CW

This assessment was prepared by the Office of Near Eastern, South Asian, and African Analysis. Comments and queries are welcome and may be directed to the Issue Manager, NESAF, on

precursors. Chlorine-related imports on top of production from Iraq's other chlorine plants exceed the country's need for chlorine, which is used mainly for water treatment. (b)(3)

(b)(1)

- Iraq studied ways to produce industrial chemicals for legitimate purposes while retaining a capability to convert to CW precursor or agent production during times of conflict.

We do not know if Iraq is producing CW precursors or agents at declared sites or if it is concealing production capabilities at other dual-use facilities or warehouses. Some Iraqi facilities, such as Habbaniyah II, are suspect because (b)(3)

(b)(1)

a declared pre-war involvement in the CW program.

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(b)(3)

Iraq can still produce blister agents, but the limited availability of key types and quantities of chemical precursors and the destruction of its known CW production facilities during the Gulf war and the subsequent UN inspections regime probably impede its production of large amounts of G-series nerve agents and VX. Iraq historically only has had rudimentary capabilities to produce VX. We cannot rule out, however, that Iraq has produced CW at a small-scale level or that it has procured chemical precursors.

- Iraq's attempts to procure precursors—often involving efforts to circumvent UN sanctions—indicate Baghdad is not yet self-sufficient in producing chemical agents,

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Stockpiles and Storage Facilities (b)(3)

Iraq probably possesses CW-loaded chemical munitions, possibly including artillery rockets, shells, aerial bombs, and ballistic missile warheads, based on what it had before the Gulf war. It probably also maintains bulk chemical stockpiles, primarily containing precursors, but possibly also mustard or VX. Several sites are suspected of storing CW because (b)(1)

the involvement of tanker trucks during transshipment activities and trucks associated with the CW program prior to 1991 (b)(1)

Virtually any structure, however, could store CW—Iraq during the Gulf war even stored CW in the open— (b)(1)

(b)(1)

(b)(1)
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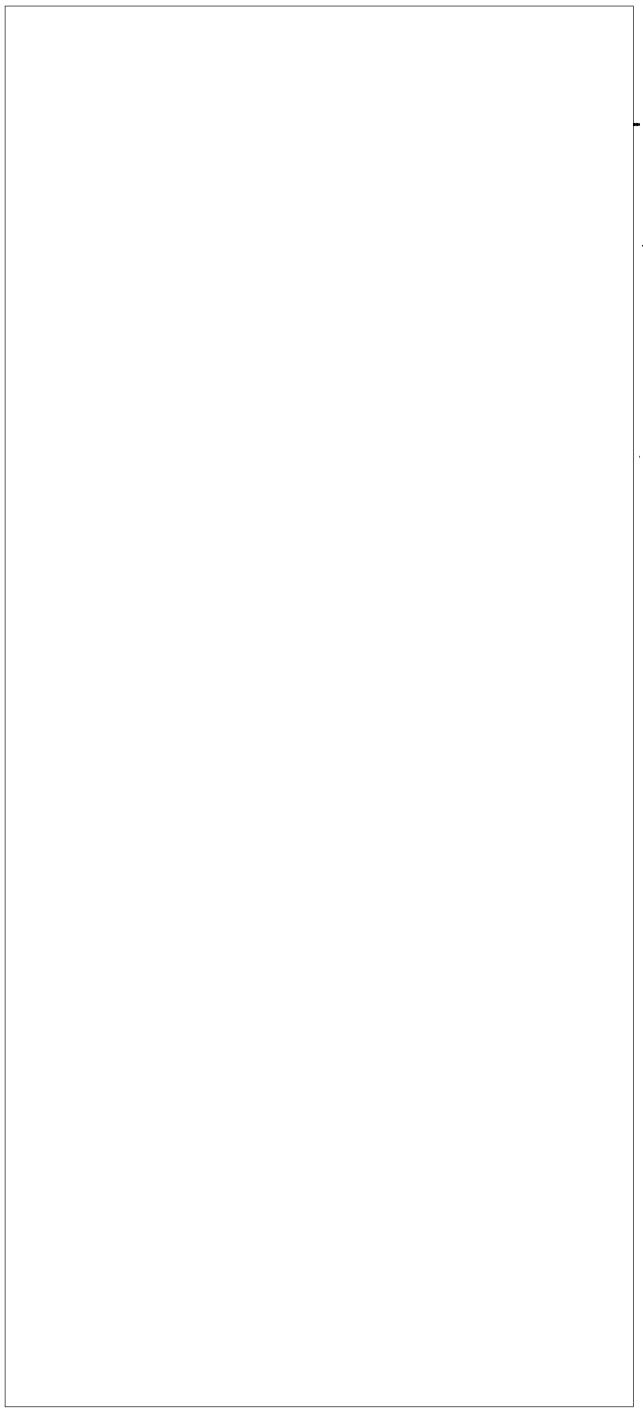

Our information and conclusions about Iraq's CW stockpile have changed little in the past two years. We believe that Iraq has chemical agent and stable intermediaries in bulk storage, production equipment, and filled munitions that are still militarily useful.

Moreover, we assess the size of the CW agent stockpile to be at least 100 tons—an amount sufficient for strategic retaliation, regime defense, or to threaten civilian populations in and outside Iraq. We are uncertain about the extent and condition of Iraq's stockpile, although we believe it mostly consists of mustard agent, the G-agents sarin and cyclosarin, and VX. (b)(3)

UNSCOM has accounted for some of Iraq's filled munitions but not for thousands of empty munitions that Iraq could quickly fill with agent. Iraq also retains the capability to produce many types of weapons that it could fill with chemical agents.

- Iraq provided little verifiable evidence that it unilaterally destroyed 26,500 artillery rockets after the Gulf war. Although Iraq can produce some types of rockets for delivering CW agents, the unaccounted-for Italian and Egyptian rockets and multiple rocket launchers in this category were Baghdad's preferred tactical chemical weapons.

- An Iraqi Air Force document discovered by UNSCOM inspectors in July 1998 suggests that Baghdad overstated by at least 6,000 the number of chemical munitions it used during the Iran-Iraq war. Iraq has refused to hand over the document and has not accounted for these munitions. In addition, UNSCOM could not verify the disposal of 308 R-400 bombs, which Iraq claims it unilaterally destroyed.

- UNSCOM was unable to account for about 550 artillery shells filled with mustard agent. (b)(3)

Prior to the Gulf war, Iraq conducted dozens of field tests of a large variety of bombs, artillery shells, rockets, ballistic missile warheads, submunitions, and spray tanks.

- At the end of the Gulf war, Iraq was testing submunitions—which permit better agent distribution—for bombs and may consider them for ballistic missile warheads in the future.

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- Iraq is likely to continue field-testing CW delivery systems to improve their effectiveness,

Iraq denies that it loaded VX into Al Husayn ballistic missile warheads, despite strong forensic evidence to the contrary. An independent laboratory detected degraded products from VX on metal fragments collected from Al Husayn warheads in 1998.

- We do not know how many VX warheads Iraq had filled and deployed, but test results strongly suggest that Iraq had filled with VX at least three of the 45 warheads it declared it had unilaterally destroyed.

(b)(3)

Doctrine, Training, and CW Defensive Posture

(b)(3)

Our information on Iraqi CW doctrine is based largely on chemical attacks against Iranian forces during Baghdad's war with Tehran in the 1980s. However, just as its CW doctrine changed during the Iran-Iraq war, we expect Iraq continued to fine-tune its doctrine in the years that followed.

- Saddam delegated the authority to use CW to his Corps-level commanders after realizing that his troops could not act fast enough if he maintained release authority. Saddam used couriers to overcome communications difficulties and to avoid detection, affecting the speed at which his orders were carried out.

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WMD defensive training is part of the normal training cycle for the Iraqi military, but Baghdad appears to have accelerated such training.

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(b)(3)

Baghdad since September 2001 has slowly been readying military forces to respond to an attack, including preparing them to fight in a nuclear, biological, or chemical (NBC) environment.

(b)(1)

(b)(1)

- Iraq has aggressively sought atropine auto-injectors—a nerve agent antidote

Iraqi troops could use NBC equipment defensively against a WMD attack or as a preventive measure during an offensive attack. If Iraq used a nonpersistent CW agent such as sarin, its troops would need protection in case the agent blew back on them, and if it used a persistent CW agent, such as VX, Iraqi troops would need defensive equipment to enter the contaminated area.

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Proliferation Behavior

It is difficult to tie Iraq's procurement of CW precursors, technology, and specialized equipment from foreign sources directly to Iraq's CW program, but it is working to set up CW-related clandestine procurement networks.

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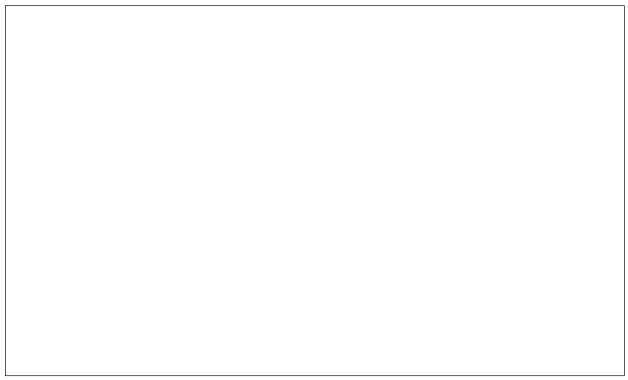

• Iraqi entities also have sought dual-use precursors or production equipment from firms

We do not know the intended use of the materials or whether any have been delivered.

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Biological Weapons—Easiest to Conceal

We are confident that Iraq is researching, producing, testing, and weaponizing BW agents, but we do not have specific information on the types of weapons, agent, or stockpiles available. Baghdad is attempting to increase the antibiotic resistance and virulence of bacterial agents, to produce large quantities of agent covertly, and to develop delivery systems capable of spreading BW agent over a wide area

(b)(1)

• In addition to the threat posed by BW agents covertly deployed against US troops and interests in the Middle East or elsewhere, Iraq could also use missiles, rockets, artillery, UAVs or manned aircraft carrying spray tanks or aerial bombs to transport and disperse BW.

• Iraq declared that prior to the Gulf war it conducted BW agent testing and weaponization using missile warheads, aerial bombs, rockets, spray tanks, and artillery shells, all of which Baghdad could still use to deliver BW.

(b)(3)

Baghdad probably is producing the causative agent of anthrax, as well as botulinum toxin, ricin, and aflatoxin—all declared to UNSCOM as part of Iraq's former BW program. However, Iraq probably retains 20 to 25 other biological organisms—such as the causative agent of plague and the smallpox virus—that are suitable as biological weapons.

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(b)(1)

• Iraqi scientists were secretly working at the Microbiology Department of Saddam College of Medicine to make plague and anthrax more resistant to antibiotics and environmental factors,

(b)(1)
(b)(3)

Stockpiles and Storage

(b)(3)

After over four years of claiming it had conducted only "defensive research" on biological weapons, Iraq in 1995 admitted that it had produced about 30,000 liters of concentrated BW agents such as anthrax, botulinum toxin, aflatoxin, and ricin. We are not certain how much biological agent the Iraqis actually produced, and UNSCOM estimates that Iraqi production of anthrax spores and botulinum toxin could have been two to four times higher than claimed.

• Although the nature and amounts of Iraq's stored BW material remains unresolved by UNSCOM accounting, in practical terms it has been overshadowed by what can be produced by the growing transportable production program, which may already have used up all of Iraq's previously procured growth media.

• Iraq's capability to build equipment and to procure other necessary materials covertly, such as growth media, make large-scale BW agent production easily attainable.

(b)(3)

Iraq has never explained serious discrepancies between the amount of BW growth media it procured

before 1991 and the amount of finished agent it declared—or could have made using the media—leading UN experts to believe that Iraq produced substantially greater amounts of biological agents (b)(1) (b)(3)

We believe Iraq retains an offensive BW capability, but we do not know the size or condition of the arsenal.

- Iraq claims it filled 157 R-400 aerial bombs with BW agent and later destroyed them, but its accounting of these bombs from construction through destruction remains problematic. UNSCOM cannot verify that the 157 bombs Iraq destroyed were those filled with BW agent.

- Iraq claims that it produced four aerosol spray tanks by modifying a Mirage F-1 fuel drop tank. There is no evidence that the Iraqis destroyed these tanks, and they may have produced others. Such tanks are well suited for dispersing BW agent, and the technology would be critical in developing similar tanks for the UAV program. (b)(1)

- Iraq's "Full, Final, and Complete Declaration" admits the production in 1988 of aerosol generators, another critical component of BW agent aerial dissemination. UNSCOM interviewed Iraqis who acknowledged they produced six aerosol generators—named the Zubaidy device—and admitted they were for BW dissemination. (b)(1)

UNSCOM also uncovered evidence of a parallel effort to develop a more sophisticated aerosol generator but Iraq refused to provide additional information.

- UNSCOM's final report from January 1999 indicates that about 20 mobile double-jacketed storage tanks remain unaccounted for. These could produce, store, or transport BW agents. (b)(3)

Using Transportable Production Facilities (b)(3)

Iraq is pursuing mobile BW production options, in part to protect its BW capability from detection. (b)(1) Baghdad has transportable facilities for producing BW agents and may have other mobile units for researching and filling them into munitions or containers, These plants provide a redundant, mobile, large-scale, and easily concealed BW production capability that probably surpasses that of the pre-Gulf war era.

- Iraq in 1999 had seven transportable BW agent production units, according to an Iraqi defector deemed credible by the Intelligence Community. (b)(1)

- Seven mobile BW plants were built under the cover of the "Grain Purification Project," according to the source. One mobile production plant comprises two railroad cars and the other six plants consist of three truck trailers each. The source reported that one of the truck mobile plants was producing BW agent as early as 1997. Following difficulties in operating the original truck production plants, designs for a more concealable and efficient two-trailer system were completed in May 1998, possibly increasing the overall number of truck production plants.

- In mid-1996 Iraq decided to establish mobile laboratories to research BW agents in order to evade UNSCOM inspections (b)(1)

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- The transportable production units, were to produce five different BW agents, assessed to be bacterial agents or toxins. Two of the five agents probably are anthrax and botulinum toxin.

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(b)(3)

Other Dual-Use Facilities Available

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Baghdad also can produce and research BW agents at fixed dual-use facilities.

- Since 1999, the Amiriyah Serum and Vaccine Institute has expanded its cold storage capacity imagery has revealed increased levels of activity. This facility has research, testing, and production capabilities, and reportedly was the site where Iraqi scientists conducted quality testing on BW agents produced on the transportable production units,

(b)(1)

- Iraq is operating a castor oil plant—completed in early 2000—at Habbaniyah. Castor oil has civilian applications, but the bean pulp byproduct easily could be used to make the BW agent ricin.

- the Dawrah Foot and Mouth Disease Vaccine facility

(b)(1)

(b)(1)

this facility produced botulinum toxin and probably anthrax. UNSCOM inspectors reported that the facility was one of two in the country capable of containing highly pathogenic biological organisms. The inspectors disabled the facility's air-handling system by pouring concrete and foam into it and removed and destroyed the equipment associated with botulinum toxin production but left other research and production equipment in place.

(b)(1)

R&D and Procurement Continue

(b)(3)

Iraq in attempting to improve its BW agent research and development capability. UNSCOM assessed in 1999 that R&D in support of Iraq's offensive BW program was continuing at several different universities. Without UN inspectors, Iraq probably has intensified and expanded these efforts.

(b)(1)

- Iraqi scientists have been working secretly at the Microbiology Department of Saddam College of Medicine to develop new BW agents and to increase the resistance of other agents to antibiotics and environmental factors,

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(b)(3)

(b)(1)
(b)(3)

Iraq continues to seek laboratory research equipment, auxiliary production equipment, and materiel from abroad through piecemeal acquisition and intermediaries, making detection and tracking difficult.

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(b)(3)

We assess that Iraq also maintains a capability to manufacture some BW-related equipment indigenously.

- UNSCOM inspected the State Establishment for Heavy Engineering and the Al Numan Factory and credited them with the capability to manufacture equipment for BW agent production such as fermentors, fermentor components, and holding tanks for biological agent or culture media.

- The Al Zawra'a Electronics Factory and the Salah al-Din State Establishment may provide Baghdad with the capability to manufacture electronic control units associated with bioprocessing equipment such as fermentors. (b)(3)

Baghdad maintains a robust network of intermediary firms in and elsewhere that assist with procurement of dual-use and support equipment for Iraq's offensive BW program. Since the embargo was imposed in 1990, this network of front companies appears to have circumvented import controls through denial and deception techniques, exploitation of UN humanitarian exemptions, or emphasizing the civilian applications of dual-use technology. (b)(1) (b)(3)

Delivery Systems—Iraq Increasing Its Options (b)(3)

Iraq since late 2000 has rebuilt and continues to expand many facilities damaged during Operations Desert Storm and Desert Fox, providing the infrastructure necessary to develop ballistic missiles with ranges equal to or greater than its pre-Gulf war systems. Baghdad is in the process of fielding its UN-authorized liquid- and solid-propellant short-range ballistic missiles (SRBMs), the al-Samoud and the Ababil-100, which we assess have the capability to exceed the UN-imposed 150-km range limitation. Iraq is now developing longer-range systems like the extended-range al-Samoud variant and longer-range liquid- and solid-propellant ballistic missiles. With substantial foreign assistance, Baghdad could flight-test a medium-range ballistic missile (MRBM)—liquid- or solid-propellant—by 2006. This timeline presumes Baghdad is willing to risk detection of developmental steps, such as static engine testing, by 2004. (b)(3)

Significant discrepancies in accounting and Iraq's domestic production capabilities suggest that Iraq retains a small force of Scud-variant missiles. In addition to two missing Scud-B SRBMs, Iraq's hidden Scud-variant force could contain at least seven Iraqi-produced missiles, based on UNSCOM accounting. The UN holds that Iraq's accounting of its unilateral destruction of these missiles is seriously flawed. We assess that Iraq has retained a small

(b)(3)

Scud-variant force with some level of operational readiness, that may consist of up to a few dozen SRBMs, probably the al-Husayn 650-km SRBM and possibly the al-Abbas 900-km SRBMs.

We are concerned about other discrepancies as well:

- Iraq has not accounted for more than 500 metric tons of liquid Scud missile propellant (TM-185), which Baghdad claims—without evidence—it destroyed. This propellant is used exclusively for Scuds.

- Iraq produced 120 of its own Scud-type warheads. Twenty-five of these were used as "special" warheads and filled with CW or BW. Iraq claims it unilaterally destroyed the remaining 95 conventional warheads, but it has failed to account for 50 of them. UN excavations at Iraqi burial sites have uncovered no sign of the 50 warheads.

- Iraq has not accounted for a large number of sophisticated Scud missile components—including combustion chamber/nozzle assemblies—that it claims it destroyed in 1991. Iraq presented to UNSCOM a large number of metal ingots it claimed were made from destroyed, melted components.

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(b)(3)

Solid-Propellant Ballistic Missile Program

Iraq's UN-authorized solid-propellant Ababil-100 SRBM program has advanced rapidly since 1998,

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The Ababil-100 in late 1998 was in the early stages of development, and Iraq began flight-testing the system in late 2000.

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(b)(1)
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The Gulf war and UN inspections destroyed the solid-propellant infrastructure required to build motors for the Badr-2000, a pre-Gulf war development program for a two-stage SRBM with a 750 to 1,000-km range. Most of this infrastructure has now been rebuilt,

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(b)(1)
(b)(3)

Iraq in 2000 was developing large-diameter motor cases for a longer-range solid-propellant SRBM, or

possibly MRBM. We do not know how far the program has progressed, but recent solid-propellant infrastructure improvements—including mixer buildings and a casting plant suitable for larger diameter motors—suggest Baghdad will be able to move forward with this system.

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(b)(3)

(b)(3)

Liquid Propellant Ballistic Missile Program

Iraq in January 2002 began to field its UN-authorized al-Samoud liquid-propellant SRBM

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The al-Samoud is a hybrid of Scud-B SRBM and SA-2 surface-to-air missile technology, capable of flying 180 km downrange, based on Iraqi designs provided to UN inspectors

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(b)(3)

(b)(1)
(b)(3)

- Iraq is nearing completion of a liquid-propellant engine test stand that probably will be capable of testing engines more powerful than the Scud engine.

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(b)(3)

(b)(1)

(b)(1)
(b)(3)

A variety of intelligence strongly suggests that the L-29 is intended as a biological agent delivery platform.

- The Iraqi organization managing the L-29 program also is heavily involved in aerial spray systems technologies easily applied to BW dissemination.
- The L-29's limited payload capability and the system's poor accuracy make it more suited for BW rather than CW delivery.

(b)(1)
(b)(3)

The UAV Threat

We assess that Baghdad continues to develop unmanned aerial vehicles (UAVs)[1]—including the L-29 jet trainer aircraft—as delivery platforms for BW, and less likely CW, agents, which would threaten Iraq's neighbors and US forces in the Persian Gulf.

(b)(3)

(b)(1)

We believe Baghdad is attempting to convert aircraft with greater payloads, ranges, and speeds into remotely piloted vehicles (RPVs).

- The L-29 is a 1960s vintage Czech-made jet trainer aircraft with an operational range between 546 and 746 km. Iraq acquired 90 of them in the 1980s, all of which were subsequently retired.

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1 A UAV operates autonomously using an autopilot. A remotely piloted vehicle (RPV) is operated by ground controllers using a remote control unit. Since 1995, the L-29 has operated mainly as an RPV,

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(b)(1)
(b)(3)

Although much less sophisticated and more vulnerable than ballistic missiles, aircraft such as the L-29 and the L-39 are far more effective BW delivery platforms. A manned or unmanned aircraft armed with CBW spray tanks launched from southern Iraq would pose a serious threat to Kuwait, Saudi Arabia, and other areas of the northern Persian Gulf. Maintaining a non-threatening flight profile, avoiding air defenses, and operating at night in cooler temperatures, these aircraft could disperse a line source of BW agent upwind of its intended target, leaving a large wind-borne plume in its wake.

(b)(3)

Another concern is Iraq's current development and flight-testing of small- to medium-sized UAVs and its recent procurement of significant amounts of UAV-related equipment. Although armed with smaller payloads, smaller UAVs' would be more difficult to detect and shoot down than manned aircraft and could pose a greater danger to US forces and allies in the region.

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An Iraqi UAV procurement network is attempting to procure commercially available route planning software and an associated topographic database that will provide coverage of the "50 states"—referring to the United States—an effort that would provide precise guidance, tracking, and targeting in the United States for the small UAV.

Nuclear Weapons—Ramping Up Procurement Efforts

(b)(3)

(b)(1)
(b)(3)

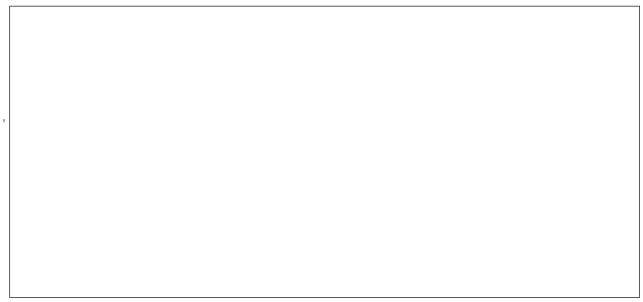
Iraq's persistent interest in high-strength aluminum tubes indicates Baghdad has renewed an indigenous centrifuge uranium enrichment program. Iraq's efforts to acquire these tubes, combined with the other more tenuous indicators noted below, suggest that Baghdad may be able to produce the fissile material needed for a nuclear weapon by late this decade. Iraq would need approximately 6,000 to 10,000 centrifuges of the type that use these tubes as

(b)(1)

(b)(3)

rotors to produce enough highly enriched uranium (HEU) for one nuclear weapon per year.

(b)(1)



- Use of aluminum in a centrifuge effort would be a major step back from the specialty steel machines Iraq was poised to mass-produce at the onset of the Gulf war—perhaps indicating the loss of key personnel and manufacturing capabilities. Iraq has been willing to use inefficient and outdated enrichment technologies before, such as in its prewar Electromagnetic Isotope Separation effort. Baghdad could probably build these small centrifuges without foreign assistance.

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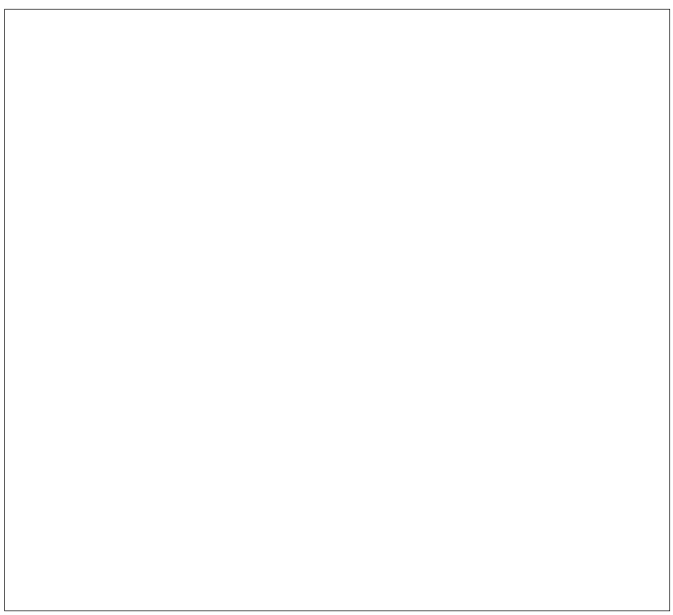

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Iraq would be able to shorten fissile material production to mid-decade if it had somehow accomplished significant work on fissile material production during the years of intrusive inspections. To get nuclear weapons by mid-decade, Iraq would have to establish a host of support facilities such as those used for uranium conversion and feed production, metal production, and weapons component manufacturing and testing.

- Foreign-supplied uranium still in Iraq could help shorten the time Baghdad needs to produce nuclear weapons. Iraq retains approximately two-and-a-half tons of 2.5 percent enriched uranium oxide, which the IAEA permits. This low-enriched material, if converted to uranium hexafluoride (UF_6) and fully utilized, could produce enough HEU for about two nuclear weapons. The use of enriched feed material would also cut the initial number of centrifuges that Baghdad would need by about half. Iraq could divert this material—the IAEA inspects it only once a year—and enrich it to weapons grade before a subsequent inspection discovered it was missing. The IAEA last inspected this material in late January 2002. (b)(3)

(b)(3)

Why The Aluminum Tubes are Destined for Centrifuges

CIA believes that the high-strength aluminum tubes Iraq is seeking are destined for its gas centrifuge program. We base this assessment on analysis of a body of intelligence reporting that describes the materials involved, the exceedingly stringent tolerances, high cost, and the secrecy surrounding the procurement attempts. We believe Baghdad will depend on these tubes to restart work on uranium enrichment for a nuclear weapons program.

(b)(3)

Although we have considered alternative explanations for the tubes—such as their use in multiple rocket launchers (MRLs)—CIA concurs with ground forces weapons experts in the Intelligence Community that such an explanation is inconsistent with the overall body of intelligence on the subject.

- Experts at National Ground Intelligence Center (NGIC) indicate that the materials, surface finish, and other tolerances far exceed those required for MRLs.

(b)(1)

- While the IAEA is not convinced that these tubes are destined for this purpose. The IAEA reached this conclusion, however, without the benefit of all of the information currently available to the IC and classified US centrifuge experience.

(b)(3)

Illicit acquisition of weapons-grade fissile material from a foreign supplier could shorten the time Baghdad would need to produce a nuclear weapon.

(b)(1)

- Iraq's nuclear weapons design work had progressed sufficiently at the time of the Gulf war that it could probably use either HEU or plutonium in a crude implosion device.

(b)(3)

The UN and the IAEA have assessed that Iraq is currently incapable of producing fissile material in sufficient quantities to produce nuclear weapons and that there are no critical outstanding disarmament issues. However, the IAEA has concluded that Iraq continues to withhold significant information about enrichment techniques, foreign procurement, weapons design, and the role of Iraq's security and intelligence services in obtaining external assistance and coordinating post-war concealment.

- Iraq continues to withhold documentation on the technical achievements of its nuclear program, experimentation data, and accounting.

- Baghdad has not fully explained the interaction between its nuclear program and its ballistic missile program.

- Iraq has not provided the IAEA with documentary evidence of a political decision to end, cease, or discontinue the nuclear weapons program. Iraq is obligated to enact penal laws prohibiting nuclear-related activities banned by the IAEA and UN Security Council.

(b)(3)

Other gaps in our understanding of Iraq's nuclear program include:

- Iraq's declaration prior to the Gulf war of a UF_6 production capability, which is inconsistent with it being poised to begin mass-producing uranium enrichment gas centrifuges. Iraq claimed to have been able to produce only kilogram quantities of UF_6 in the laboratory, yet it was moving to produce thousands of centrifuges, which would have required larger amounts of UF_6 feedstock.

- The extent of Iraq's post-Gulf war procurement activities.

- Recent technical achievements, activities of key scientists, and the existence of new facilities.

- How much, if any, outside assistance Iraq is receiving.

(b)(3)

Key Assumptions for Nuclear Timeline

(b)(3)

Our current estimate that Iraq could develop nuclear weapons by late in the decade is based, in part, on recently acquired information obtained from defectors, seized documents, and intrusive inspections about the overall capabilities and progress Baghdad made in its prewar nuclear weapons program. This information paints a fairly clear and consistent picture of the overall capabilities and accomplishments of that program. (b)(3)

From the end of the Gulf war until intrusive inspections were halted in November 1998, we enjoyed significant access into Iraq and witnessed further exposure and dismantlement of its nuclear weapons program. (b)(1) (b)(3)

During this period, we doubt that Iraq would have been able to use much of its prewar nuclear infrastructure to pursue any significant weapons efforts, as these facilities either had been bombed or were subject to frequent inspections. Therefore, we believe Saddam would have located any resumed weapons work at other facilities where there would have been a lower probability of detection. (b)(1)

- for several years many of Iraq's nuclear weapons scientists and engineers were kept employed on civilian or other non-nuclear projects. We assess these activities helped to preserve the competence of the nuclear cadre while exposing them to other technologies that would improve their overall skills. (b)(3)

Saddam's Actions and Intentions Constitute a Growing Threat (b)(3)

Since the end of inspections in 1998, Saddam has maintained the CW effort, energized the missile program, made a bigger investment in BW, and has begun to try to move forward in the nuclear area. (b)(3)

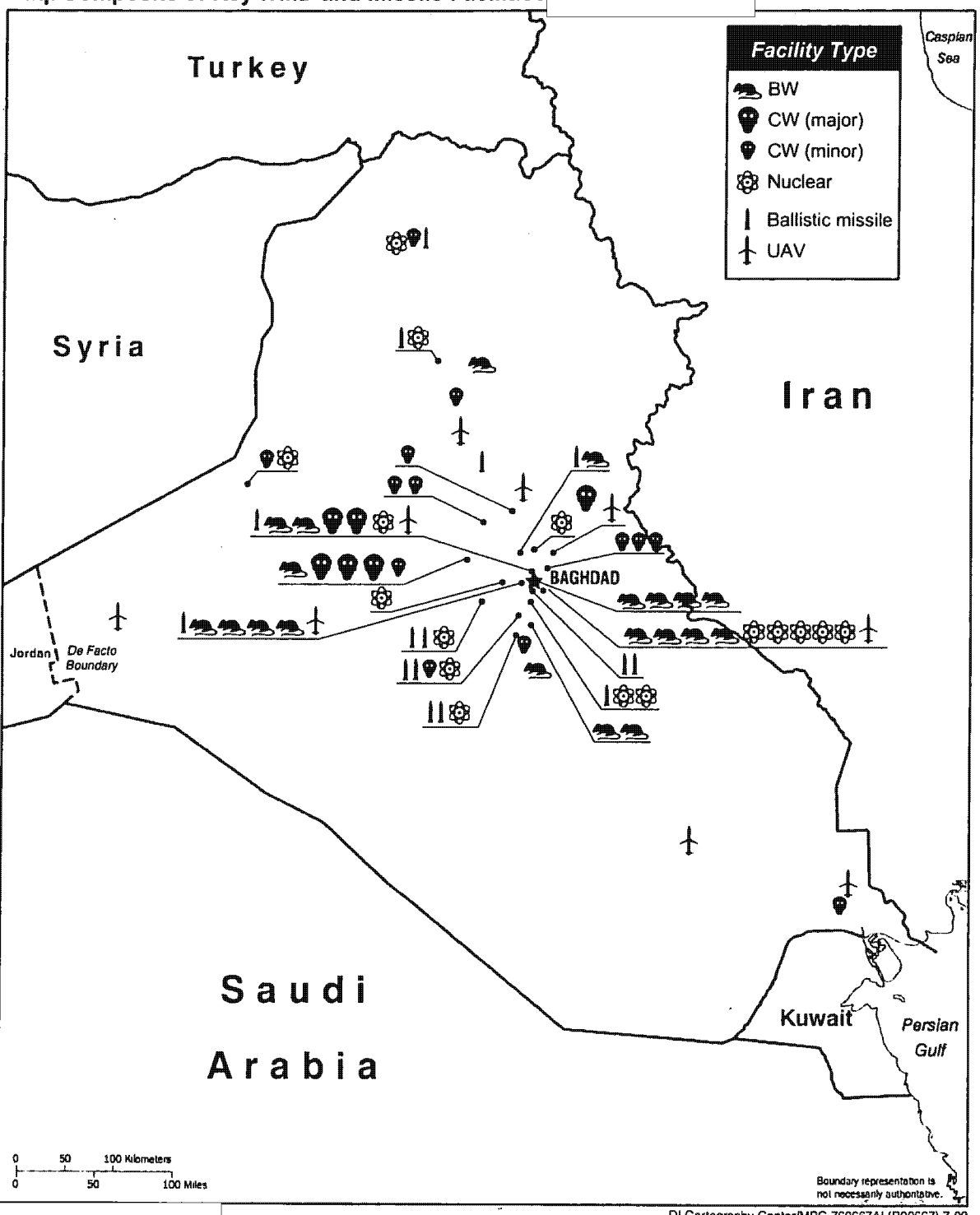
Experience shows that Saddam produces WMD to use, not just to deter. Over the last decade, the Gulf war, and Iraq's war with Iran, his regime came to look on unconventional forces as important instruments of policy and routine components of military operations.

- Distinctions between civilian populations and troops in the field mean little to Saddam when he is intent on preserving or projecting his power.

- Even before the Gulf war, Iraq hid and lied about its WMD capabilities, and despite inspections after the war, Iraq never fully disclosed these capabilities and was able to retain a small force of Scud-type missiles, chemical precursors, biological media, and thousands of munitions suitable for chemical and biological agents. (b)(3)

(b)(3)

Iraq: Composite of Key WMD and Missile Facilities



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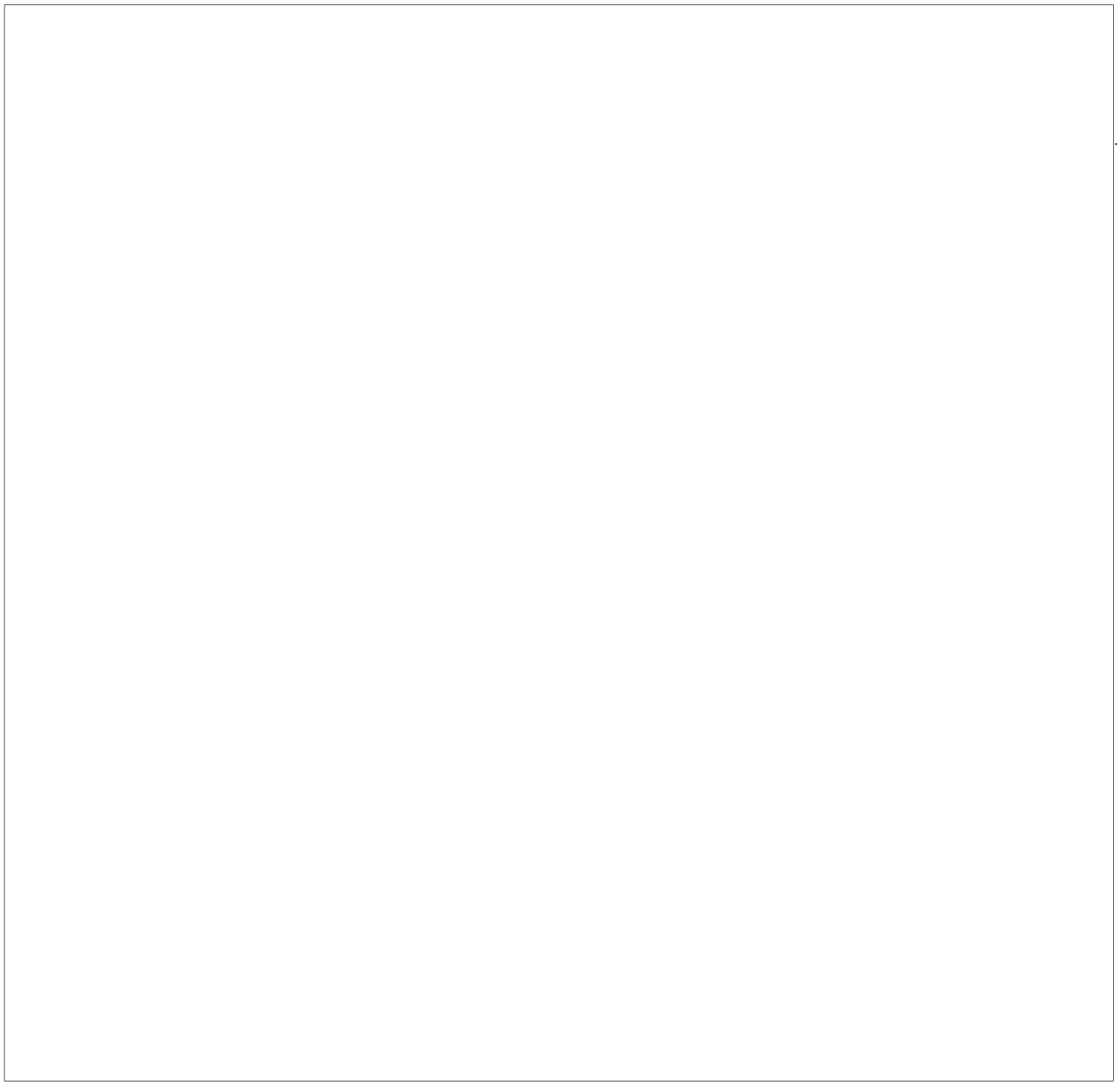

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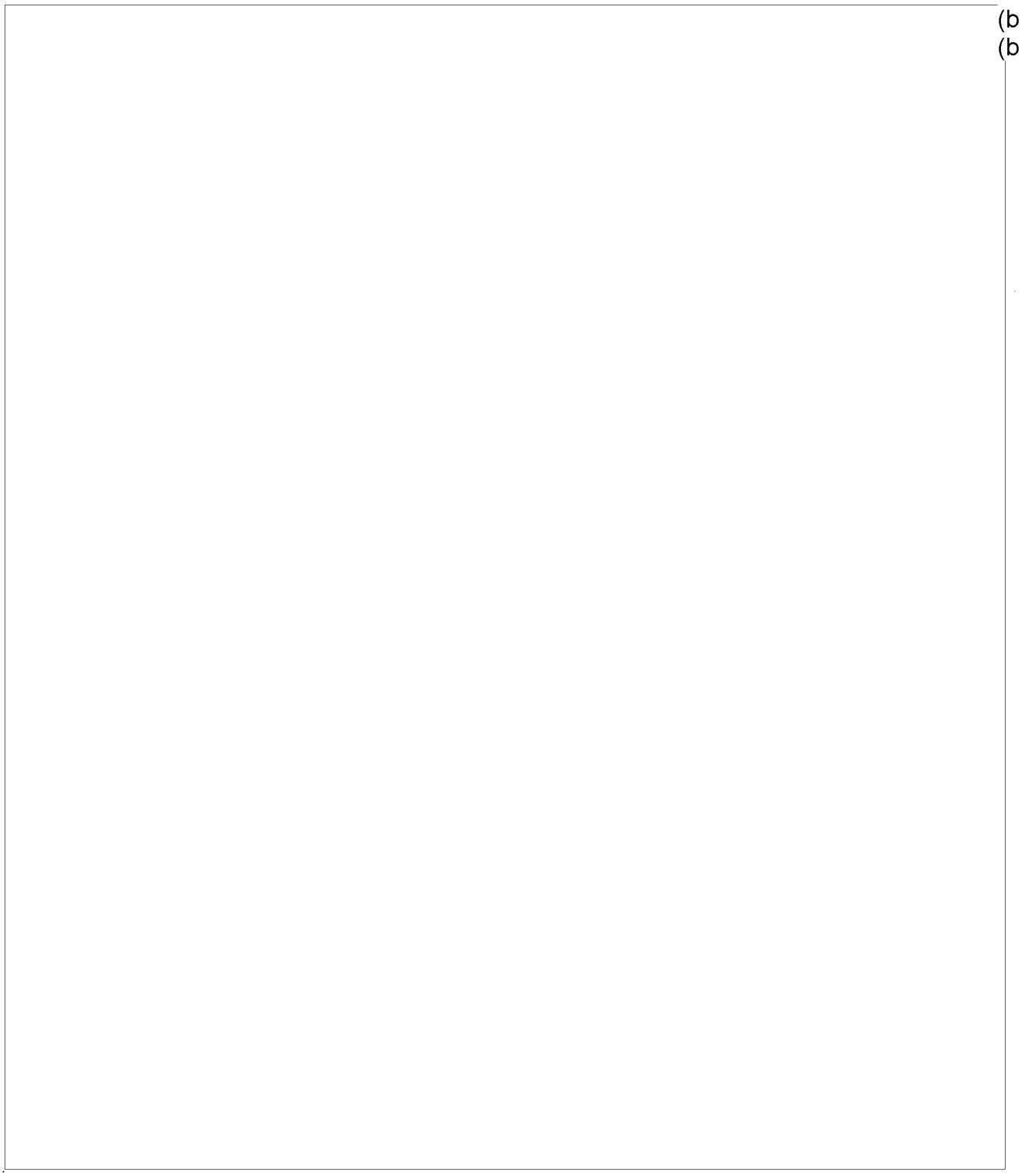

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Figure 6
Iraq's Ballistic Missile Force

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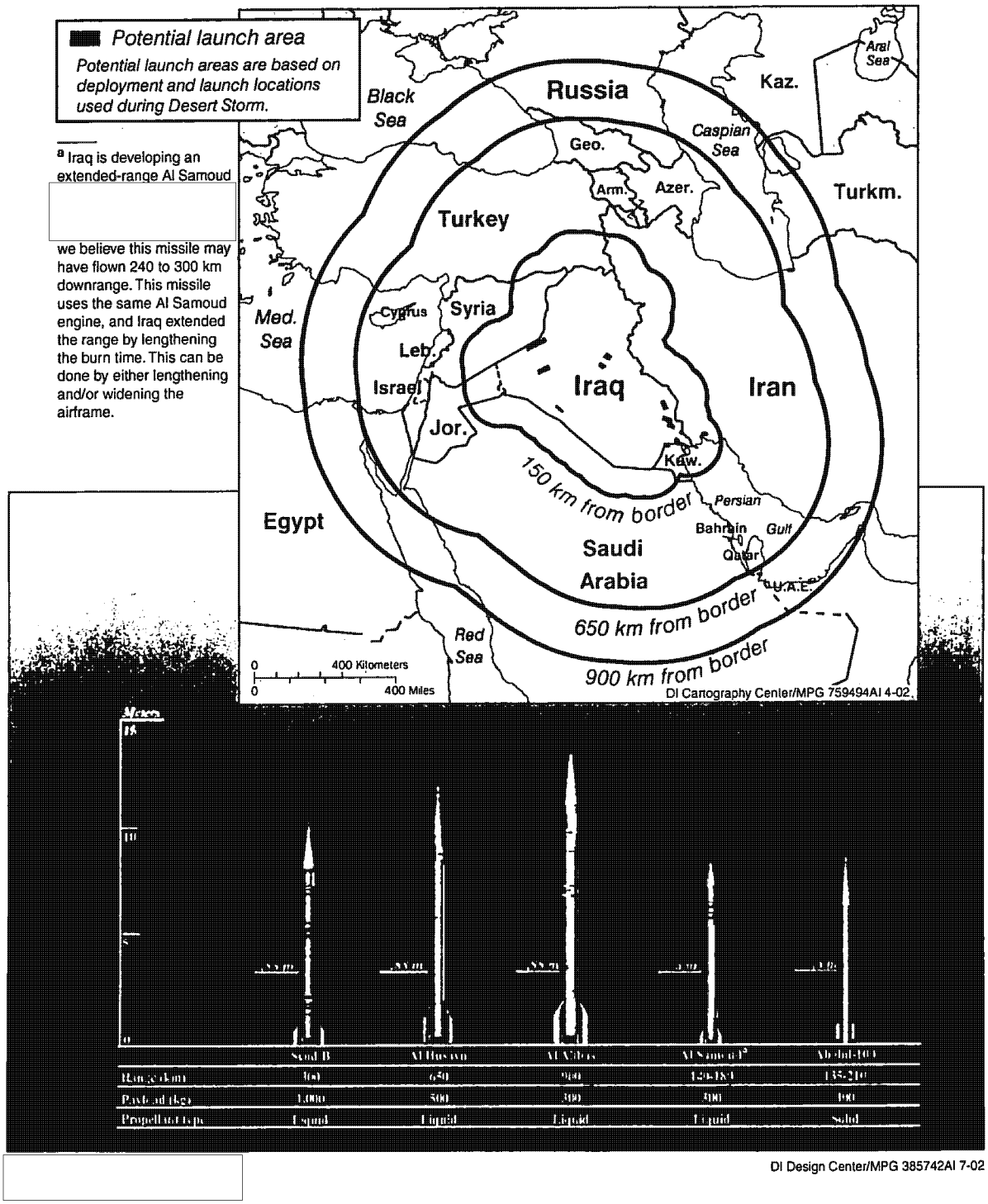

[a] Iraq is developing an extended-range Al Samoud

we believe this missile may have flown 240 to 300 km downrange. This missile uses the same Al Samoud engine, and Iraq extended the range by lengthening the burn time. This can be done by either lengthening and/or widening the airframe.

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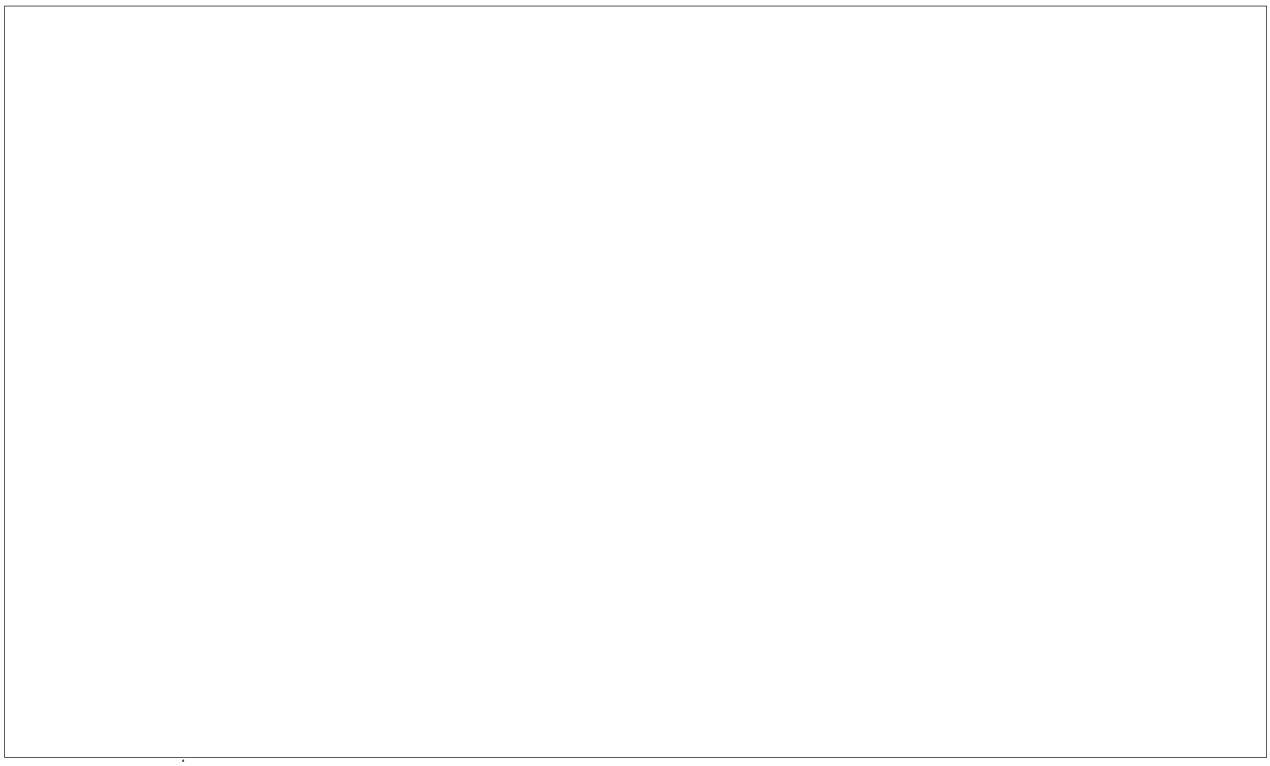

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Tab B

Iraq's Weapons of Mass Destruction Programs

July 2002

Iraq's Weapons of Mass Destruction Programs

In April 1991, the UN Security Council enacted Resolution 687 requiring Iraq to declare, destroy, or render harmless its weapons of mass destruction (WMD) arsenal and production infrastructure under UN or International Atomic Energy Agency (IAEA) supervision. UN Security Council Resolution (UNSCR) 687 also demanded that Iraq forgo the future development or acquisition of WMD.

Baghdad's determination to hold onto a sizeable remnant of its arsenal, agents, equipment, and expertise has led to years of dissembling and obstruction of UN inspections. Elite Iraqi security services orchestrated an extensive concealment and deception campaign to hide incriminating documents and material that precluded resolution of key issues in each WMD category: Iraq's missile, chemical warfare (CW), biological warfare (BW), and nuclear programs.

- Iraqi obstructions prompted the Security Council to pass several subsequent resolutions demanding that Baghdad comply with its obligations to cooperate with the inspection process and to provide United Nations Special Commission (UNSCOM) and IAEA officials immediate and unrestricted access to any site they wished to inspect.

- While outwardly maintaining the facade of cooperation, Iraqi officials frequently denied access to facilities, personnel, and documents in an effort to conceal critical information about their WMD programs.

Successive Iraqi declarations on Baghdad's pre-Gulf war WMD programs gradually became more accurate between 1991 and 1998 but only because of sustained pressure from UN sanctions, coalition military force, and vigorous and robust inspections facilitated by information from cooperative countries. Nevertheless, **Iraq never has fully accounted for major gaps and inconsistencies in its declarations and has provided no credible proof that it has completely destroyed its weapons stockpiles and production infrastructure.**

- Despite the destruction of most of its prohibited ballistic missiles and some Gulf war-era chemical and biological munitions, Iraq probably still has a small force of Scud-variant missiles, chemical precursors, biological seed stock, and thousands of munitions suitable for chemical and biological agents.

- Iraq has managed to preserve and in some cases even enhance the infrastructure and expertise necessary for WMD production and has used that capability to maintain a stockpile and possibly to increase its size and sophistication.

Since December 1998, Baghdad has refused to allow United Nations inspectors into Iraq as required by the Security Council resolutions. Technical monitoring systems installed by the UN at known and suspected WMD and missile facilities in Iraq no longer operate.

UN Security Council Resolutions and Provisions for Inspections and Monitoring: Theory and Practice

Resolution Requirement	Reality
Res. 687 (3 April 1991) Requires Iraq to declare, destroy, remove, or render harmless under UN or IAEA supervision and not to use, develop, construct, or acquire all chemical and biological weapons, all ballistic missiles with ranges greater than 150 km, and all nuclear weapons-usable material, including related material, equipment, and facilities. The resolution also formed the Special Commission and authorized the IAEA to carry out immediate on-site inspections of WMD-related facilities based on Iraq's declarations and UNSCOM's designation of any additional locations.	Baghdad refused to declare all parts of each WMD program, submitted several declarations as part of its aggressive efforts to deny and deceive inspectors, and ensured that certain elements of the program would remain concealed. The prohibition against developing delivery platforms with ranges greater than 150 km allowed Baghdad to research and develop shorter-range systems with applications for longer-range systems and did not affect Iraqi efforts to convert full-size aircraft into unmanned aerial vehicles as potential WMD delivery systems with ranges far beyond 150 km.
Res. 707 (15 August 1991) Requires Iraq to allow UN and IAEA inspectors immediate and unrestricted access to any site they wish to inspect. Demands Iraq provide full, final, and complete disclosure of all aspects of its WMD programs; cease immediately any attempt to conceal, move, or destroy WMD-related material or equipment; allow UNSCOM and IAEA teams to use fixed-wing and helicopter flights throughout Iraq; and respond fully, completely, and promptly to any Special Commission questions or requests.	Baghdad in 1996 negotiated with UNSCOM Executive Chairman Ekeus modalities that it used to delay inspections, to restrict to four the number of inspectors allowed into any site Baghdad declared as "sensitive," and to prohibit them altogether from sites regarded as sovereign. These modalities gave Iraq leverage over individual inspections. Iraq eventually allowed larger numbers of inspectors into such sites but only after lengthy negotiations at each site.
Res. 715 (11 October 1991) Requires Iraq to submit to UNSCOM and IAEA long-term monitoring of Iraqi WMD programs; and approved detailed plans called for in UNSCRs 687 and 707 for long-term monitoring.	Iraq generally accommodated UN monitors at declared sites but occasionally obstructed access and manipulated monitoring cameras. UNSCOM and IAEA monitoring of Iraq's WMD programs does not have a specified end date under current UN resolutions.
Res. 1051 (27 March 1996) Established the Iraqi export/import monitoring system, requiring UN members to provide IAEA and UNSCOM with information on materials exported to Iraq that may be applicable to WMD production, and requiring Iraq to report imports of all dual-use items.	Iraq is negotiating contracts for procuring—outside of UN controls—dual-use items with WMD applications. The UN lacks the staff needed to conduct thorough inspections of goods at Iraq's borders and to monitor imports inside Iraq.
Res. 1060 (12 June 1996) and Resolutions 1115, 1134, 1137, 1154, 1194, and 1205: Demand Iraq cooperate with UNSCOM and allow inspection teams immediate, unconditional, and unrestricted access to facilities for inspection and access to Iraqi officials for interviews. UNSCR 1137 condemns Baghdad's refusal to allow entry to Iraq to UNSCOM officials on the grounds of their nationality and its threats to the safety of UN reconnaissance aircraft.	Baghdad consistently sought to impede and limit UNSCOM's mission in Iraq by blocking access to numerous facilities throughout the inspection process, often sanitizing sites before the arrival of inspectors and routinely attempting to deny inspectors access to requested sites and individuals. At times, Baghdad would promise compliance to avoid consequences, only to renege later.
Res. 1154 (2 March 1998) Demands Iraq comply with UNSCOM and IAEA inspections and endorses the Secretary General's memorandum of understanding with Iraq, providing for "severest consequences" if Iraq fails to comply. **Res. 1194 (9 September 1998)** Condemns Iraq's decision to suspend cooperation with UNSCOM and the IAEA. **Res. 1205 (5 November 1998)** Condemns Iraq's decision to cease cooperation with UNSCOM.	UNSCOM could not exercise its mandate without Iraqi compliance. Baghdad refused to work with UNSCOM and instead negotiated with the Secretary General, whom it believed would be more sympathetic to Iraq's needs.
Res. 1284 (17 December 1999) Established the United Nations Monitoring, Verification, and Inspection Commission (UNMOVIC), replacing UNSCOM; and decides Iraq shall allow UNMOVIC teams immediate, unconditional, and unrestricted access to any and all aspects of Iraq's WMD program.	Iraq repeatedly has rejected the return of UN arms inspectors and claims that it has satisfied all UN resolutions relevant to disarmament. Compared with UNSCOM, 1284 gives the UNMOVIC chairman less authority, gives the Security Council a greater role in defining key disarmament tasks, and requires that inspectors be full-time UN employees.

In the absence of inspectors, Baghdad's ability to work on prohibited programs without risk of discovery has increased, and there is substantial evidence that Iraq is reconstituting prohibited programs.

- Activities since 1998 clearly show that Baghdad has used the absence of UN inspectors to repair and expand dual-use and dedicated missile-development facilities and to increase its ability to produce WMD.

- Iraq has expanded trade with the outside world and has gained steadily growing access to specialized and dual-use technology and materials that could be diverted to prohibited programs, as well as access to foreign expertise in WMD delivery systems.

- In recent years, Baghdad has diverted goods contracted under the Oil-for-Food program for military purposes and has increased solicitations and dual-use procurements—outside the Oil-for-Food process—that almost certainly are going to prohibited WMD and other weapons programs.

Biological Weapons Program

Iraq has the capability to convert quickly legitimate vaccine and biopesticide plants to BW production and already may have done so. This capability is particularly troublesome because Iraq has a record of concealing its BW activities and lying about the existence of its offensive BW program.

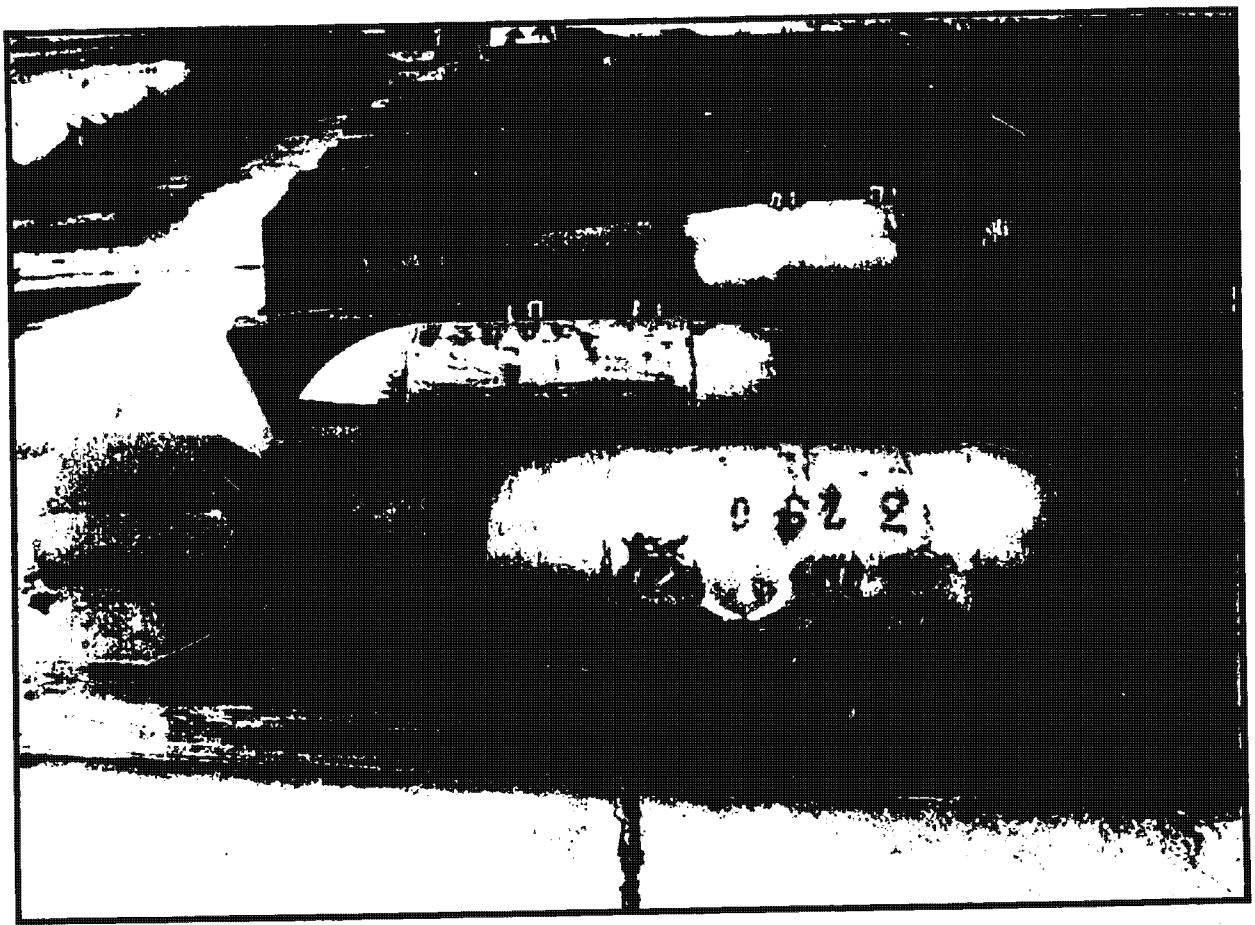
Iraqi-Declared Open-Air Testing of Biological Weapons

Location-Date	Agent	Munition
Al Muhammadiyat – Mar 1988	Bacillus Subtilis[1]	250 bomb (cap. 65 liters)
Al Muhammadiyat – Mar 1988	Botulinum Toxin	250 bomb (cap. 65 liters)
Al Muhammadiyat – Nov 1989	Bacillus Subtilis	122mm rocket (cap. 8 liters)
Al Muhammadiyat – Nov 1989	Botulinum Toxin	122mm rocket (cap. 8 liters)
Al Muhammadiyat – Nov 1989	Aflatoxin	122mm rocket (cap. 8 liters)
Khan Bani Saad – Aug 1988	Bacillus Subtilis	aerosol generator – MI-2 helicopter with modified agricultural spray equipment
Al Muhammadiyat – Dec 1989	Bacillus Subtilis	R-400 bomb (cap. 85 liters)
Al Muhammadiyat – Nov 1989	Botulinum Toxin	R-400 bomb (cap. 85 liters)
Al Muhammadiyat – Nov 1989	Aflatoxin	R-400 bomb (cap. 85 liters)
Jurf al-Sakr Firing Range – Sep 1989	Ricin	155mm artillery shell (cap. 3 liters)
Abu Obeydi Airfield – Dec 1990	Water	Modified F-1 drop-tank (cap. 2,200 liters)
Abu Obeydi Airfield – Dec 1990	Water/potassium permanganate	Modified F-1 drop-tank (cap. 2,200 liters)
Abu Obeydi Airfield – Jan 1991	Water/glycerine	Modified F-1 drop-tank (cap. 2,200 liters)
Abu Obeydi Airfield – Jan 1991	Bacillus Subtilis/ Glycerine	Modified F-1 drop-tank (cap. 2,200 liters)

[1] Bacillus Subtilus is commonly used as a simulant for B. anthracis.

- **After four years of claiming that they had conducted only "small-scale, defensive" research, Iraqi officials finally admitted in 1995 to production and weaponization of biological agents.** The Iraqis admitted this only after being faced with evidence of their procurement of a large volume of growth media and the defection of Husayn Kamil, former director of Iraq's military industries.

- Iraq admitted producing thousands of liters of the BW agents anthrax,[2] botulinum toxin, (which paralyzes respiratory muscles and can be fatal within 24 to 36 hours) and aflatoxin, (a potent carcinogen that can attack the liver, killing years after ingestion) and preparing BW-filled Scud-variant missile warheads, aerial bombs, and aircraft spray tanks before the Gulf war, although it did not use them.



Two R-400A bombs in foreground (with black stripe) photographed by UNSCOM inspectors at Murasana Airfield near the Al Walid Airbase in late 1991 bear markings indicating they were to be filled with botulinum toxin. Other bombs appear to have markings consistent with binary chemical agent fill. This evidence contradicted Iraq's declarations that it did not deploy BW munitions to operational airbases and that it destroyed all BW bombs in July 1991—declarations that were subsequently retracted in the face of overwhelming evidence to the contrary.

[2] An infectious dose of anthrax is about 8,000 spores or less than one-millionth of a gram in a non immuno-compromised person. Inhalation anthrax historically has been 100 percent fatal within five to seven days, although in recent cases aggressive medical treatment has reduced the fatality rate.

Iraq: Declared BW-Related Sites

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Baghdad did not provide sufficient evidence to support its claims that it unilaterally destroyed its BW agents and munitions. **Experts from UNSCOM assessed that Baghdad's declarations vastly understated the production of biological agents and estimated that Iraq actually produced two-to-four times that amount of most agents,** including *Bacillus anthracis*—the causative agent of anthrax—and botulinum toxin.

Current concerns about the BW program are amplified by the improvement or expansion of a number of nominally "civilian" facilities that were directly associated with biological weapons.

- The al-Dawrah Foot and Mouth Disease Vaccine Facility is one of two known Biocontainment Level-3 facilities in Iraq with an extensive air handling and filtering system. Iraq admitted that before the Gulf war that Al-Dawrah was a BW agent production facility. UNSCOM attempted to render it useless for BW agent production in 1996 but left some production equipment in place because UNSCOM could not prove it was connected to previous BW work. In 2001, Iraq announced it would begin renovating the plant without UN approval, ostensibly to produce a vaccine to combat a foot-and-mouth disease outbreak. In fact, Iraq easily can import all the foot and mouth vaccine it needs through the UN.

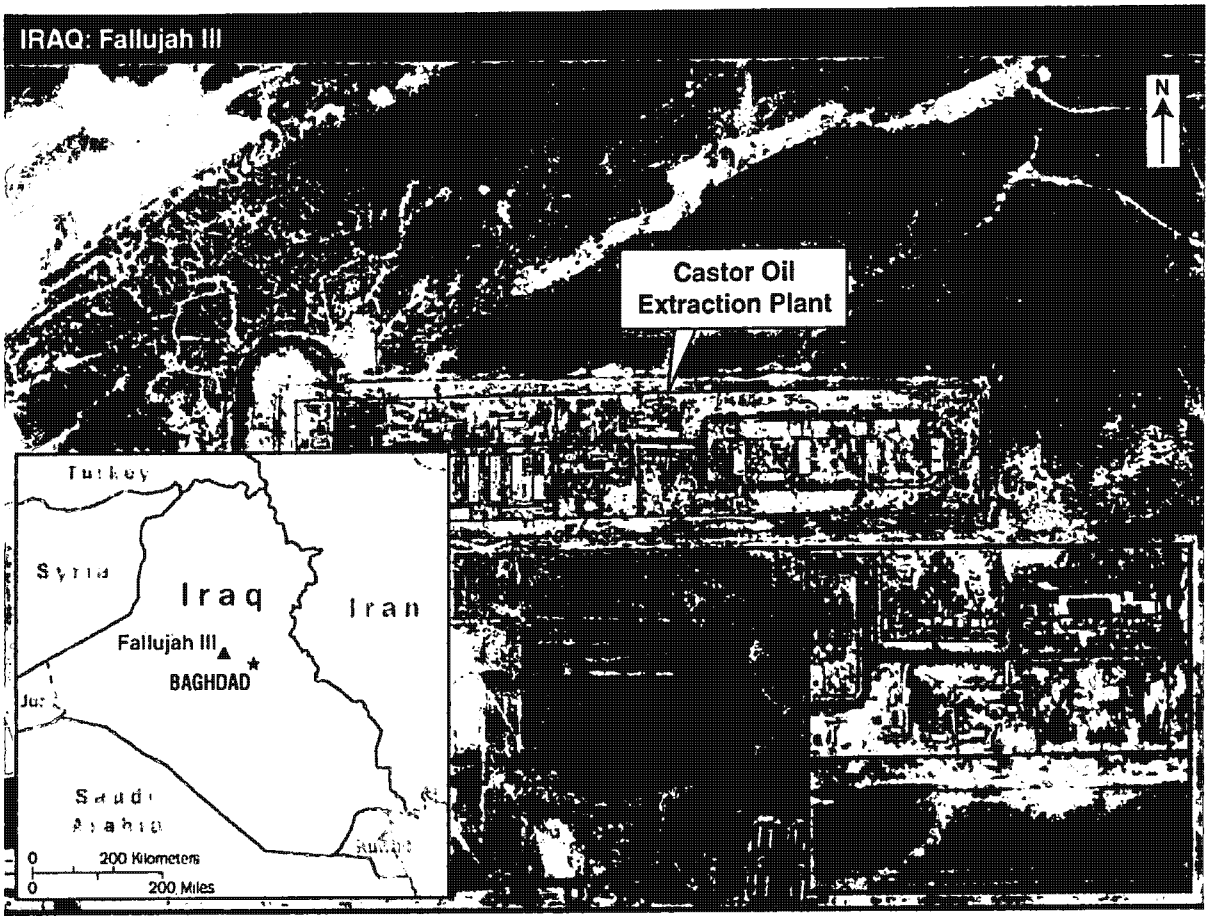
- The Amiriyah Serum and Vaccine Institute is an ideal location for BW research, testing, production, and storage. UN inspectors discovered documents related to BW research at this facility, some showing that BW cultures, agents, and equipment were stored there during the Gulf war. Of particular concern is the plant's new storage capacity, which greatly exceeds Iraq's needs.

- The Fallujah III Castor Oil Production Plant is situated on a large complex with an historical connection to Iraq's CW program. Of immediate BW concern is the potential production of ricin toxin.[3] Iraq admitted to UNSCOM that it manufactured ricin and field-tested it in artillery shells before the Gulf war. Iraq operated this plant for legitimate purposes under UNSCOM scrutiny before 1998 when UN inspectors left the country. Since 1999, Iraq has rebuilt major structures destroyed during Operation Desert Fox. Iraqi officials claim they are making castor oil for brake fluid, but the verification of such claims without UN inspections is impossible.

In addition to questions about activity at known facilities, **there are compelling reasons to be concerned about BW activity at other sites and in mobile production units and laboratories.**

- UNSCOM uncovered a document on Iraqi Military Industrial Commission letterhead indicating that Iraq was interested in developing mobile fermentation units, and an Iraqi scientist admitted to UN inspectors that Iraq was trying to move in the direction of mobile BW production.

[3] Ricin can cause multiple organ failure within one or two days after inhalation.



- Various press reports have cited evidence of ongoing Iraqi efforts to procure mobile BW laboratories that could be used for research and development.

Chemical Weapons Programs

Iraq now is expanding its infrastructure, under cover of civilian industries, that it could use to advance its CW production capability. During the 1980s Saddam had a formidable CW capability that he used against Iranians and against Iraq's Kurdish population. Iraqi forces killed or injured more than 20,000 people in multiple incidents, delivering chemical agents (including mustard agent[4] and the nerve agents sarin and tabun[5]) in aerial bombs, 122mm rockets, and artillery shells against both tactical military targets and restive segments of Iraq's Kurdish population. Before the 1991 Gulf war, Baghdad had a large stockpile of chemical munitions and a robust indigenous production capacity.

[4] Mustard is a blister agent that causes medical casualties by blistering or burning exposed skin, eyes, lungs, and mucous membranes within hours of exposure. It is a persistent agent that can remain a hazard for days.
[5] Sarin, cyclosarin, and tabun are G-series nerve agents that can act within seconds of absorbtion through the skin or inhalation. These agents overstimulate muscles or glands with messages transmitted from nerves, causing convulsions and loss of consciousness. Tabun is persistent and can remain a hazard for days. Sarin and cyclosarin are not persistent and pose more of an inhalation hazard than a skin hazard.

Iraqi Use of Chemical Weapons

Date	Area Used	Type	Approximate Casualties	Target Population
Aug 1983	Hajj Umran	Mustard	fewer than 100	Iranians/Kurds
Oct-Nov 1983	Panjwin	Mustard	3,000	Iranian/Kurds
Feb-Mar 1984	Majnoon Island	Mustard	2,500	Iranians
Mar 1984	al-Basrah	Tabun	50 to 100	Iranians
Mar 1985	Hawizah Marsh	Mustard/Tabun	3,000	Iranians
Feb 1986	al-Faw	Mustard/Tabun	8,000 to 10,000	Iranians
Dec 1986	Umm ar Rasas	Mustard	thousands	Iranians
Apr 1987	al-Basrah	Mustard/Tabun	5,000	Iranians
Oct 1987	Sumar/Mehran	Mustard/nerve agents	3,000	Iranians
Mar 1988	Halabjah		hundreds	Iranians/Kurds
Apr-Jul 1988	al-Faw/Fish Lake		thousands	Iranians

Although precise information is lacking, human rights organizations have received plausible accounts from Kurdish villagers of even more Iraqi chemical attacks against civilians in the 1987 to 1988 time frame—with some attacks as late as October 1988—in areas close to the Iranian and Turkish borders.

- UNSCOM supervised the destruction of more than 40,000 chemical munitions, nearly 500,000 liters of chemical agents, 1,800,000 liters of chemical precursors, and seven different types of delivery systems including ballistic missile warheads.

- More than 10 years after the Gulf war, gaps in Iraqi accounting and current production capabilities strongly suggest that Iraq maintains a stockpile of chemical agents, probably VX[6], sarin, cyclosarin[7], and mustard.

Iraq probably has concealed precursors, production equipment, documentation, and other items necessary for continuing its CW effort. Baghdad never supplied adequate evidence to support its claims that it destroyed all of its CW agents and munitions. Thousands of tons of chemical precursors and tens of thousands of unfilled munitions, including Scud-variant missile warheads, remain unaccounted for.

- UNSCOM discovered a document at Iraqi Air Forces headquarters in July 1998 showing that Iraq overstated by at least 6,000 the number of chemical bombs it told the UN it had used during the Iran-Iraq war—bombs that still are unaccounted for.

- Iraq has not accounted for 26,500 artillery rockets that in the past were its preferred vehicle for delivering nerve agents, nor has it accounted for about 550 artillery shells filled with mustard agent.

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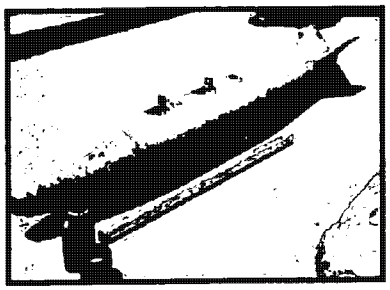
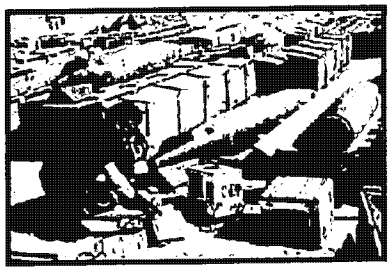
[6] VX is a V-series nerve agent that is similar to but more advanced than G-series nerve agents in that it causes the same medical effects but is more toxic and much more persistent. Thus, it poses a far greater skin hazard than G-series agents. VX could be used for long-term contamination of territory.

[7] See footnote 5.

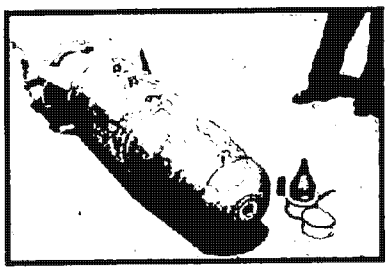
Chemical-Filled Munitions Declared by Iraq



Iraqi 250-gauge chemical bomb.

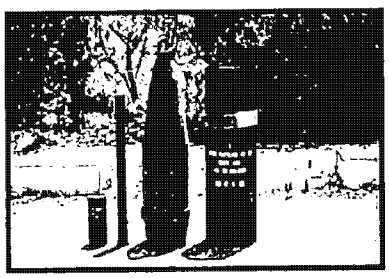


Iraqi 500-gauge chemical bombs.

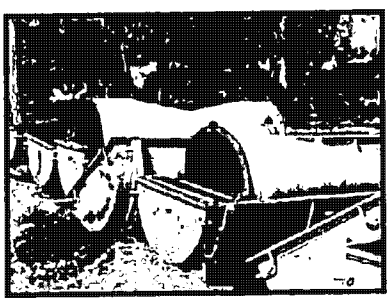


Iraqi DB-2 chemical bomb.

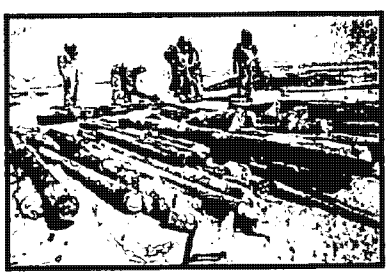
Iraqi R-400 chemical bombs.



Iraqi 155-mm chemical shell.

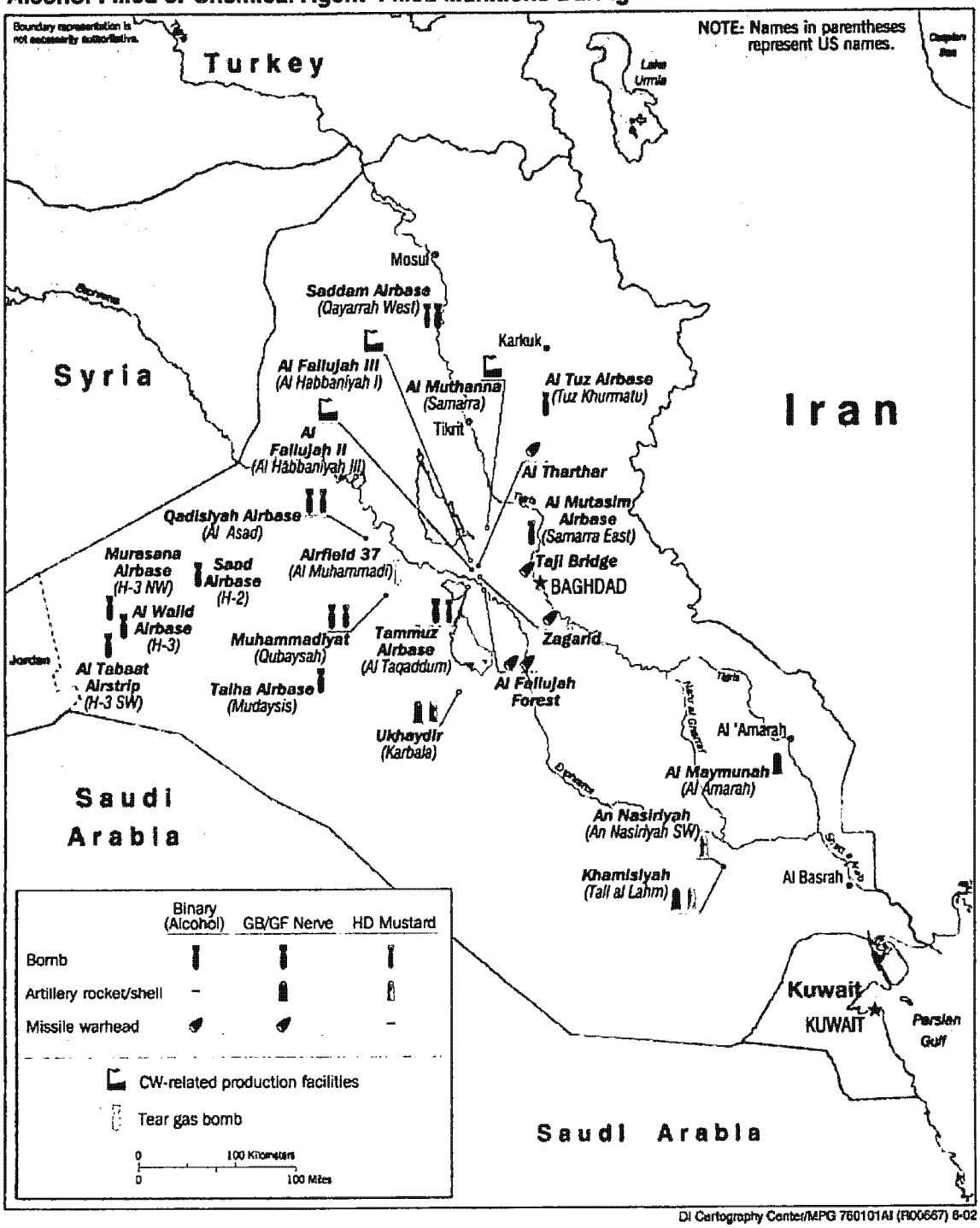


Iraqi Al Husayn chemical warheads.



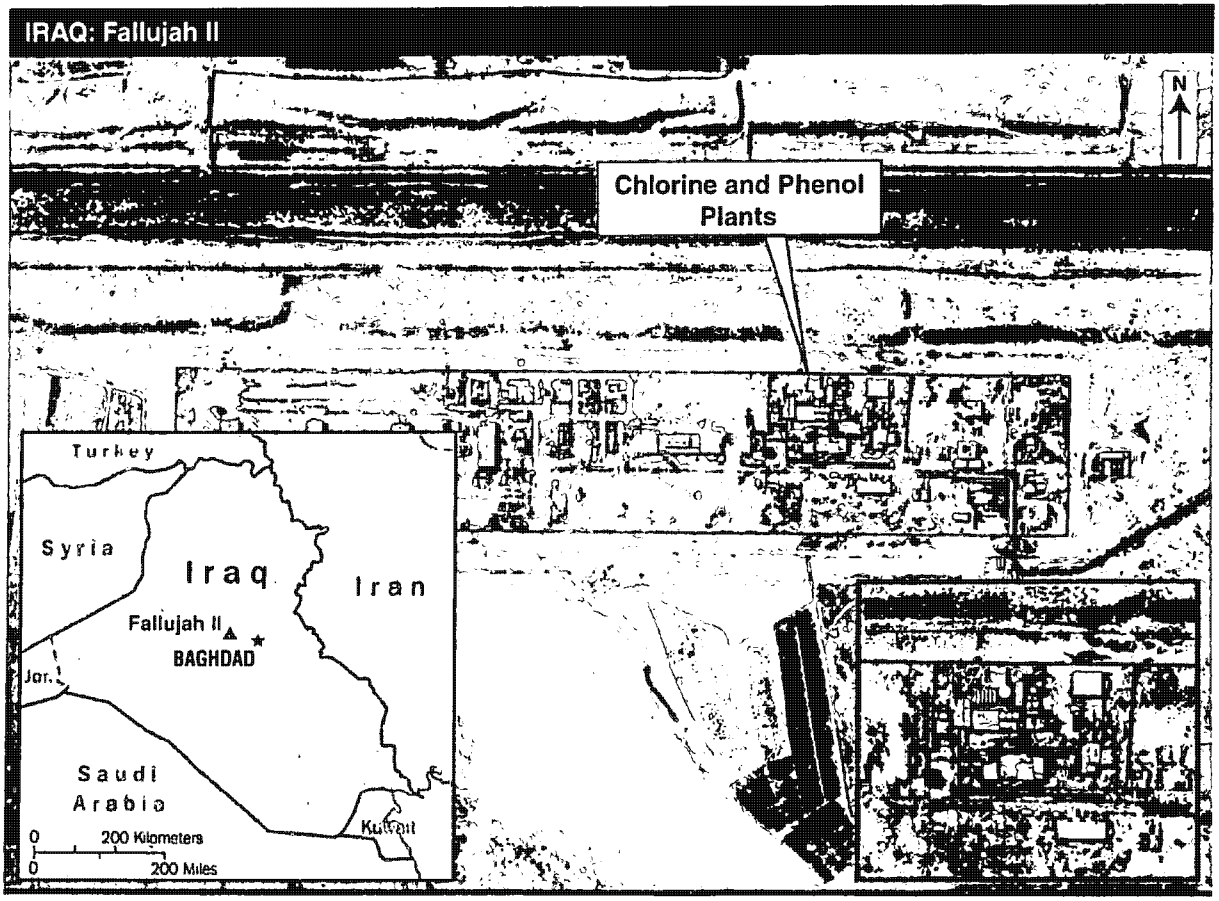
122-mm rockets filled with the chemical nerve agent sarin prior to destruction.

Iraq: CW-Related Production Facilities and Declared Sites of Deployed Alcohol-Filled or Chemical Agent–Filled Munitions During Desert Storm



Baghdad continues to rebuild and expand dual-use infrastructure that it could divert quickly to CW production. The best examples are the chlorine and phenol plants at the Fallujah II facility. Both chemicals have legitimate civilian uses but also are raw materials for the synthesis of precursor chemicals used to produce blister and nerve agents. Iraq has three other chlorine plants that have much higher capacity for civilian production; these plants and Iraqi imports are more than sufficient to meet Iraq's civilian needs for water treatment. Of the 15 million kg of chlorine imported under the UN Oil-for-Food program since 1997, Baghdad used only 10 million kg and has 5 million kg in stock, suggesting that some domestically produced chlorine has been diverted to proscribed activities.

- Fallujah II was one of Iraq's principal CW precursor production facilities before the Gulf war. In the last two years the Iraqis have upgraded the facility and brought in new chemical reactor vessels and shipping containers with a large amount of production equipment. They have expanded chlorine output far beyond pre-Gulf war production levels—capabilities that they could divert quickly to CW production. Iraq is seeking to purchase CW agent precursors and applicable production equipment and is trying to hide the activities of the Fallujah plant.



Nuclear Weapons Program

More than ten years of sanctions and the loss of much of Iraq's nuclear infrastructure under IAEA oversight have not diminished Saddam's interest in acquiring or developing nuclear weapons. Iraq had an advanced nuclear weapons development program before the Gulf war that focused on building an implosion-type weapon using highly enriched uranium. Baghdad was attempting a variety of uranium enrichment techniques, the most successful of which were the electromagnetic isotope separation and gas centrifuge programs. After its invasion of Kuwait, Iraq initiated a crash program to divert IAEA-safeguarded, highly enriched uranium from its Soviet and French-supplied reactors, but the onset of hostilities ended this effort. Iraqi declarations and the UNSCOM/IAEA inspection process revealed much of Iraq's nuclear weapons efforts, but Baghdad still has not provided complete information on all aspects of its nuclear weapons program.

- Iraq has withheld important details relevant to its nuclear program, including procurement logs, technical documents, experimental data, accounting of materials, and foreign assistance.

- Baghdad also continues to withhold other data about enrichment techniques, foreign procurement, weapons design, and the role of Iraqi security services in concealing its nuclear facilities and activities.

Iraq still has much of the infrastructure needed to pursue its goal of building a nuclear weapon. Iraq retains its cadre of nuclear scientists and technicians, its program documentation, and sufficient dual-use manufacturing capabilities to support a reconstituted nuclear weapons program. Iraqi media have reported numerous meetings between Saddam and nuclear scientists over the past two years, signaling his continued interest in reviving a nuclear program.

- Before its departure from Iraq, the IAEA made significant strides toward dismantling Iraq's nuclear-weapons program and unearthing the nature and scope of Iraq's past nuclear activities. In the absence of inspections, however, Iraq easily could have begun to reconstitute its nuclear program and to unravel the IAEA's hard-earned accomplishments.

Iraq's expanding international trade provides growing access to nuclear-related technology and materials and potential access to foreign nuclear expertise. An increase in dual-use procurement activity in recent years may be supporting a reconstituted nuclear-weapons program.

- The acquisition of sufficient fissile material is Iraq's principal hurdle in developing a nuclear weapon.

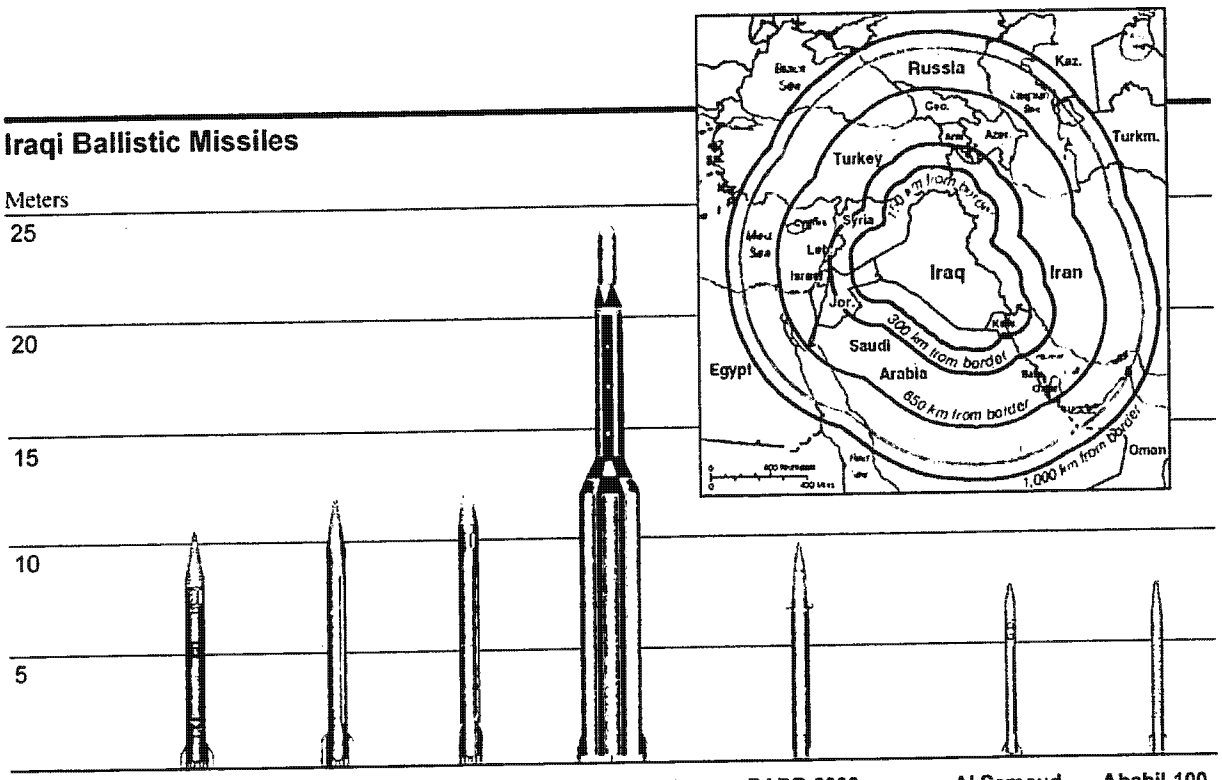
- **Iraq is unlikely to produce indigenously enough weapons-grade material for a deliverable nuclear weapon until mid-to-late in the decade. Baghdad could shorten the acquisition timeline significantly if it were able to procure fissile material abroad.**

Iraq: Nuclear-Related Facilities

DI Cartography Center/MPG 760102AI (R00567) 6-02

Ballistic Missile Program

Compelling information reveals that Iraq is developing a ballistic missile capability that exceeds the 150-km range limitation established under UNSCR 687. Iraq had an active missile force before the Gulf war that included 819 Scud-B missiles (300-km range) purchased from the former Soviet Union and a program to extend the Scud's range and modify its warhead. Iraq admitted filling at least 75 of its Scud warheads with chemical or biological agents and deployed these weapons for use against coalition forces and regional opponents including Israel in 1991.



	Scud B	Al Husayn	Al Abbas	(SLV) Al-Abid	BADR-2000		Al Samoud	Ababil-100
Estimated range (km)	300	650	900	NA	750	1,000	[a]150	150
Propellant type	Liquid	Liquid	Liquid	Liquid	Solid/Liquid	Solid/Solid	Liquid	Solid
Use	Iran/Iraq war, 1980s	Iran/Iraq and Gulf war 1987-91	Flight tested 1988-90	Flight tested 1989	Never developed	Never developed	Flight testing 1997-present	Under development

[a]The Al Samoud is capable of flying beyond the allowed 150 km range.

- Most of the approximately 90 Scud-type missiles Saddam fired at Israel, Saudi Arabia, and Bahrain during the Gulf war were al-Husayn variants that the Iraqis modified by lengthening the airframe and increasing fuel capacity, extending the range to 650 km.

- Baghdad was developing other longer-range missiles based on Scud technology, including the 900-km al-Abbas. **Iraq was designing follow-on multi-stage and clustered medium-range ballistic missile (MRBM) concepts—some similar to the Al Abid space-launch vehicle (SLV)—with intended ranges up to 3,000 km.** Iraq also had a program to develop a two-stage missile called the Badr-2000 using solid-propellants with an estimated range of 750 to 1,000 km.

- Iraq never fully accounted for its existing missile programs. Discrepancies in Baghdad's declarations suggest that Iraq retains a small force of Scud-type missiles and an undetermined number of launchers and warheads. Further, Iraq never explained the disposition of advanced missile components, such as guidance and control systems, that it could not produce on its own and that would be critical to developmental programs.

Iraq continues to work on UN-authorized short-range ballistic missiles (SRBMs)—those with a range no greater than 150 km—that help develop the expertise and infrastructure needed to produce longer-range missile systems. The al-Samoud liquid propellant SRBM is capable of flying beyond the allowed 150 km range. The al-Samoud and the solid-propellant Ababil-100, both of which may be nearing operational deployment, appeared on launchers in a military parade on 31 December 2000 in Baghdad. Other evidence strongly suggests Iraq is modifying missile testing and production facilities to produce even longer-range missiles:

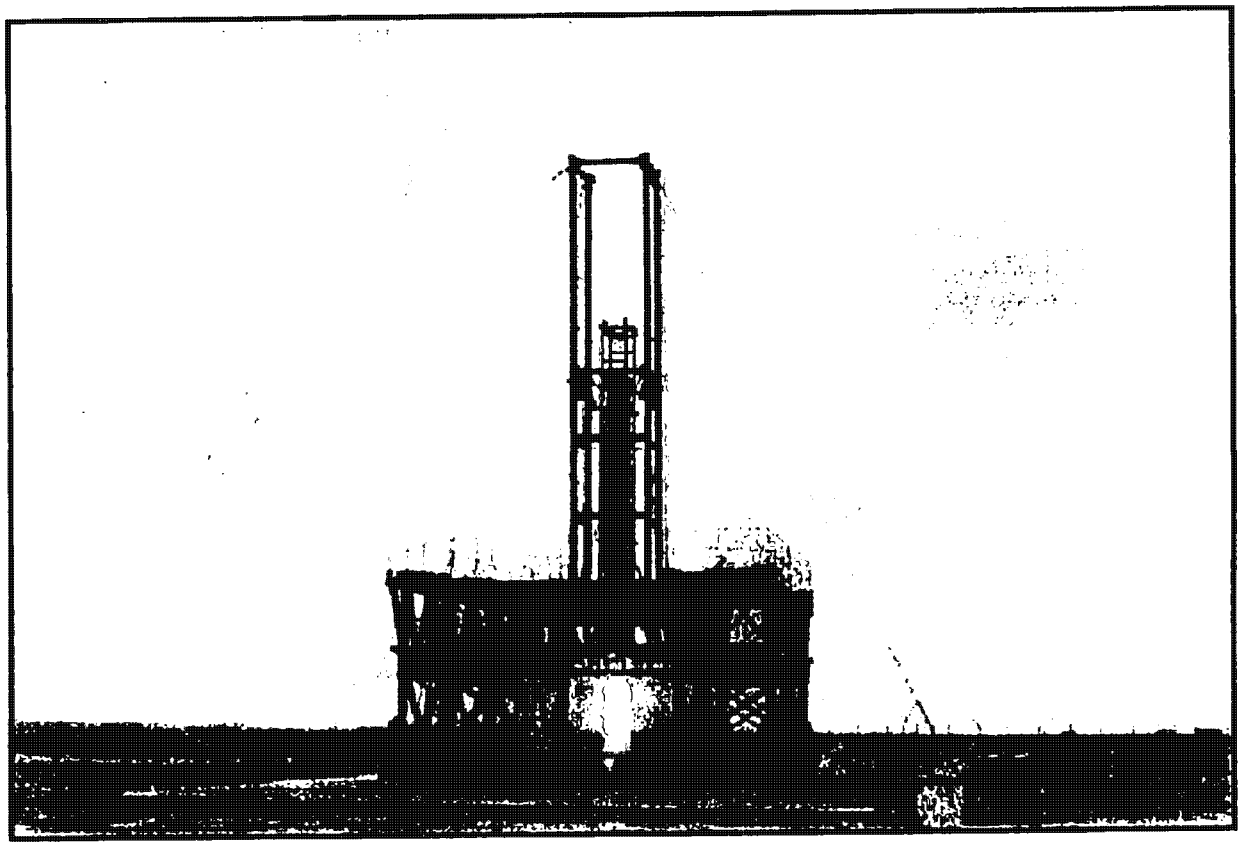
- The Al-Rafah-North Liquid Propellant Engine RDT&E Facility is Iraq's principal site for the static testing of liquid propellant missile engines. Baghdad has been building a new test stand there that is larger than the test stand associated with al-Samoud engine testing and the defunct Scud engine test stand. The only plausible explanation for this test facility is that Iraq intends to test engines for longer-range missiles prohibited under UNSCR 687.

- The Al-Mutasim Solid Rocket Motor and Test Facility, previously associated with Iraq's Badr-2000 solid-propellant missile program, has been rebuilt and expanded in recent years. The al-Mutasim site supports solid-propellant motor assembly, rework, and testing for the UN-authorized Ababil-100, but the size of certain facilities there, particularly those newly constructed between the assembly rework and static test areas, suggests that Baghdad is preparing to develop systems that are prohibited by the UN.

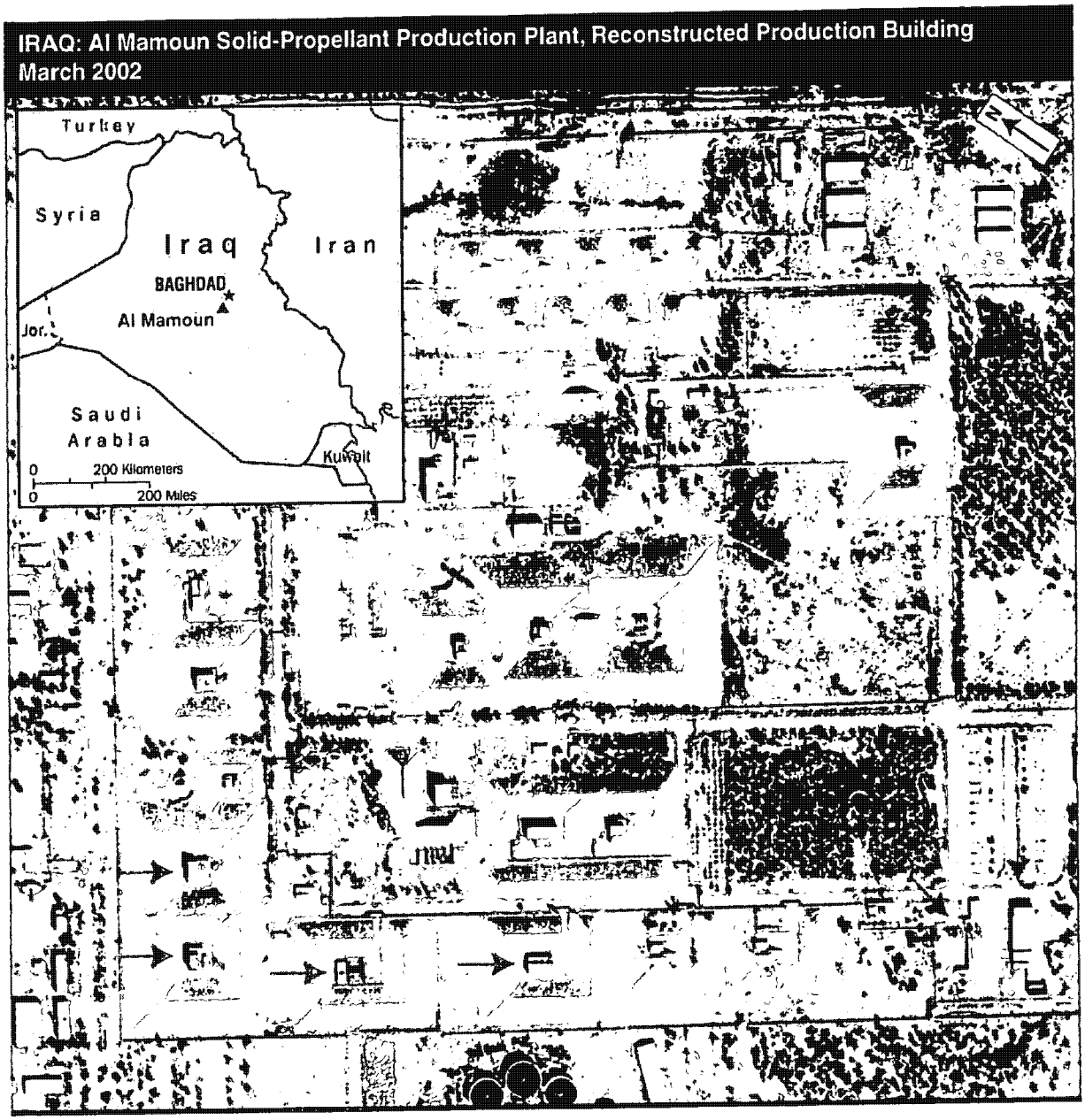
- At the Al-Mamoun Solid Rocket Motor Production Plant and Research, Development, Testing and Evaluation (RDT&E) Facility, the Iraqis, since the December 1998 departure of inspectors, have rebuilt structures damaged in the Gulf War and dismantled by UNSCOM that were originally built to manufacture solid propellant motors for the Badr-2000 program. They also have built a new building and are reconstructing other buildings originally designed to fill large Badr-2000 motor casings with solid propellant.

- Also at al-Mamoun, the Iraqis have rebuilt two structures used to "mix" solid propellant for the Badr-2000 missile. The new buildings—about as large as the original ones—are ideally suited to house large, UN-prohibited mixers. In fact, the only logical explanation for the size and configuration of these mixing buildings is that Iraq intends to develop longer-range, prohibited missiles.

SA-2 (Al Samoud) Engine Test



Iraq: Ballistic-Missile-Related Facilities



Iraq has managed to rebuild and expand its missile development infrastructure under sanctions, suggesting that Baghdad maintains an active procurement network in support of its proscribed programs. Iraqi intermediaries have sought production technology, machine tools, and raw materials in violation of the arms embargo.

- The Iraqis have completed a new ammonium perchlorate production plant at Mamoun that supports Iraq's solid propellant missile program. Ammunition perchlorate is a common oxidizer used in solid propellant missile motors. Baghdad would not have been able to complete this facility without help from abroad.

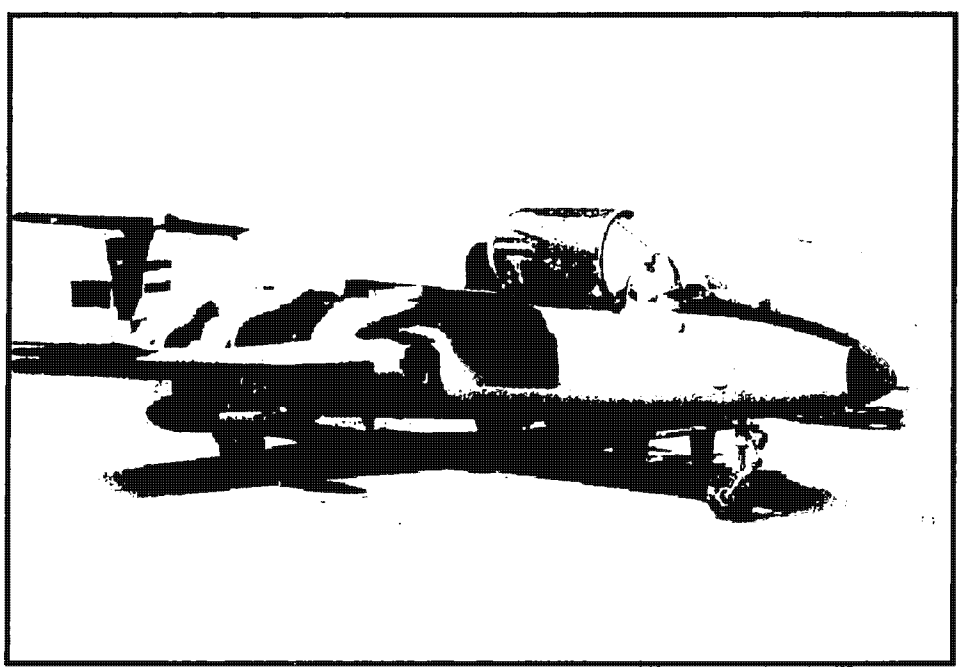
- In August 1995, Iraq was caught trying to acquire sensitive, proscribed guidance systems (gyroscopes) for ballistic missiles, demonstrating that Baghdad has been pursuing missile

technology for some time. Iraqi officials admitted that they had received a similar shipment earlier that year.

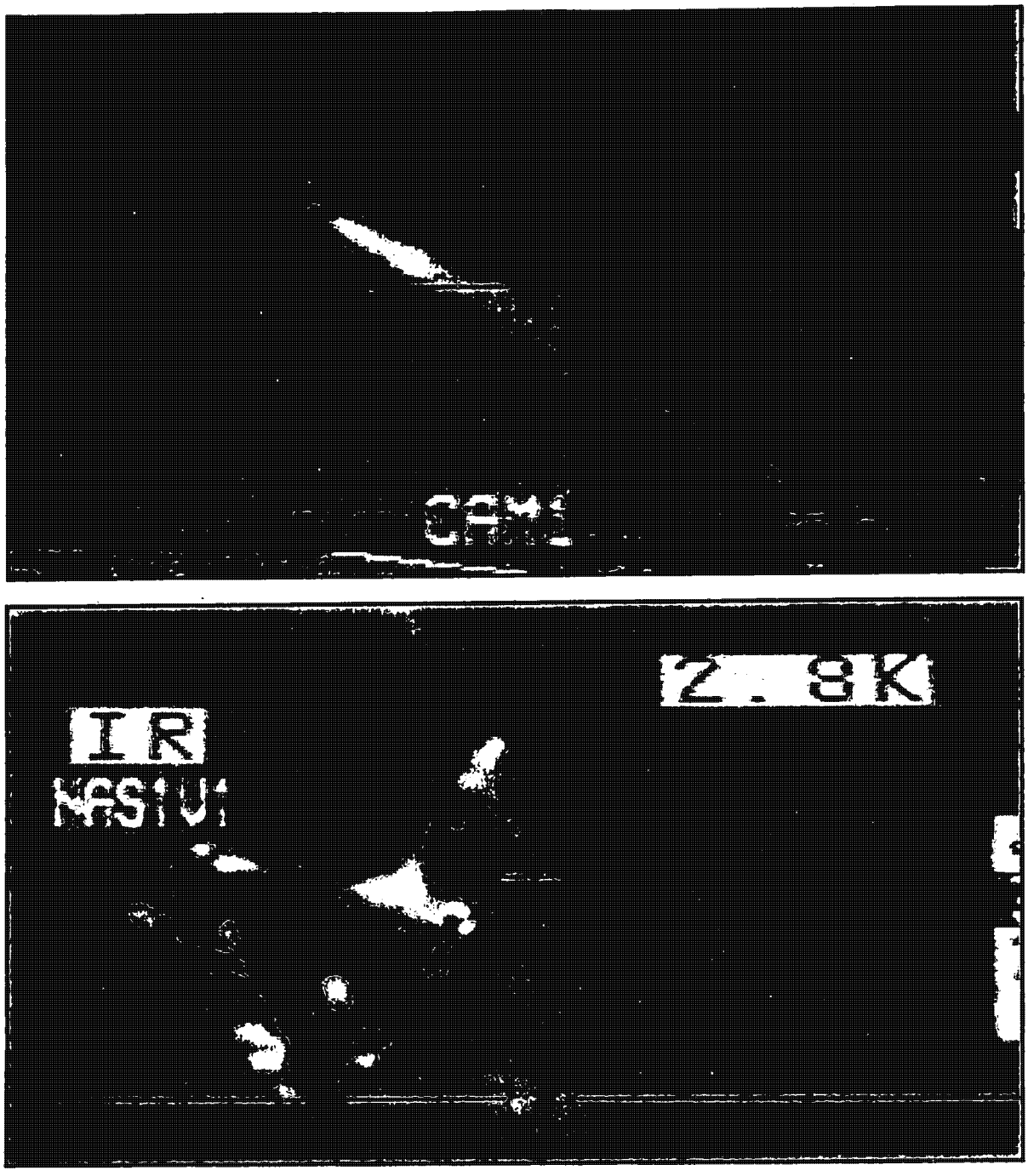
Unmanned Aerial Vehicle Program and Other Aircraft

Iraq is continuing to develop other platforms capable of delivering chemical and biological agents. Immediately before the Gulf War, Baghdad attempted to convert a MiG-21 into an unmanned aerial vehicle (UAV) to carry spray tanks capable of dispensing chemical or biological agents. UNSCOM assessed that the program to develop the spray system was successful, but the conversion of the MiG-21 was not. More recently, Baghdad has attempted to convert the L-29 jet trainer aircraft into a UAV that can be fitted with the CBW spray tanks, most likely a continuation of previous efforts with the MiG-21. Although much less sophisticated than ballistic missiles as a delivery platform, an aircraft, manned or unmanned, is the most efficient way to disseminate chemical and biological weapons over a large, distant area.

Iraqi L-29 UAV Test-Bed Aircraft at Samarra East Airbase



- Iraq already has produced modified drop-tanks that can disperse effectively biological or chemical agents. Before the Gulf war, the Iraqis successfully experimented with aircraft-mounted spray tanks capable of releasing up to 2,000 liters of an anthrax simulant over a target area. Iraq also has modified successfully commercial crop sprayers and tested them with an anthrax simulant delivered from helicopters.



Test of dissemination of BW agents from a modified drop tank carried by a Mirage F1. The drop tank was filled with 1000 liters of slurry Bacillus subtilis, a simulant for B. anthracis, and disseminated over Abu Obeydi Airbase in January 1991. The photo is from a videotape provided by Iraq to UNSCOM.

- Baghdad has a history of experimenting with a variety of unmanned platforms. Iraq's use of newer, more capable airframes would increase range and payload, while smaller platforms might be harder to detect and therefore more survivable. This capability represents a serious threat to Iraq's neighbors and to international military forces in the region.

- Iraq used tactical fighter aircraft and helicopters to deliver chemical agents, loaded in bombs and rockets, during the Iran-Iraq war. Baghdad probably is considering again using manned aircraft as delivery platforms depending on the operational scenario.

Procurement in Support of WMD Programs

Iraq has been able to import dual-use, WMD-relevant equipment and material through procurements both within and outside the UN sanctions regime. **Baghdad diverts some of the $10 billion worth of goods now entering Iraq every year for humanitarian needs to support the military and WMD programs instead.**

- UN monitors at Iraq's borders do not inspect the cargo—worth hundreds of millions of dollars—that enters Iraq every year outside of the Oil-for-Food program; some of these goods clearly support Iraq's military and WMD programs. For example, Baghdad imports fiber-optic communication systems outside of UN auspices to support the Iraqi military.

- Iraq imports goods using planes, trains, trucks, and ships without any type of international inspections—in violation of UN Security Council resolutions.

Even within the UN-authorized Oil-for-Food program, Iraq does not hide the fact that it wants to purchase military and WMD-related goods. For example, **Baghdad diverted UN-approved trucks for military purposes and construction equipment to rehabilitate WMD-affiliated facilities, even though these items were approved only to help the civilian population.**

- On several occasions, Iraq has asked to purchase goods—such as neutron generators and servo valves—that the UN Monitoring, Verification, and Inspection Commission (UNMOVIC) views as linchpins for Iraqi prohibited programs; alternative, non-dual-use items would serve the stated civilian purpose.

- The UN Iraq Sanctions Committee denied such sales under the former sanctions regime, and UNMOVIC and IAEA will continue to forward these items to the Sanctions Committee for consideration under the revised Goods Review List that began 30 May 2002.

- Iraq has been able to repair modern industrial machine tools that previously supported production of WMD or missile components and has imported additional tools that it may use to reconstitute Baghdad's unconventional weapons arsenal.

UNMOVIC began screening contracts pursuant to UN Security Council Resolution 1284 in December 1999 and since has identified more than 100 contracts containing dual-use items as defined in UNSCR 1051 that can be diverted into WMD programs. UNMOVIC also has

requested that suppliers provide technical information on hundreds of other goods because of potential dual-use concerns. In many cases, Iraq has requested technology that clearly exceeds requirements for the stated commercial end-use when it easily could substitute items that could not be used for WMD.

- On some UN contracts, Baghdad claimed that the requested goods are designed to rehabilitate facilities—such as the Al Qa'im phosphate plant and Fallujah—that in the past were used to support both industrial and WMD programs.

Tab C

(b)(3)

CENTRAL INTELLIGENCE AGENCY DIRECTORATE OF INTELLIGENCE

12 August 2002

Iraq: Saddam's Options in a Conflict With the US

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Iraq: Saddam's Options in a Conflict With the US (b)(3)

Summary (b)(3)

Iraq could resort to a variety of options to deter a US attack or diminish US military effectiveness once an attack is underway.

- Iraq has several options—ranging from stoking the Israeli-Palestinian conflict to admitting inspectors—which it could employ to delay a US attack or to increase concern over collateral damage if an attack is underway.

- Saddam will have to consider the possibility that many of his more aggressive asymmetric options—such as attacking Israel or using WMD—could backfire (b)(3)

Iraq: Saddam's Options in a Conflict With the US (b)(3)

The following list represents the range of actions open to the Iraqi leadership in a conflict with the United States. They are not based on hard evidence of Iraqi intentions, but are derived from an understanding of Iraq's capabilities and past practices.

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- Saddam's actual responses will depend on the shape of the campaign directed against him and on the resources he is able to muster.

Saddam may choose to employ his range of diplomatic, political, economic, and military options individually or in combination, and he probably would employ different options or sets of options at different stages of the campaign against him.

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The options vary widely in their likely impact on the overall campaign and in their risks and costs. Saddam understands that many of his more aggressive options—such as attacking Israel or using WMD—could backfire and increase domestic and international support for US actions to remove him.

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- For a more thorough discussion of Saddam's calculus regarding each set of options, see NESAF IA 2002-20085CH titled "Saddam's Asymmetric Options in a Conflict With the US"

Diplomacy and Influence Options

Diplomacy and influence operations will be key components of Iraq's defensive strategy to stop the United States short of its goal of regime change. Many of these activities are already underway.

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Diplomacy. Baghdad will continue to use diplomacy in the pre-hostilities phase to undermine Arab and international support for US anti-Iraq efforts. Saddam is likely to try to unite the Arab League behind Iraq and to deny the US basing rights in the Gulf.

(b)(3)

During the build-up phase:

- In the multilateral level, Iraq may agree to the return of UN weapons inspectors. Baghdad may seek UN Security Council and General Assembly debates and resolutions over military action against Iraq, and will heavily lobby Security Council members France, Russia, and China. This action would meet Security Council demands and undermine the US argument that Iraq's WMD pose a threat.

- Iraq probably will lobby the European Union and the Arab League for resolutions condemning US military action and supporting Iraq. Iraq will try to drive a wedge between the US and our traditional European allies, increasing the constraints on US action.

- Iraq is likely to lobby individual countries in Europe, the wider Arab world, Africa, and Asia to condemn military action against Iraq. Iraq will try to build pressure on the United States to abandon military action.

- Iraq may use diplomatic channels to threaten Kuwait, Bahrain, Qatar, Oman UAE, Yemen, Jordan, Saudi Arabia, and Turkey with retaliation. Iraq will use threats to deny the US basing rights in these countries.

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(b)(3) This assessment was prepared by the Office of Near Eastern, South Asian, and African Analysis. Comments and queries are welcome and may be directed to the Issue Manager, NESAF, on

(b)(3)

- Iraq may seek a mutual defense pact with Syria and/or Iran in an attempt to deter Washington from creating a larger war. Iraq will try to deter the United States by making a war seem wider, more difficult, and more likely to engulf the whole region. (b)(3)

Once hostilities have commenced:

- Iraq could agree to the unconditional return of inspectors in return for a halt in military operations. This action would remove the WMD rational for attacking Iraq, making continued military action seem pointless and raising pressure for a ceasefire.

- To damage the US economy, Iraq may seek an Arab League economic boycott of American products and companies or may lobby the EU or sympathetic countries to condemn the military action and to impose sanctions or break off trade relations with the United States. (b)(3)

Influence Operations. In the past decade Iraq has used diplomacy and influence operations to undermine international support for economic sanctions. Saddam may employ similar operations to destabilize neighboring states prior to US action, to unify and mobilize the Arab "street" against the United States and its allies, and to build international condemnation of US military action. Internally, he may use influence operations to promote conflict between Kurdish factions. He may try to deceive and influence US leaders and military planners. (b)(3)

During the build-up phase:

- Saddam will continue to stoke—both rhetorically and financially—the Israeli - Palestinian conflict. This conflict distracts the US leadership, builds Arab support for the Iraqi regime, and increases pressure on the US not to act while Israeli – Palestinian questions remains unresolved.

- Iraq will continue to reinforce the impression in the Arab world that the US action is part of a "US-Zionist conspiracy" directed against all Arabs, and he will claim that Washington intends to divide Iraq. Saddam hopes to gain support in the Arab world and undermine support for US action.

- Iraq may threaten publicly Kuwait, Bahrain, Qatar, Oman UAE, Yemen, Jordan, Saudi Arabia, and Turkey with "dire retaliation" and with cutoffs of oil and commercial contracts if they support US military action. Iraq's objective would be to turn public opinion in those nations against supporting the United States and to increase pressure on their governments. Iraq will attempt to influence the economic and social elites of neighboring countries to deny US basing rights in the region.

- Iraq may redouble its efforts in the international and Arab press to depict its self as the victim of US bullying/aggression, and could invite the world press and peace groups to Iraq to show the "reasonableness" of his position. Iraq's objective will be to use international pressure to deter the United States from military action.

- The Iraqis may use press placements and other media to undermine the governments in key regional states providing assistance to the US effort. Iraq's objective will be to punish those states and to disrupt the US build-up.

- Saddam may use threats or leaked reports of strange and/or terrible weapons to influence US military planning or morale, and could imply he has nuclear weapons that he will if the build-up proceeds. Saddam might hope that Washington will waste time and resources addressing non-existing "threats." (b)(3)

Once hostilities have commenced:

- Iraq will display civilian casualties and damage to civilian infrastructure to build sympathy for Iraq and draw condemnation of the United States.

- Iraq will continue to use denial and deception—such as moving military assets into civilian area—to misdirect the US military campaign. The objective will be to draw out the campaign, to

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protect key regime assets, and to make US forces vulnerable to counter attack.

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Domestic Political Options

Saddam will try to bolster his support within the country and weaken the internal opposition, including actions to boost support from tribal and religious elements and to ensure the loyalty of the Iraqi military and security services. He may also take steps to undermine or co-opt Kurdish factions, or he may try to incite conflict between Kurdish groups.

During the build-up phase:

- Saddam will continue current attempts to improve the morale of key Iraqi security forces by improving living conditions, pay, and benefits. His objective is to secure the reliability of these key forces.
- Saddam may increase funding for tribal leaders and organizations to build loyalty among the tribes.
- Saddam may greatly increase the funding of Shia organizations, release imprisoned Shia clergy, restore traditional Islamic schools, or renovate mosques, attempting to defuse Shia hatred for the regime.
- Saddam may threaten to withhold Oil-for-Food purchases from the Kurdish region or to cut off the flow of oil if the Kurds side with the United States. His objective would be undermining Kurdish support for US military action.

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- Saddam may move to purchase the loyalty of one or both major Kurdish factions
- Saddam may announce his retirement and succession by his son Qusay.

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Economic Options

Saddam has also used Iraq's economic clout to build support and to undermine opposition. He may use "the oil card" to undermine international support for US action or to punish the United States and its allies. He will increase pressure on the Kurds, Jordanians and Syrians through the manipulation of oil supplies.

During the build-up phase:

- Saddam could cut off oil supplies to Jordan—whose economy relies heavily on Iraqi oil exports—or Turkey—who uses the trade to ameliorate the economic situation in its volatile Kurdish region—to punish them for supporting US action against Iraq.
- Iraq may cut off all oil exports under the Oil-for-Food program in an attempt to shock the international oil market and create a humanitarian crisis inside Iraq.
- Iraq may offer contracts, lucrative joint ventures, and oil deals to nations that support the Iraqi position or condemn US action.
- Saddam may privately threaten creditor nations such as Russia with the loss of tens of billions of dollars if the regime falls.
- Saddam may attempt to flood areas in southern Iraq in an attempt to disrupt the invasion or channel movement.

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Once hostilities have commenced:

- Saddam may try to convince sympathetic Arab, Muslim, and Third World oil producers to cut off oil sales to the United States and its allies, or to withhold their production from world markets, raising oil prices and increasing pressure on the United States.
- Saddam may order the discharge of petroleum into the Gulf, as he did in 1991, in order to shut down Kuwaiti and Saudi desalination and power plants.

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Military Options

Saddam's range of military options includes conventional military operations, the use of weapons of mass destruction (WMD), and unconventional warfare or terrorism. (b)(3)

During the build-up phase:

- As he did before Operation Desert Fox in December 1998, Saddam may divide the country into four zones putting a trusted lieutenant in control of each zone to maintain control and issue orders in case of communications failure.

- Saddam may increase the flow of arms to loyal tribes throughout Iraq and create command and control structures to co-ordinate the military actions of tribal elements.

- As in 1990, Iraq may dispatch agents to conduct terrorist attacks against United States interests. Saddam could view that a successful attack may dissuade a casualty-averse US public from supporting an invasion against Iraq.

- Saddam may invade Kurdish territory to seize the initiative from Washington and to destroy armed elements that could be used against him. As he did during his August 1996 move on Irbil, Saddam might gamble that the United States would have limited options to repel his offensive.

- Demonstrating that he learned a lesson from the Gulf war, Saddam may launch preemptive conventional military attacks against US forces to cause casualties and disrupt the build-up.

- Iraqis may use small boats, indigenous craft, anti-ship missiles, or unmanned aerial vehicles to attack high value US ships in the Persian Gulf. Iraq also may attack US AWACS aircraft. Saddam may calculate that US resolve to remove his regime would be altered by a catastrophic loss.

- Saddam may attack US forces in Kuwait or other supporting states with WMD in order to disrupt the build-up and undermine local support to the US effort.

- Iraq may attack Israel with conventional weapons or WMD in attempt to draw Israel into the conflict, rally the Arab public, and portray US military actions as a US-Zionist plot.

- Iraqi agents may foment violent demonstrations throughout the Arab world to mobilize hostility against the United States and against Arab states that support the anti-Saddam effort. Demonstrations and violence may threaten the stability of moderate Arab states.

- Iraq may conduct a covert WMD attack on the United States to cause casualties and economic loss, and to distract US leadership. A successful attack would undermine public confidence in homeland security measures. An attack not directly attributable to Iraq may prompt public criticism of action against Iraq as opposed to Al Qa'ida.

(b)(3)

Once hostilities have commenced:

- Iraqi agents may carry out terrorist attacks against US interests worldwide. Attacks may include bombings of diplomatic facilities; assassination of military, diplomatic, and political leaders; sabotage of economic infrastructure; and cyber attacks.

- Saddam may attack US troops with WMD during their advance into Iraq or at the gates of Baghdad.

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- Saddam may attack Israel with conventional weapons or WMD hoping for an Israeli response that would inflame the Arab street. An Iraqi CBW attack against Israel could prompt Tel Aviv to escalate the conflict—including a response in kind with CBW or the use of nuclear weapons—in addition to the deployment of Israeli forces to western Iraq to contain future attacks.

- Saddam may attack supporting states with WMD or conventional weapons to disrupt rear areas and to undermine local support. A successful CBW attack could temporarily overwhelm the medical facilities of some regional allies and would cause panic among the civilian populace.

- Iraqi agents or vessels may attempt to deliver biological, chemical, or radiological weapons to the United States.

- Saddam may order the destruction of oil infrastructure in southern Iraq attempt to slow the US military advance towards Baghdad. In January 1991, the Iraqi Army destroyed tankers, oil terminals, and oil wells in Kuwait—spilling approximately 9,000,000 barrels of oil onto Kuwaiti territory or into the Persian Gulf—forming a 600 square-mile oil slick.

- Saddam may order Iraqi forces to "scorch the earth" as they withdraw toward Baghdad, disrupting essential services and increasing refugee flows. Saddam would calculate that even if he were eventually removed from power, he would "bring down the house around him" and cause significant damage that the United States would be responsible for repairing in the aftermath of the war.

- Saddam and his loyal forces may withdraw into Baghdad, hoping to force a costly and bloody campaign that saps US will and builds international support for a diplomatic solution. This strategy assumes that US aversion to casualties, particularly in the densely populated Iraqi capital, would dissuade the United States from engaging in urban combat against Iraqi's best military forces (b)(3)

Tab D

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CENTRAL INTELLIGENCE AGENCY DIRECTORATE OF INTELLIGENCE

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19 June 2002

Saddam's Asymmetric Options in a Conflict With the US

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Saddam's Asymmetric Options in a Conflict With the US (b)(3)

Summary

Saddam recognizes that Iraq cannot adequately defend against a concerted US military effort to oust his regime, and could resort to a variety of asymmetric options to deter a US attack or diminish US military effectiveness once an attack is underway. The objectives of an Iraqi asymmetric strategy would be to decrease regional support for US efforts, undermine US national will to pursue regime change, and target perceived US military vulnerabilities.

- Iraq has several options—ranging from stoking the Israeli-Palestinian conflict to admitting inspectors—that it could employ in order to delay a US attack or to increase concern over collateral damage in the event an attack is underway.

- Saddam will have to consider the possibility that many of his more aggressive asymmetric options—such as attacking Israel or using WMD—could backfire and increase domestic and international support for US action to remove him. (b)(3)

An Iraqi asymmetric strategy poses several challenges for Washington, such as coping with Iraq's attempts to exploit regional concerns over the Palestinian-Israeli conflict and break out of its diplomatic isolation.

- Other Iraqi courses of action, such as attacking the Kurds or striking Israel, will test Washington's ability to respond forcefully in unexpected areas and keep any conflict confined to Iraq. (b)(3)

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Saddam's Asymmetric Options in a Conflict With the US

(b)(3)

Saddam recognizes that Iraq cannot adequately defend against a concerted US military effort to oust his regime, and could resort to a variety of asymmetric options to deter a US attack or diminish US military effectiveness once an attack is underway.

- Iraq's goal would be to undermine US national will to pursue regime change, decrease regional support for US efforts and for hosting US military forces, and target perceived US military vulnerabilities.

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- Saddam will have to consider the possibility that many of the more aggressive asymmetric options could backfire and increase domestic and international support for US action to remove him.

Saddam's options can be grouped under several categories typically associated with the term asymmetric approach:

- Information Operations
- Unconventional Weapons, Tactics or Concepts
- Conventional Military Actions

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- Weapons of Mass Destruction and Ballistic Missiles
- Terrorism

NESAF 02-001

Figure 1. *Saddam will likely resort to a variety of asymmetric options to counter a US attack to remove his regime.*

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While not comprehensive, a range of asymmetric options available to Saddam is listed below. These approaches should not be viewed as incremental, although Iraq's behavior during the Gulf war and subsequent coalition airstrikes suggests Saddam would bank on riding out US military action and would first exhaust diplomatic initiatives, including offering compliance with all UN obligations, to stop the United States short of its goals.

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Information Operations

Saddam is waging a diplomatic offensive to undercut international support for military action against Iraq. Baghdad's principal targets are Arab neighbors and UN Security Council member states.

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Stoke Israeli-Palestinian Conflict to Remove Arab Support for US Strikes

Saddam will continue to stoke—rhetorically and financially—the Israeli-Palestinian conflict, assessing that Arab rancor and Baghdad's role as champion of the Palestinian cause will lead regional governments to withhold support for US strikes on Iraq. Saddam undoubtedly calculates that the United States will not strike Iraq while the intifadah rages.

- Iraqi press continues to call for support for the Palestinians "using all means" and has characterized the Palestinian-Israeli and Iraqi-US conflicts as part of the same pan-Arab struggle.

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- Saddam judging that US regional allies would extort Washington to focus more on the Israeli-Palestinian crisis and may not grant basing or overflight privileges to US military assets until they perceive the United States is taking a more active role to resolve the crisis.

(b)(1)

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Issues for the United States: (b)(3)

- How will Washington address Iraq policy with regimes and populations more concerned about the Israeli-Palestinian situation?

- How is the United States prepared to deal with an upsurge in Israeli-Palestinian violence coincident with US military operations? (b)(3)

Convince Arab Audiences—Including Key Regime Supporters in Iraq—that Washington Intends to Divide Iraq and End Sunni Rule

Saddam could play on the uncertainty surrounding any potential successor regime imposed by the United States. Neighboring states are fearful of a fragmented Iraq in which Kurds or Shia may have more autonomy, or worse, their own independent state.

- While Tehran has an interest in seeing an old enemy removed, Iranian leaders remain concerned that a pro-US, anti-Iran government will be installed in Baghdad. Coming on the heels of the increased US presence in Afghanistan, US efforts to overthrow Saddam would heighten Tehran's fear of encirclement.

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Iraqi Sunnis—particularly Republican Guard members who would defend the regime against the United States—may decide to cast their lot with Saddam to avoid losing out to the Shia majority in a democratic government.

(b)(1)

(b)(3)

- Sunni Arabs probably will be suspicious of any successor governments drawn predominantly from the external opposition.

(b)(3)

Issues for the United States:

- How can Washington assure Iraq's neighbors that the benefits of regime change outweigh the risks?

(b)(1)

- What is the United States prepared to tell key allies about its vision for a post-Saddam Iraq

- What will Washington communicate to Sunni and Shi'a Arabs regarding the future of Iraq? How will we square our message to the ruling Sunni Arab elite with what we tell the majority Shi'a Arab population?

(b)(3)

Forge Closer Ties to Countries Likely to Host US Military

Over the past several months, Baghdad has tried to encourage Arab opposition to any US military action. Iraq was warmly received at the March Arab League summit, where it called for improved relations with Kuwait and Saudi Arabia. Saddam probably judged that offering concrete goodwill gestures would diminish the willingness of Riyadh and Kuwait to permit the United States to base operations against Iraq on their soil.

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- While not fulfilling a promise it made last month to repatriate Kuwait's national archives, Baghdad probably believes the appearance of cooperation is enough to stave off any military action in the short-term. As the potential for US military action grows, Baghdad is likely to make more concessions.

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Accede to UN Weapon Inspections
Saddam could relent on inspections to forestall an attack, believing that he could manage UN efforts on the ground.

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Saddam could hold off accepting inspections until US-led attacks were underway, calculating that Iraq could withstand initial air strikes. Baghdad risks losing control of a conflict if it waits too long to make a concession.

- Saddam tried this tactic unsuccessfully during the Gulf war when he waited until mid-February 1991 to offer Iraqi withdrawal from Kuwait.

- Saddam preempted imminent US strikes in mid-November 1998 by agreeing to resume UN inspections after ceasing cooperation with UNSCOM two weeks earlier.

(b)(3)

Issues for the United States:

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- How will Washington deal with an Iraqi offer to accept inspectors, especially without conditions?

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Unconventional Weapons, Tactics, or Concepts

(b)(3)

Faced with overwhelming US military superiority and an inability to procure new military systems due the UN arms embargo, Iraq will need to consider using its existing military or other national assets in a nontraditional manner. Baghdad's objective would be to create excessive casualties or environmental damage that would undermine both US national will and international support for targeting Iraq.

(b)(3)

Move Iraqi Military Assets Into Civilian Areas
Iraq will continue to protect key weapons systems and forces by exploiting US concerns over collateral damage. Baghdad will take advantage of schools, hospitals, mosques and other high-collateral damage areas to husband its forces and use propaganda to turn international opinion against US military action.

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(b)(3)

Mount an Urban Defense: Saddam could to portray Baghdad as the next US "Mogadishu," referring to the October 1993 battle in Somalia that left 18 US servicemen dead. Saddam takes a security risk in such a move, as military units are usually kept outside city limits to prevent coup attempts.)

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- Iraq could draw the Republican Guard into the outskirts of Baghdad in the hopes that US concern over casualties would force it to stop short of its goal of regime-change.

(b)(3)

- This strategy assumes that US aversion to casualties, particularly civilians in the densely populated Iraqi capital, would dissuade the United States from engaging in urban combat against Iraqi's best military forces.

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As hostilities approach, Baghdad can be expected to increase camouflage, concealment and deception measures.

- Press accounts of the depletion of US precision-guided munitions (PGMs) in previous conflicts likely convinces Baghdad that, while they might not be able to drain US stockpiles, it can make an operation against Iraq costly.

(b)(1)
(b)(3)

Halt Iraqi Oil Exports and Attempt to Enlist Other Oil Producers to Follow Suit

Baghdad's month-long oil export halt this spring was designed to portray Iraq as willing to sacrifice for the Palestinian cause and fuel international anxiety over oil prices. Iraq suspended oil exports from 8 April until 8 May to protest Israeli attacks on the Palestinians and called for other oil-producing countries to follow suit.

- Until the halt, Baghdad exported about 1.5 million barrels per day (4 percent of world exports) under the UN oil-for-food program. Previous Iraqi oil export halts had little impact on prices and Iraq's leverage is limited because other exporters have ample spare capacity.

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- Saddam could cut off oil supplies to Jordan or Turkey—both heavily reliant on the Iraqi oil trade—to punish them for supporting US action against Iraq. Saddam has already threatened economic retribution against neighbors who side with Baghdad's enemies.

Figure 4. *On 8 April, Baghdad suspended oil exports for one month under the pretext of protesting Israeli attacks on the Palestinians. Saddam could revisit this option in an attempt to deter US action.* (b)(3)

NESAF 02-004 (b)(3)

Issues for the United States: (b)(3)

- Is Washington prepared to compensate countries like Jordan and Turkey in the event of an Iraqi oil cutoff?

- How will the United States counter Iraqi efforts to employ the oil weapon with major oil producers or consumers?

- Under what conditions should the Washington consider drawing down the Strategic Petroleum Reserve? (b)(3)

Release Oil Into the Persian Gulf or Destroy Iraqi Oil Infrastructure

As he did during the Gulf war, Saddam could cause an environmental disaster by releasing oil into the Persian Gulf or by destroying Iraqi oil infrastructure in an attempt to slow the US military advance towards Baghdad.

- In January 1991, the Iraqi Army destroyed tankers, oil terminals, and oil wells in Kuwait—spilling approximately 9,000,000 barrels of oil onto Kuwaiti territory or into the Persian Gulf—forming a 600 square-mile oil slick. Four hundred miles of the western shoreline of the

(b)(3) Gulf was oiled. Tarmats up to 12 inches thick formed on some of the Gulf beaches. Over a million barrels of oil were removed from the Arabian Gulf by April 1991 by cleanup operations.

(b)(3) Saddam would calculate that even if he were eventually removed from power, he would "bring down the house around him" and cause significant damage that the United States would be responsible for repairing in the aftermath of the war.

(b)(3) ***Issues for the United States:***

- Is the US military prepared to strike Iraqi oil terminals as it did in 1991 to halt the flow of Iraqi oil?

(b)(3)
- How can Washington help regional states cope with massive oil spills in the Gulf or Iraqi actions that damage Gulf oil facilities?

Use Human Shields or Hostages in Likely Targeted Facilities

Saddam could deploy civilians as "human shields" at military and industrial facilities, as well as other potential US targets. Saddam used this ploy during a confrontation over UN inspectors in February 1998, when the regime invited Iraqi civilians into Saddam's palaces.

- After the United States targeted an Iraqi Intelligence Service command and control facility in February 1991—that also housed IIS civilian dependents—Baghdad exploited the civilian deaths in the media prompting Washington to cancel all strikes against central Baghdad for five days.

(b)(3)
- Saddam could take UN personnel hostage in an attempt to start diplomatic talks over their fate to delay US military action.

Figure 5. *During a confrontation over UN inspectors in February 1998, Saddam used human sheilds to protect his palaces and other potential targets.* (b)(3)

NESAF 02-005 (b)(3)

(b)(3) ***Issues for the United States:***

- What public diplomacy actions can Washington and its coalition partners undertake to demonstrate how Iraq's actions disregard the laws of armed conflict? (b)(3)

(b)(3) **Conventional Military Actions**

As with most potential adversaries in the post-Cold War environment, Baghdad has few conventional military options to counter a US attack. Saddam could choose to initiate military operations to throw the US off its timetable—as he tried and ultimately failed to do in the late January 1991 attack against the Saudi town of Al Khafji.

- Saddam might consider a preemtive military move would force Washington to respond in an arena of his choosing and create a new political and military reality that would frustrate the longer term US objective of regime change.

(b)(3)

Preempt a US Move by Attacking the Kurds

Iraq could make a limited move against opposition concentrations in northern Iraq that might serve as a base for future US operations. (b)(1)

(b)(1)

- As he did during his August 1996 move on Irbil, Saddam might gamble that the United States would have limited options to repel his offensive. Saddam would cast the move as an internal security matter to undermine international support for a US military response.

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- Regular Army units could undertake limited raids against the Kurds without warning, but a more concerted effort would require the movement of Republican Guard forces

While such a move may invite international condemnation as Saddam could be portrayed as the aggressor, again repressing his own populace, this option presents several challenges to Washington.

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- US inability to quickly stop the Iraqi aggression would likely trigger a refugee crisis for Turkey and other countries. In addition, unless the United States is able to respond to Iraqi moves against the Kurds, opposition elements within Iraq would resolve that Washington has abandoned them

(b)(3)

Issues for the United States:

- Is the US military positioned to counter an incursion by Iraqi ground forces into Kurdish-controlled territory?

- Given several low-level skirmishes between Iraqi forces and the Kurds in the north, what is Washington's threshold for intervening in northern Iraq, given stated US redlines?

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- How will Washington counter charges that US military intervention on behalf of the Kurds is the first step in a US policy to break up Iraq?

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Attack A High-Value US Military Asset

Based on its poor performance during the Gulf war, Baghdad may believe that US military planners expect that Iraq's military is incapable of threatening US forces. Iraq may attempt to target a high-value US military asset early in the conflict to demonstrate the high cost of a military action.

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Saddam may calculate that US resolve to remove his regime would be altered by a catastrophic loss. This option could backfire on Saddam, as it could prompt the US leadership and public to become more resolved to remove him from power.

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Conventional Strike Against Israel
As he did during Desert Storm, Saddam could attack Israel in an effort to draw it into the conflict, rally the Arab public, and portray US military actions as a US-Zionist plot. Saddam could use aircraft or his covert force of Scud-variant missiles, armed with conventional warheads.

- Iraq would risk international condemnation if it used proscribed ballistic missiles to strike Israel, and Saddam may calculate that he could achieve the same objective with less risk by using aircraft.

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Any retaliatory Israeli airstrike or detected military cooperation between the United States and Israel would be portrayed to the Arab street and international community as confirmation of a US-Zionist plot to target Arab regimes.

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Although Saddam knows such an attack would elicit a US and/or Israeli response, he might believe that the political gains would outweigh the risk of retaliation.

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Weapons of Mass Destruction (b)(3)

Saddam would consider attacking US interests with weapons of mass destruction (WMD) if he believed he had exhausted all other options and would not survive an effort to remove his regime or if he thought he could do so covertly so that Iraq's hand in the attack was not apparent.

- Baghdad's use of WMD or proscribed ballistic missiles in other, less terminal scenarios would belie a decade of claims that it no longer has such weapons, violate explicit US warnings, and increase Washington's resolve while resurrecting the anti-Iraq coalition.

- Saddam could be more willing to use WMD before the 'endgame' scenario if he were convinced it could not be traced back to Iraq. Given the consequences of use against the United States and the fact that Iraq probably would be under suspicion for any incident of WMD use—whether Baghdad were involved or not—we assess Saddam's threshold for achieving deniability is high. (b)(3)

CBW Attack Against Israel or US Regional Allies
Saddam could launch CBW attacks against Israel or our regional allies hosting US military troops. An attack against US staging areas or population

centers in the Gulf would be intended to give US military planners pause, punish those nations who were supporting his ouster, and signal that he had abandoned hope of marshalling international diplomatic pressure to deter the United States.

- Saddam deployed chemical and biological weapons during the Gulf war

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Regional allies would require US assistance in chemical defense equipment and training in decontamination of targeted facilities. A successful CBW attack could temporarily overwhelm the medical facilities of some regional allies and would cause panic among the civilian populace.

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An Iraqi CBW attack against Israel could prompt Tel Aviv to escalate the conflict-

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Figure 7. *Saddam would consider attacking US interests with weapons of mass destruction (WMD) if he believed he had exhausted all other options and would not survive an effort to remove his regime.*

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Issues for the United States:

- What warnings is Washington prepared to give Iraq on the consequences of any use of WMD against regional states?

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- Is Washington prepared to offer medical assistance to regional states that are targeted with Iraqi WMD?

CBW Attack Against US Forces in Iraq

Saddam's elaborate 11-year denial and deception campaign to deny a full accounting of Iraq's WMD programs underlines his commitment to maintain a capability for strategic deterrence. In the event US forces enter Iraq and begin to rapidly advance on Baghdad, there is a growing likelihood that Saddam will consider using CBW against advancing US troops.

- Iraq used chemical weapons extensively during the Iran-Iraq war to defend against Iranian human wave assaults.

- The decision to use CBW lies with Saddam

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- Saddam's use of CBW is contingent upon his orders being followed, potentially difficult as US forces closed in on his regime. Iraqi officers could disobey orders

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(b)(3) ***Issues for the United States:***

- What warnings is Washington prepared to communicate to Saddam and Iraqi government officials regarding the consequences of WMD use? What channels should be used?

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Terrorism (b)(3)

Terrorist Attack Against US Bases or Forces in the Region
If Saddam believes the United States is determined to remove him, he could launch a pre-emptive attack against US staging areas, including Kuwait, Bahrain, Saudi Arabia, or Qatar to complicate US planning and undermine US resolve.

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- Saddam probably would claim his actions were defensive, hoping that his audacity at throwing the first punch would rally the Arab world behind him.

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Once US military operations are underway, Saddam could attempt to target US bases and not allow the US military to operate with impunity. His ability to strike US assets while operations are underway could be limited, but a successful attackwould prompt calls in the US and host nations for increased security measures. (b)(3)

Attack Neighboring Regimes to Undermine Support for US Military Operations
In a similar vein, Saddam could target the leadership of nations providing the United States basing or overflight privileges. Saddam would hope to create a domestic crisis or inflame public opinion against their leadership—portraying them as "US puppets" while he is the only Arab leader to challenge the United States.

- Host nations may request increased security assistance, place restrictions on US operations or, in a worse case scenario, ask US to remove forces. (b)(3)

Attack Targets in CONUS to Undermine US Public Support for War
After witnessing US actions in Afghanistan, Saddam may calculate that attacking the US homeland or targets in Europe, Asia, and other areas in the Middle East would increase US resolve to remove his regime, and may hold these attack options for later in hostilities.

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Issues for the United States:

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Appendix

Asymmetric Options—Common Definitions and Examples (b)(3)

Faced with overwhelming US military and technological superiority during this period, potential adversaries may be driven to "asymmetric approaches" to counter US objectives. While these strategies will not close the military gap with the United States, they may be effective in preventing decisive employment of US forces. Numerous US and foreign defense planning documents and professional and academic writings published since the collapse of the Soviet Union have noted the growing likelihood that asymmetric threats will dominate near-term conflicts. Although the unclassified literature contains a range of definitions for asymmetric operations, most publications focus to varying degrees on the following six categories:.

- ***The "Big Three":*** Weapons of Mass Destruction, Terrorism, and Information Warfare.
- ***Unconventional Weapons, Tactics, or Concepts:*** Examples include creating excessive casualties, violating the laws of warfare, or environmental or economic sabotage.
- ***Conventional Tactics:*** Battles between dissimilar forces such as submarines versus ships.
- ***Adaptive Current Technologies:*** Examples include counterstealth and precision-guided munition decoys.
- ***"Wild Cards":*** Unpredictable events such as loss of allies or overthrow of friendly regimes

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- ***Transnational Threats:*** Examples include organized crime, illegal drug trade, or uncontrolled migration.

Although a common definition has yet to emerge, for the purposes of this study, we have determined that most discussions regarding this issue are generally consistent with the following:

Asymmetric Approach—An adversary's use of innovative or nontraditional strategies, tactics, or technologies in order to exploit the vulnerabilities and avoid the strengths of an opponent during a crisis or as tensions escalate toward a military confrontation. An approach intended to deter or constrain an opponent's initiative by undermining national will or limiting the effectiveness of critical weapon systems or other national security assets. They include:

- Military or other hostile actions, as well as coercive humanitarian, economic, or political means.
- Actions for which the opponent lacks a ready counter because of political, economic, or military constraints. (b)(3)

Foreign approaches designed to present a nontraditional threat to an opponent are "asymmetric by intent." These include ***limited responses***--intended to deter or constrain US military interventions using means that fall below traditional or proportional force-on-force operations--as well as ***disproportionate responses***, involving an adversary's use of military means well above the traditional or expected norm for a confrontation. (b)(3)

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SADDAM'S ASYMMETRIC OPTIONS TO COUNTER US MILITARY ATTACK

	ASYMMETRIC OPTION	SADDAM'S CALCULUS	RISK TO SADDAM	LIKELIHOOD	IMPLICATIONS FOR US/COALITION
WMD/Ballistic Missiles	CBW attack against Israel or regional US allies	Give US military planners pause and punish nations supporting his ouster	Loses international support by revealing CBW capability he has denied for a decade	Low initially, increases as US troops move closer to Baghdad	Regional allies would require US assistance in chemical defense and in decontamination.
	CBW attack against US forces inside Iraq	Slow US military advance towards Baghdad; exploit US aversion to casualties	Loses international support; hardens US resolve to oust him	Low initially, increases as US troops move closer to Baghdad	Would slow military advance towards Baghdad; Heighten concern of military personnel about long-term health problems
	Covert CBW attack against US interests	Distract US from targeting Iraq	Iraqi role uncovered or strongly suspected, hardens US resolve to oust him	Low-to-Medium	Difficult to prove Iraqi involvement
Terrorism	Attack US bases or forces in region	Learned lesson from Gulf war: Don't let the US operate with impunity	A preemptive attack would make him the aggressor and give the US *casus belli*	Medium-to-High	Would require increasing security at installations in region
	Attack neighboring regimes	Ignite the Arab street against their leadership		Medium	Host nations would request increased security assistance, and could restrict or forbid US operations
	Attack targets in CONUS	Distract US attention; undermine US public support for war	US public becomes more resolved in support of the war	Low	A successful attack would undermine public confidence in security measures
Information Operations	Accede to UN weapon inspections	Delay US actions, protract negotiations, and obstruct inspectors later	UNMOVIC reports Iraqi intransigence to UNSC and international support erodes	Medium; increases as US military intervention approaches.	Extreme international pressure for negotiated settlement. US has little control over UNMOVIC and inspections
	Stoke Israeli-Palestinian conflict	Delay or prevent US move		High	Regional allies may not grant basing or overflight privileges to US military assets
	Convince neighbors and key regime supporters that the US intends to divide Iraq and end Sunni rule	Neighboring states fear a divided Iraq; Sunni minority rallies around Saddam	Minimal	High	Difficult to balance concerns of ruling Sunni elite and dispossessed Shi'a majority
Unconventional Strategies/Tactics	Move Iraqi military assets near civilian areas	US collateral damage concerns allow Iraq to preserve key weapons systems and forces	International condemnation	High	Demonstrate Iraq's use of historic, religious, or civilian facilities to convince international community that collateral damage incidents are of Saddam's making
	Disperse military units inside urban areas	Exploit US aversion to casualties	Military units usually kept outside Baghdad city limits to prevent coup attempts	High	Publicize Iraq's disregard for laws of armed conflict
	Employ dummy equipment and decoys	Make military intervention as costly as possible	Minimal	High	Depletion of precision-guided munition inventory
	Halt Iraqi oil exports, release oil into the Persian Gulf, or destroy Iraqi oil infrastructure	Make military intervention as costly as possible, and hope that ecological disaster slows US action	International condemnation, past Iraqi export cutoffs had little effect	Medium	Work with oil-producing countries to ensure they will offset any losses
	Use human shields or hostages	US collateral damage concerns allow preservation of key weapons systems and facilities	International condemnation	High	Publicize Iraq's disregard for laws of armed conflict
Conventional Military Options	Attack Israel with aircraft or conventionally armed Scuds	Provoke an Israeli military response and rally the Arab public	No Israeli response, Iraq seen as aggressor, covert Scud force revealed	Medium-to-High	Potential Israeli military response widens conflict
	Attack the Kurds	Throw US off military timetable. Remove northern Iraq as opposition base	Iraq seen as the aggressor	Low-to-Medium	Kurds unable to counter Iraqi forces, prompting a refugee crisis. Absent direct US response against Iraqi forces that are attacking the Kurds, opposition forces may perceive lack of US resolve
	Attack high-value US military assets	Alter US timetable	US becomes more resolved to remove him from power	Low-to-Medium	Potential hostage issue

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Tab E

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CENTRAL INTELLIGENCE AGENCY DIRECTORATE OF INTELLIGENCE

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07 August 2002

The Perfect Storm: Planning For Negative Consequences of Invading Iraq

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The Perfect Storm: Planning For Negative Consequences of Invading Iraq

Summary

The worst-case scenarios that might emerge from a US-led regime change will challenge US leaders and military planners to cope with three phases in the conflict:

- before US military action
- during initial US ground operations
- during later phases of US campaign and occupation

The US will face negative consequences within Iraq, the region and beyond which could include:

- Anarchy and the territorial breakup of Iraq;
- Regime-threatening instability in key Arab states;
- A surge of global terrorism against US interests fueled by deepening Islamic antipathy toward the United States.

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- Major oil supply disruptions and severe strains in the Atlantic alliance.

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Scope Note

CIA's Office of Near Eastern, South Asian, and African Analysis prepared this assessment to respond to a National Security Council tasking on worst-case scenarios that could arise as a result of a US invasion of Iraq. The spirit of the paper reaches beyond what we normally would assess as plausible. Instead, it steps outside the box to look at a number of situations that, when taken separately or together, could complicate US efforts in a campaign against Iraq. This assessment also draws upon general insights

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The Perfect Storm: Planning For Negative Consequences of Invading Iraq (b)(3)

Before US Military Action

In Iraq. The internal situation in Iraq could become increasingly chaotic if one or some of the following instances were to occur.

A group of Sunni generals stages a "coup" and preempts a US attack by installing a military government, claiming that it is not affiliated with the policies of Saddam's regime. World leaders urge Washington to forgo an invasion, arguing that the need had gone, and quickly establish diplomatic relations with the new Baghdad government.

- Despite reporting that suggests Saddam may have orchestrated the generals' coup himself, nearly unanimous international pressure makes Washington's plans for a ground campaign unfeasible.

- UN Security Council (UNSC) consensus in favor of lifting sanctions against Iraq isolates Washington and emboldens Saddam to pursue WMD behind the scenes. (b)(3)

Saddam's security forces round up and slaughter hundreds of Shia civilians, declaring them part of the US-backed opposition and blaming Washington for their deaths. US forces—not yet in a position to respond—are unable to prevent the killings, and world opinion turns against the United States for not intervening. (b)(3)

In the Region. As regional expectations for a US ground campaign in Iraq grow, Arab publics react violently to perceived US-Israeli collusion in a war against Islam. (b)(3)

Palestinian militants organize large-scale protests in the territories in support of Saddam that turn into violent clashes with Israeli security forces, leaving tens of Palestinians killed, including many youths. Palestinian militants escalate attacks against Israelis as they did in spring 2002, especially inside the Green Line, seeking to overwhelm an overextended Israeli security apparatus. Large numbers of Israeli civilian casualties from terrorist attacks compel Sharon to reoccupy Palestinian towns in the West Bank, expel Arafat abroad and terrorist families to Gaza, and annex the security zone along the Green Line. The spiral continues as the Israeli incursions and expulsions prompt more clashes and an increase in militant attacks staged out of Gaza.

- Sharon, faced with increased public pressure to counter continued extremist attacks, orders an incursion into the Gaza Strip, resulting in substantial IDF and Palestinian casualties, including significant numbers of civilians. (b)(3)

Hizballah launches rocket attacks from Lebanon into northern Israel, publicly declaring its support for Palestinian resistance. Israel responds by striking Hizballah training and weapons storage facilities and Syrian military targets in Lebanon. Hizballah's attacks continue with longer-range Fajr rockets, prompting Israel to attack Lebanese infrastructure targets and military targets inside Syria, such as air defense sites.

- Rising civilian casualties along the border prompt IDF strikes against Syrian economic, leadership, and WMD targets.

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- Threatened with destabilization by the Israeli offensive, Syria lashes out with artillery and ballistic missile strikes on Israel, raising the specter of a general war.

During Initial US Ground Operations

In Iraq. Baghdad orders its forces to launch chemical and biological attacks against advancing US forces, inflicting heavy casualties. Alternatively, Saddam could use a radiological weapon or "dirty" bomb to deny Iraqi territory to US troops.

- A WMD attack against US forces—whether preemptive or last resort—causes a backlash of anti-war protests and international accusations that the United States provoked the use of WMD.

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- Radiological and certain biological weapons can make an area uninhabitable for years.

On their way to Baghdad, ***US forces encounter heavy opposition from the Iraqi populace***, which has taken up arms against what it perceives to be "Western colonialists." As a result, US forces are unable to turn to the indigenous population for military support and instead find themselves isolated and under attack.

- Masses of armed civilians attacking the US military in Iraqi population centers ensnare US forces in a protracted urban war.

- Members of the Shia majority conduct reprisal attacks against Sunni tribes, creating a rear-area security nightmare for US forces.

- Baghdad complains to the United Nations about US crimes against humanity, detailing the alleged US slaughter of innocent civilians and disseminating "corroborating" television footage of casualties.

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Saddam conducts a scorched-earth campaign, destroying Iraqi oilfields and dams and devastating the country economically. Blowing up oil wells and key surface facilities—gas-oil separation plants, pipelines, pump stations, tank farms, refineries, and the Mina al Bakr export terminal—extinguishes Iraq's only source of foreign exchange and requires billions of dollars and several years to repair.

- Deprived of oil revenues, Iraq is unable to afford the $3 billion in food and medicine that it imports annually, precipitating a humanitarian crisis.

- Flooding from destroyed dams displaces thousands and affects water supplies to Baghdad and southern cities, sharply reducing agricultural output.

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In the Region. US forces neutralize most of Saddam's WMD missile capability, but ***some Iraqi WMD missiles reach Tel Aviv, causing hundreds of deaths and widespread terror.*** Israel deploys special forces units into western Iraq to "Scud hunt" while air strikes hit Iraqi military, WMD, and leadership facilities—operations that require frequent over flights of Jordanian and Saudi airspace.

- When Iraqi WMD attacks persist, Israel retaliates against missile operating areas, WMD facilities, and command-and-control targets.

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- Israel against military and leadership facilities when an Iraqi WMD attack impacts Tel Aviv.

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Massive demonstrations in Jordan against the war and against the monarchy—because of perceived government complicity in the US attack on Iraq and acquiescence in Israeli military moves—topple the monarchy and a nationalist/Islamic regime seizes power, risking military confrontation with Israel. ***Similar rioting in Egypt*** forces Cairo to "suspend" its peace treaty with Israel. ***Violent protests sweep Saudi Arabia and other Gulf states***, which quickly turn against leaders perceived as aiding the actions in Iraq and refusing to confront Israel. In an effort to placate the rioters, Saudi Arabia and other Gulf oil producers suspend oil sales to the United States and demand the withdrawal of US forces.

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- In a repetition of the 1973 oil embargo, Arab producers halt exports to the United States and reduce output five percent per month.

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- Non-Gulf producers within OPEC, such as Venezuela and Nigeria, are unable to replace more than a fraction of the lost output

Considering unilateral US actions particularly threatening, hardliners in **Iran**—already alarmed at the US presence in Afghanistan—radicalize and gain new power. Tehran ramps up support to its proxies in Iraq and the Levant, encouraging them to attack US forces and to undermine US operations.

- Hardliners in Tehran rally the Iranian populace against US operations in Iraq, creating an increasingly hostile and critical environment on the border.

- Tehran uses its proxy of Iraqi Shia exiles and deserters the Badr Corps, to subvert US goals in Iraq.

- Iran exploits its ties to the Kurdish groups in northern Iraq and pushes the region into factional fighting. A humanitarian crisis explodes that requires major international attention.

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- Tehran reaches out to groups inclined than to oppose a US presence, such as Ansar al-Islam.

- Tehran increases materiel support to Palestinian rejectionists and intensifies pressure on Lebanese Hizballah to make attacks into Israel.

In the World. Sharp and sustained disruptions to the energy markets resulting from the US intervention in Iraq devastate the EU economy. The EU depends on imports for more than 70 percent of its oil needs, and nearly a third of these oil imports come from the Persian Gulf region. As oil prices skyrocket and Gulf supplies plunge, the EU's current phase of slow growth turns into recession.

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- The heavy damage to oil facilities leads to higher world oil prices—reaching $55 per barrel within a month.

Thirteen of the ***15 UN Security Council members criticize US action in Iraq***, perceiving the operation to be excessive in terms of civilian casualties and infrastructure damage. Shrugging off US veto threats, the majority wins propaganda points and isolates the United States by forcing votes on a range of options aimed at pressuring Washington to suspend military operations, including resolutions condemning the US action, slapping sanctions on the United States, and instructing the UN Secretary General to initiate an independent peace mission.

- Critics of US policy in the UN General Assembly are able to muster enough votes to pass a resolution censuring Washington and calling on member states to embargo US goods and cut off oil exports to the United States.

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Pakistani President Musharraf feels abandoned by the US invasion of Iraq that has left him exposed to dissenting voices within the military and domestic critics. Diverted Western attention to Iraq makes Musharraf's position on Kashmir untenable and he reverts to Pakistan's traditional support to militant infiltration, risking renewed tensions with India.

- Secular and Islamic critics of Musharraf label US actions in Iraq as "anti-Muslim" and extend the criticism to him as a "lackey" of the US.

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US action against Iraq markedly raises the threat of violence against US citizens and facilities in many parts of Southeast Asia. Large, violent anti-US demonstrations outside the Embassy in Jakarta materialize quickly, and ***Indonesian*** extremists call on fellow Muslims to "sweep" US citizens from the country. Insurgent groups in the ***Philippines*** target US soldiers and civilians. Radical Islamic elements in Southeast Asian countries renew their claims that Washington is waging a war against Islam, undermining election prospects of secular leaders in Indonesia and ***Malaysia***.

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Later Phases of US Campaign and Occupation

In Iraq. The Kurds declare their independence, enraging Ankara and Tehran and dashing any immediate hopes of maintaining the territorial integrity of Iraq. Turkey sends troops to occupy the major towns in northern Iraq, worrying Tehran and prompting the Kurds to conduct guerrilla raids against the Turks.

- Northern Iraq becomes increasingly unstable as the Kurdistan Democratic Republic and the Patriotic Union of Kurdistan fight each other for control of territory and resources.

- Having established their presence in the north, the Turks are slow to leave. Turkish nationalists—who believe the Mosul-Kirkuk area was wrongly awarded to Iraq in 1926—reject calls to withdraw unless Turkey receives compensation. Ankara insists on retaining troops in the north until allied forces consolidate control over Iraq and the outlines of a successor regime become clear.

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- Beyond the loss of exports under Oil-For-Food and imports of illicit Iraqi oil, the economic costs for Ankara multiply as Turkey's $10-billion tourism industry falters.

Saddam survives and retreats with Tikriti loyalists, obliging US forces to search for him door-to-door. When he continues to elude his would-be American captors, pressure to find him mounts as Arab publics rally in his support.

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- Syria agrees to host Saddam and refuses US extradition requests.

Al-Qa'ida operatives take advantage of a destabilized Iraq to establish secure safe havens from which they can continue their operations. The Islamic Kurdish group Ansar al-Islam in northeastern Iraq provides the initial relocation site for al-Qa'ida.

- As Ansar takes advantage of Kurdish in-fighting to expand its territory and collaborate with al-Qa'ida, terrorists attack US forces in Iraq and destabilize the new Iraqi government.

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In the Region. Judging that a new regime in Baghdad will be pro-US and anti-Shia, Tehran works to replace it with one friendly to or tolerant of Iranian policies.

- ***Iran*** forges strong links with the Supreme Council of the Islamic Revolution in Iraq to develop leverage against potentially unfriendly future governments.

- Iran develops stronger ties between Iranian and Iraqi Shia to broaden its foothold in Iraqi religious city centers and gain influence in post-Saddam Iraq.

- Iran moves some of the Badr Corps' infrastructure from inside Iran into southeastern Iraq and establishes a Shia enclave that is designed to achieve power similar to Syria's control over Lebanon. Iraqi soldiers fleeing into Iran are integrated into the Badr Corps to sustain it as the primary Iraqi opposition force.

- Pursuing a strategy similar to that followed in Afghanistan, Iran uses its Qods Force to establish a network of surrogates among Shia oppositionists in Iraq and tries to buy influence with tribal leaders with military, financial, and humanitarian aid.

- Tehran takes advantage of the chaotic situation in Iraq to attack the Mojahedin e-Khalq (MEK) and rids itself of a longstanding security threat.

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As fighting leads to major increases in regional violence, political chaos, and terrorism, ***European*** confidence in US leadership plummets and NATO loses much of its effectiveness as a major security institution. European Allies accuse the United States of acting without sufficient prior warning and consultation with them.

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- The fighting radicalizes Muslim populations in Europe and produces more terrorist recruits for operations against the United States.

- Prospects dwindle for the European Allies' acceptance of US proposals for a greater NATO role in counterproliferation and out-of-area operations, while hostility to US preemptive strategies increases.

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- European countries are reluctant to provide peacekeeping troops for Iraq and hesitant about following the US lead in dealing with other destabilized areas.

A diversion of US military resources to Iraq from ***Afghanistan*** derails the Bonn process and tips Afghanistan into civil strife, as UN and other coalition forces are unable or unwilling to increase their presence in response. President Karzai currently relies on the International Security Assistance Force (ISAF) to provide stability in the capital and minimize challenges to the fledgling Transitional Authority, but ISAF's limited mandate precludes its assumption of such US activities as pursuing terrorists and working with regional figures to promote stability in the provinces. Several actors take advantage of the lack of US focus to pursue independent agendas.

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- Other prominent figures sidelined from the central government—such as radical Islamic activist Gulbuddin Hikmatyar and former Taliban minister and eastern strongman Jalaluddin Haqqani—raise an armed opposition to Kabul.

- Taliban remnants—supported by al-Qa'ida—take advantage of the sparser coalition presence to step up attacks on the central government in hopes of restoring their power.

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Reduced support from the United States and the international community results in unchecked narcotics cultivation, processing, and trafficking in Afghanistan. Leaders at all levels of government disillusioned by their perceived abandonment by the US, abandon US counternarcotics and counterterrorism goals and foster an environment where local terrorim and drug-related activities flourish.

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Islamic political parties in **Pakistan**, already unhappy with Islamabad's siding with Washington on counter-terrorism, and secular political parties disenchanted with Musharraf, capitalize on US action in Iraq by mounting violent demonstrations.

- When violence becomes general and spreads to non-American targets, senior generals encourage Musharraf to step down, as happened in 1969 with General Ayub Khan. Meanwhile, a charismatic figure exploits public anger to rally a national movement that takes Pakistan to the brink of an Islamic revolution.

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Cataclysms: Anticipating Possible Wild Card Threats

As the Iraq campaign unfolds, the United States could face any of several out-of-area major shocks. These could include: Afghan President Karzai is assassinated; the United States suffers a major terrorist attack; Iran erupts in violent domestic demonstrations; Chinese and Taiwanese forces clash.

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Averting Disaster: Possible US Options

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In spite of the volatility and randomness of many of these scenarios and the ability of one event to spur unpredictable negative consequences for US interests, Washington retains the political leverage and military

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clout in the region to better the odds. Preempting and offsetting the kind of uncoordinated, self-interested actions by regional states that would fuel a worst case will hinge on bolstering the confidence of these states in Washington's ability to provide near-term security and economic compensation and, over the long-term, to sustain a stable regional order after Saddam. This might be facilitated by the creation of a discreet de facto coalition where partners and neutral parties contribute mostly by refraining from escalatory anti-US action and—for some—by maintaining close, low-profile coordination with Washington. The following US near-term tactical moves would resonate well in the region:

- Public guarantees of significant US military force to counter the Iraqi missile threat to Israeli territory and to reduce the odds of an Israeli move into western Iraq;

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- Concrete US diplomatic steps toward Arab-Israeli peace

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- Major political and economic aid to Turkey.

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- Cash infusions to Jordan to avert potentially destabilizing cuts in spending, more overseas borrowing, and the exhaustion of Jordan's foreign exchange reserves;

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- Public softening of US statements on Iran and back-channel assurances to Tehran on the duration and extent of US force deployments—especially in the Gulf.

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Undergirding these tactical measures would be a clear strategic vision to mollify and encourage wary regional US allies—each with different priorities for a post-Saddam Middle East. Communicating US plans and strategic intent to key Arab states, Turkey, and Israel before the onset of hostilities could help deter a wave of chaotic unilateralism and could help reduce the extent of destabilizing public protests. At a minimum, regional states would seek assurance that the removal of Saddam does not lead to proxy competition among rivals for the spoils of Iraq, as the collapse of Lebanon did in the 1980s. Disorder and deepening anti-US sentiment in the wake of a trouble-beset US invasion would be a boon for Islamic radicals

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Tab F

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CENTRAL INTELLIGENCE AGENCY DIRECTORATE OF INTELLIGENCE

12 August 2002

Economic Consequences of a War With Iraq

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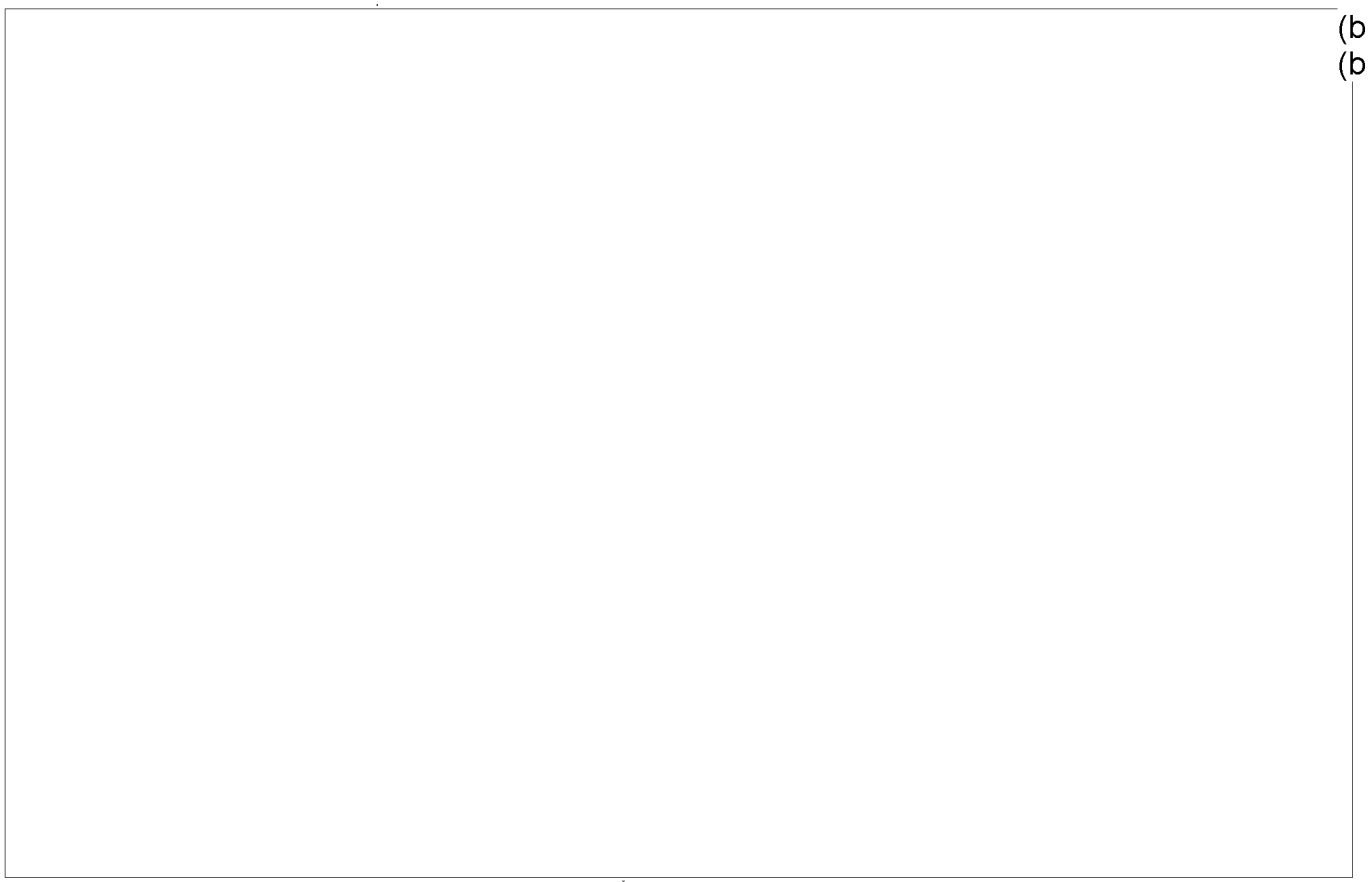

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Economic Consequences of a War With Iraq

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A US effort to remove Saddam Hussein from power in Iraq and create a non-threatening regime shorn of weapons of mass destruction is likely to impose significant economic costs on the United States and negatively affect some Middle Eastern economies and the world at large if the war goes badly.

- An Iraq war starting next January could drive down US economic growth in 2003 by as much as two percentage points if events fare poorly, although the impact could be negligible if the war ends quickly.

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- The actual economic impact will depend on the course of the war—on US actions, Iraqi responses, and the reaction of the rest of the Muslim world.

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Scenarios for an Iraq War

In this paper, we lay out three scenarios ranging from an easy US victory to a hard-won US victory accompanied by regional turmoil. The overall economic impacts range from minimal to global recession. In all three scenarios—which launch in January 2003—we focus on the direct and indirect costs of the war to individual countries.

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Scenario 1: Decisive Victory.
This scenario assumes Saddam Hussein is ousted after a month of violent turmoil, followed by a US continued presence to guarantee several years of stability to eradicate all vestiges of Saddam's WMD program. Arab neighbors are greatly relieved to see Saddam gone and the war over so painlessly. Neighboring regimes are not seriously threatened, there are neither significant spillovers of violence from the war nor major refugee flows, and terrorist attacks outside the region do not increase.

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Economic impact. A short, victorious war has only minimal short-term economic effects and leads to healthier long-term growth in most of the region and beyond. World oil prices spike to $45 a barrel for a brief period because of the uncertainty and a cutoff in Iraqi oil exports even though other producers offset most of the 2 million barrels per day (b/d) loss from Iraq.[1] Oil prices quickly return, however, to the pre-war level once Saddam falls and the war ends. The new regime quickly restores Iraqi oil output to the pre-war level, and other producers reverse their output rise to restore the status quo ante. The temporary oil price spike has virtually no impact on global economic activity.

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The United States has to maintain substantial troop and logistic presence in Iraq and in staging areas in Turkey and the Gulf for an extended period, which imposes substantial direct costs to the US economy but probably not enough to have any noticeable macroeconomic impact. The US economic recovery proceeds with only a brief setback in the first quarter of 2003.

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The brief spike in oil prices combined with the minimal nature of the conflict ensures that impact on Western Europe, Japan, and the rest of the OECD is small. The Europeans and Russians worry that the

[1] Iraq's current oil exports total about 1.4 million b/d, including amounts smuggled outside the UN oil-for-food program to neighboring states. This paper assumes exports increase by early next year as an ongoing pricing dispute with the UN eases.

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This assessment was prepared by the Offices of Transnational Issues and Near Eastern, South Asian, and African Analysis. Comments and queries are welcome and may be directed to the Chief, OTI, or the Chief, NESAF,

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advantage offered by US *de facto* governance of Iraq will give US firms an inside track for infrastructure and oilfield development contracts.

- Iraq's economic situation remains much the same initially, although GDP increases as the new government begins to export its full capacity of 2.2 million b/d. Infrastructure rehabilitation is slowed by external debt obligations and outstanding UN compensation fund claims.

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- Turkey seeks to cope with a decline in tourism, and a shock to investor confidence that pushes up interest rates on government debt. After a few months, Turkey begins to benefit, as trade returns to normal levels and Turkish firms win contracts for reconstruction work in Iraq.

- Iran does well at helping provide goods and services for Iraq as it starts to recover from decades of Saddamism.

- The economies of Israel and the Palestinian areas are little affected, and there is no immediate impact on the course of the ongoing *intifada*.

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- Jordan and Syria are hurt economically by the loss of heavily discounted oil flows from Iraq and by an influx of refugees from Iraq.

Oil prices weaken and, after 18 months or so, fall to $15 per barrel as Iraqi oil production and exports expand, despite production cuts by OPEC. Lower oil prices boost OECD economic prospects but worsen economic and political difficulties for some key OPEC producers.

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Oil Prices During the Gulf War

The Gulf war caused the last major oil supply disruption in the world oil market, and the experience from 1990-91 helps illustrate the potential for price volatility in our scenarios. Iraq's invasion of Kuwait in August 1990 caused a total supply disruption of about 5 million barrels per day (b/d), although Saudi Arabia and other producers were able to increase output roughly 3 million b/d within a month and gradually offset the rest of the disruption by early 1991.

- *Starting from a pre-war level of roughly $20 per barrel in late July 1990, the price for the US benchmark crude, West Texas Intermediate, reached more than $30 per barrel in late August 1990, three weeks after Iraq's invasion of Kuwait.*

- *Prices ultimately peaked at more than $40 per barrel in early October 1990 and then ranged mostly above $30 per barrel until Operation Desert Storm began on 17 January 1991, when they fell back to about $20 per barrel because Saddam could no longer pose a serious threat to Saudi oil facilities.*

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It is difficult to measure the impact of war on the US and global economies, given the presence of other factors. For example, the US economy had already entered a recession prior to the start of Operation Desert Storm in 1991. The resulting oil price hikes only added to the economic downturn.

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Scenario 2: Scorched Earth.
After a massive bombing campaign and a US ground invasion, a desperate and vindictive Saddam destroys Iraqi oil facilities in the first month to use oil fires to slow the attack and deprive a successor regime of oil revenues. Hundreds of oil wells and key production and export facilities are blown up or disabled before Saddam is ultimately removed in six months. Other producers offset the loss in Iraqi production but restoring Iraq's pre-war output is expected to take at least two years. Israel conducts airstrikes and Special Forces raids in western Iraq in an effort to counter expected Iraqi attacks against Israel with chemical and/or biological weapons. These sideshows further enrage the Muslim world against the United States but have little impact on the war.

Economic Impact. The heavy damage to oil facilities leads to higher world oil prices, negatively affecting many countries including the United States. The global impact, however, is small and short-lived unless there are major, successful terrorist attacks outside the Middle East. World oil prices spike to $55 per barrel during the first month of the war, but fall back to about $35 per barrel for another five months because of the uncertain progress of the war and adverse market psychology.

- The US economy is hurt. Higher oil prices alone cost only about half a percentage point growth in 2003, but the insertion of hundreds of thousands of US troops into the war zone, a call-up of military reserves, and fear-induced selling on Wall Street prompt consumers to defer spending until the war is resolved. The dollar would come under renewed pressure, but with Europe and Japan also struggling, the US dollar probably does not fall far. US growth overall could easily be down a full percentage point even without the shock of new terrorist attacks on US soil.

- Western European GDP growth falls by 0.5 percentage points as a result of higher oil prices; its consumers display some nervousness over the war, but Europeans feel less exposed than Americans and the economic pain is less.

- The Japanese economy also takes a hit, losing one percentage point of GDP growth. The oil price rise has a direct impact on growth by transferring money out of Japanese to foreign hands, but war-related fears over oil supply security intensify the impact by encouraging beleaguered Japanese consumers and investors to defer purchases and increase saving.

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The Russian economy initially surges on the back of the windfall oil revenue, but the longer-term effects are mixed. Higher export proceeds fuel a sharp appreciation of the ruble that weakens industrial competitiveness. Lower US and European growth reduces demand for non-commodity exports and slows foreign investment inflows. The tax windfall is diminished on increased subsidies to protect households from rising energy prices.

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Emerging market countries in Asia, Latin America, Europe, and Africa are hurt by the slowdown in OECD economic activity. Increased risk aversion in international financial markets drives up interest rates and makes international loans harder to get, increasing the odds of financial crises in debt-laden emerging market countries (EMCs) such as Brazil. Taiwan and South Korea lose at least a half a percentage point of growth due to higher oil prices and a slowdown in world trade. Mexico's oil revenues go up, but not enough to compensate for other export losses to the United States. Venezuela is one of the few EMCs that stand to benefit in this scenario.

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In the Middle East, large disruptions in trade and tourism plus huge refugee flows put a crimp in economic activity. In addition, worker remittances, a key source of revenue, fall as developed countries tighten visa requirements and clamp down on illegal immigration.

- Destruction of Iraq's oil production infrastructure results in up to a 75-percent contraction of GDP. Already unable to feed itself, Iraq's agricultural production is suppressed by the wartime devastation. Food stocks dwindle, and the ration system breaks down.

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- While Turkey will gain in the long run from an Iraq without Saddam and sanctions, the war will impose significant short-term costs on the economy from lost tourist revenue (b)(1)
(b)(1) and a longer period of increased interest rates on government debt—adding to Ankara's severe budget problems. Turkey is also concerned that a prolonged war could result in a new influx of refugees, most of them Kurds. (b)(1)

- Higher oil prices push up Saudi Arabian oil export revenue, strengthening the Saudi economy. In addition to higher prices, Saudi Arabia increases production by 600,000 b/d, roughly equivalent to 30 percent of the Iraqi shortfall, further padding the budget.

- Iranian oil revenues also increase as a result of higher prices and production, but Tehran scrambles to prevent a surge of refugees across its borders.

- Israeli engagement with Iraq and ongoing violence between Israel and the Palestinians further stifles economic activity. The economic downturn in the United States—Israel's main trading partner—leads to a sharp drop in exports.

- Jordan's economy is punished by a loss of heavily discounted oil from Iraq, a nosedive in tourism, the burden imposed by an influx of refugees from Iraq, (b)(1)

- The Egyptian economy would suffer from a war-related loss in tourism (b)(1) (b)(3)

Scenario 3: War Incites Regional Turmoil. An extended war in 2003 in Iraq combined with major terrorist attacks in the United States and Europe drives up oil prices to unprecedented levels, shatters confidence, and prompts a global recession.

Strategic Stocks Could Temper Oil Prices (b)(3)

The United States and its partners in the International Energy Agency (IEA) currently have more than 1.2 billion barrels in government-controlled oil stocks, of which more than 570 million barrels are in the US Strategic Petroleum Reserve (SPR). The maximum initial draw down capability of all IEA strategic stocks is more than 12 million barrels per day (b/d), including 4.2 million b/d from the US SPR, (b)(1) (b)(3) *The combined rate would fall quickly after one month—although the SPR could sustain its maximum rate for three months—and most reserves would be exhausted after six months at maximum withdrawal rates. The impact on oil prices of releasing strategic stocks during an oil market disruption is difficult to predict and would depend primarily on when they were released and the pace of withdrawals.* (b)(3)

A wave of regime-threatening unrest sweeps through Cairo, Amman, Damascus, and Gulf Cooperation Council capitals. (b)(1) (b)(3)

Economic Impact. (b)(1)

Oil prices quickly reach $75 per barrel and stay near that level for the six-month duration of the war. (b)(1)

prices to hover around $50 per barrel for another six months. Oil prices fall (b)(1) and the global economic aftereffects of high oil prices

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cause a drop in demand. Saudi Arabia, under intense internal pressures, tries to keep oil prices up even at the expense of further erosion of market share.

The direct impact of the oil price rise is immediate and severe. The expected US economic recovery is derailed and economic growth is cut by at least a percentage point. Assuming that some major successful terrorists attacks are carried out entailing substantial loss of life, consumer and investor confidence is weakened, costing at least another percentage point of growth.

- Japan, more heavily dependent on imported oil, is hurt worse by the oil price shock but is spared from terrorist attacks. Western Europe is hurt nearly as badly as the United States from the oil shock and also suffers from terrorism and an outpouring of rage from its Muslim citizens, especially in France. The EU slips into outright recession in 2003 and Japan's recession is extended.

- Growth in other regions is severely curtailed by the double effect of sky-high oil prices and sharply slower growth in the OECD countries. The newly industrializing East Asian countries—most of them heavy oil importers and major exporters to the OECD—suffer growth cuts of two to three percentage points. Latin America is hurt nearly as badly but rising oil export revenue cushions the blow for Mexico, Venezuela, and Argentina. Many EMCs suffer financial crises and seek to restructure their debts and obtain new financial assistance from Western creditors and the IMF.

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Russia is a big gainer in this scenario as surging oil export revenues prompt a splurge of investment and consumption. Russia, however, is not immune to the negative global turmoil. Non-energy exports and foreign investment—critical to Russia's reform efforts—suffer, and the economy becomes increasingly unbalanced. The energy sector prospers while the manufacturing sector shrivels, leaving the country more vulnerable to future price drops.

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Many Middle Eastern economies suffer, although major oil producers reap a financial windfall at first.

- As in the previous scenario, Iraq's GDP falls by as much as 75 percent in light of the destruction of its oil sector. Malnutrition surges, and pockets of famine emerge.

- The Turkish economy is hurt by the rise in world oil prices, a sharp decline in tourism, and a prolonged period of higher interest rates on government debt. Despite a substantial infusion of US and allied money to sustain the war effort, the recovery that began in 2002 is put on hold as economic growth drops to near zero

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- Israeli engagement with Iraq and ongoing violence between Israel and the Palestinians further dampens economic activity. The severe economic downturn in Israel's main trading partners—the United States and the EU—leads to a dramatic drop in exports. The economy of the West Bank and Gaza Strip virtually collapses, as Arab benefactors turn inward and international attention on the Palestinians wanes.

- The Jordanian economy is hurt badly by the loss of discounted oil imports from Iraq, and by the loss of the Iraqi market for its goods and services Even worse, the government has to cope with a flood of armed radicals moving in from the West Bank and thousands of defeated adherents of Saddam Hussein. Tourism and foreign investment cease, and the government has to focus all its efforts on merely staying in power.

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- Saudi Arabia and other major GCC oil exporters profit handsomely from a near 50-percent increase in oil revenues, with higher oil prices in the first year more than offsetting the effect of reduced exports. Their economies suffer in later years, however, as oil prices return to prewar levels, and

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they have lost market share to other OPEC and non-OPEC oil producers.

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- The Syrian economy will also suffer, even if it manages to stay out of the war.

Trade gradually revives after hostilities end, but Syrian goods and services would now face stiffer competition from more efficient suppliers.

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- Iran could suffer from an influx of up to 300,000 refugees if efforts to establish displaced persons camps on the Iraq side of the border fail to prevent cross-border flows. Tehran, however—assuming it avoided being drawn into the conflict—probably would benefit from the sharp increase in oil prices.

More Extreme Variations for the Worst Case

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Worse case scenarios are possible but difficult to analyze. There is the possibility—however remote—that the United States could suffer tremendous costs if our enemies are emboldened by the conflict to strike at us, or our allies, in unconventional terms.

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expanding our defense budget further in a wider war would have a significant impact. If, in response to US strikes against Baghdad, Iraq or its terrorist sympathizers launch a series of radiological, biological, or chemical attacks in the United States or Western Europe, the physical damage combined with psychological shock could hurt the US economy far more than indicated even in our third, high-oil-price scenario.

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Figure 1: War Scenarios and Their Economic Impact (S//NF)

	Decisive Victory	Scorched Earth	Regional Turmoil
Drivers			
Course of War in Iraq	Easy military victory displaces Saddam Hussein in January 2003	US invasion, 6 months of fighting to pacify country	US invasion, 6 months of fighting. US loses most bases in region
Regional Spillovers	None or minimal	Saddam attacks Israel, Israel retaliates.	
Level of Terrorism Outside Region	None or minimal	None or minimal	Major attacks in the United States, Europe, and Asia
Summaries	Saddam Hussein is ousted after a month of violent turmoil. Despite an initial flood of rage from the Arab street, neighboring regimes are not seriously threatened. Global and US economies not noticeably affected by war.	Saddam torches Iraq's oil facilities to hamper US attack and deny facilities to his successor. Iraq attacks Israel which retaliates with air attacks and Special Forces operations. Oil prices spike, war psychology hurts economic growth.	Iraq destroys its own facilities as in "Scorched Earth"
World Economics			
Oil Prices	$45 for a brief period, but averages $27 for the year.	Oil prices spike to $55 at times, average $32 for the year	Oil prices spike to $75, average $61 for the year unless Strategic Petroleum Reserve is used.
United States	Substantial costs for war preparation and occupation of Iraq. Brief downturn in economic growth in first quarter of 2003, but no noticeable macroeconomic impact for 2003.	Huge direct war costs and damage from higher oil prices. Economic growth down at least a full percentage point, maybe more depending on psychological reaction to war.	Several major terrorist attacks in the United States plus a stream of horrifying news from the Middle East cause economic activity to plummet.
Western Europe	Negligible impact	Similar but lesser impact than in the United States	Goes into recession
Japan	Negligible impact	Similar impact to United States	Stays in recession
Key Emerging Market Countries	Negligible impact	South Korea, Taiwan, China, India, Brazil all hurt by higher oil prices and lower growth in OECD.	Economic growth down two to three percentage points except in Russia.
Middle Eastern Countries			
Saudi Arabia	Not much impact in 2003. By late 2004 or early 2005, as Iraqi oil production and exports ramp up, a fall in world oil prices could put regime in dangerous position	Saudis gain from Iraqi production declines and higher oil prices.	Government reaps windfall oil revenues in the first year, but the economy suffers in later years as oil prices return to prewar levels and as a result of lost market share.
Iraq	Some increase in economic growth in 2003 as economy turns from war production. Heavy foreign obligations limit reconstruction options.	Major invasion devastates economy. Malnutrition surges, and pockets of famine emerge as agricultural production is suppressed.	Major invasion devastates economy. Malnutrition surges, and pockets of famine emerge as agricultural production is suppressed.
Turkey	Suffers in early 2003 but quickly recovers as trade returns to normal	Short-term economic pain influx of Kurdish refugees.	High oil prices, dearth of tourism, and huge costs from refugee flows tip economy into crisis if more aid is not forthcoming.
Israel	Economy continues to struggle under weight of *intifada*.	Iraqi attacks undermine economy.	Sharp downturn in 2003 due to war, but the economy gradually starts to pick up by yearend due to better security situation in West Bank.
Iran	Economy does well at helping provide goods and services for rebuilding Iraq. Increase in oil prices in early 2003 provides modest boost, but worrisome competition from Iraq in months to come.	Benefits from windfall oil revenues.	Benefits from windfall oil revenues, becomes more attractive as an area for investment by global oil firms.
Jordan	Temporary loss of heavily discounted oil from Iraq hurts economy, as does influx of tens of thousands of die-hard Saddam adherents.	As in first scenario but worse. Israeli overflights to attack Iraq enrage populace. Tourism declines hurt economy.	Government is under severe pressure to maintain control. Economy staggers.
Syria	Hurt by loss of discounted Iraqi oil and sanctions related aid.	Higher oil prices compensate for lack of Iraqi discounts.	Very high oil prices spur Syrian export revenues and growth.
Egypt	Negligible economic impact.	Hurt by higher oil prices, loss of tourism, civil disorder	Economic growth hurt, but less affected than neighbors.
Bottom Line	Negligible economic impact in 2003, positive benefits of OECD in subsequent years. Threat from WMD reduced, threat from other terror attacks reduced but still potent.	Global economy hurt briefly but avoids recession. Middle East economy severely battered; social turmoil does not augur well for quick recovery.	Global economy goes into recession, turnaround could be deferred by continuation of global terrorism and volatile situation in Middle East.

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Figure 2. Impact of Iraq War on World GDP Shocks and Subsequent Oil Price Increases

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Real GDP growth in 2003 and percentage point change from baseline forecast

	Baseline Scenario	Decisive Victory		Scorched Earth		Regional Turmoil	
	$25/ bbl Oil	$27/ bbl Oil	Pct. Point Change	$32/ bbl Oil	Pct. Point Change	$61/ bbl Oil	Pct. Point Change
World	3.3	3.4	0.1	2.8	-0.5	1.8	-1.5
United States	3.5	3.5	0.0	2.5	-1.0	1.5	-2.0
Canada	3.6	3.6	0.0	3.3	-0.3	2.6	-1.0
Western Europe	2.7	2.6	-0.1	2.2	-0.5	1.1	-1.6
Germany	2.4	2.3	-0.1	1.9	-0.5	0.9	-1.5
France	2.8	2.7	-0.1	2.3	-0.5	1.7	-1.1
United Kingdom	2.8	2.7	-0.1	2.4	-0.4	2.3	-0.5
East Asia	5.1	5.0	-0.1	4.6	-0.5	2.9	-2.2
Japan	1.1	1.0	-0.1	0.6	-0.5	-1.5	-2.6
China	7.5	7.4	-0.1	7.0	-0.5	6.5	-1.0
South Korea	6.4	6.3	-0.1	5.4	-1.0	4.4	-2.0
Taiwan	4.1	4.0	-0.1	3.1	-1.0	2.1	-2.0
Philippines	4.1	3.9	-0.2	3.6	-0.5	1.9	-2.2
Indonesia	4.3	4.1	-0.2	3.8	-0.5	2.1	-2.2
Latin America	3.4	3.3	-0.1	2.9	-0.5	1.4	-2.0
Mexico	4.3	4.3	0.0	3.8	-0.5	3.3	-1.0
Brazil	3.6	3.5	-0.1	3.1	-0.5	1.4	-2.2
Argentina	0.5	0.2	-0.3	0.1	-0.4	-1.4	-1.9
Russia	3.9	4.1	0.2	4.4	0.5	7.9	4.0
South Africa	3.2	3.0	-0.2	2.8	-0.4	0.8	-2.4
India	6.1	6.0	-0.1	5.8	-0.3	4.5	-1.6
Eastern Europe	4.0	3.8	-0.2	3.6	-0.4	1.7	-2.3
Poland	3.2	3.0	-0.2	2.8	-0.4	0.9	-2.3
Hungary	4.3	4.1	-0.2	3.9	-0.4	2.1	-2.2
Czech Republic	3.9	3.6	-0.3	3.4	-0.5	1.0	-2.9
Middle East							
Turkey	4.6	4.4	-0.2	3.6	-1.0	0.0	-4.6
Saudi Arabia	3.0	3.5	0.5	4.0	1.0	5.0	2.0
Israel	1.0	2.5	1.5	-1.5	-2.5	-3.0	-4.0
West Bank/Gaza	0.0	3.0	3.0	-1.0	-1.0	-5.0	-5.0
Jordan	3.7	4.2	0.5	2.3	-1.4	0.2	-3.5
Syria	3.5	3.3	-0.2	3.5	-0.0	4.0	0.5
Iran	4.8	5.3	0.5	5.3	0.5	5.8	1.0
Iraq	0.0	3.0	3.0	-75.0	-75.0	-75.0	-75.0
Egypt	3.4	3.9	0.5	3.5	0.1	1.4	-2.0

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