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**Intelligence and Iraqi Weapons of Mass
Destruction:
The Lessons from the Iraq War**

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The Need for Better Assessment, Characterization, and Location of Weapons of Mass Destruction and Key Delivery Systems

The Iraq War involved many US and allied military successes. The intelligence effort to characterize Iraqi weapons of mass destruction was, however, a major failure. US and British efforts to characterize the size and nature of Iraqi weapons of mass destruction before the war were not even approximately accurate.¹¹

Coalition commanders had little useful intelligence on Iraqi WMD programs and warfighting capabilities as they advanced, and it is clear from a wide range of reports during the war that there were many false alarms when elements of the advancing forces thought they had found weapons of mass destruction or the facilities to produce them, and when Coalition forces either donned chemical protection gear they later turned out not to need or Coalition commanders had to ignore the risk Iraq might use such weapons without adequate tactical intelligence support to give them a clearer picture of the risks involved.

The reasons for these intelligence failures are complex, and involve far more than efforts to politicize the intelligence product. These failures affected US warfighting during the Iraq War, and they now affect the US effort to search out Iraqi capabilities after the war. More generally, they are likely to present serious problems in future efforts to deal with other proliferating countries, and to win domestic and international support for military action.

The following analysis deals with the broad problems in collection and analysis that limited US capability to assess the situation in Iraq and that will limit US capability to assess future threats. It addresses the problem of politicizing intelligence, and of searching out Iraqi capabilities after the war. More generally, it suggests that new ways need to be found to both assess and communicate intelligence if the US and its allies are to be able to deal with cases like Iran, north Korea, and other proliferators.

Problems in Collecting Data on Iraqi and Other Country WMD Capabilities and Delivery Systems

In spite of all of the advances the US and Britain had made in IS&R capabilities, they went to war with Iraq without the level of evidence needed to provide a clear strategic rationale for the war, and without the ability to fully understand the threat Iraqi weapons of mass destruction posed to US, British, and Australian forces. This uncertainty is not a definitive argument against carrying out a war that responded to grave potential threats. It is a definitive warning that this intelligence and targeting are not yet adequate to support grand strategy, strategy, and tactical operations against proliferating powers or to make accurate assessments of the need to preempt.

It is difficult to put the problems involved into perspective without access to classified material. Past declassified US intelligence reporting on proliferation has, however, made it clear that proliferation presents very serious problems for intelligence collection and analysis, and UNSCOM and UNMOVIC reports show that Iraq was well aware of these problems and how to exploit them:

- Iraq and other powers sophisticated enough to proliferate are also sophisticated enough to have a good understanding of many of the strengths and limitations of modern intelligence sensors, the timing and duration of satellite coverage, and the methods use to track imports and technology transfer. They have learned to cover and conceal, to deceive, and to create smaller and better disseminated activities.
- Intelligence collection of relies heavily on finding key imports and technology transfers. Such reports, however, only usually cover a small fraction of the actual effort on the part of the proliferating country, and the information collected is often vague and uncertain, in part because importers and smugglers have every incentive to lie and are also familiar with many the ways to defeat intelligence collection and import controls. When information does become available, it is often impossible to put in context, and a given import or technology transfer can often be used in many difficult ways, often was other than proliferation. Such import data can hint at the character of a proliferation effort, but give no picture of the overall character of the activity.
- Even when data are available on given imports or technology transfers, they generally present three serious problems. One is that there is no way to know the end destination and use of the import and how it is integrated into the overall effort. The second is there is no way to know if it is integrated into an ongoing research and development effort, a weapons production effort, being procured or stockpiled for later use, or simply an experiment or mistake that is never further exploited. The third is that many imports have civilian or other military uses. These so-called “dual-use” imports may have legitimate use.
- The very nature of arms control agreements like the Nuclear Non-Proliferation Treaty (NNPT), Biological Weapons Convention (BWC), and Chemical Weapons convention (BWC) encourages proliferating nations to lie and conceal as effectively as possible. The same is true of supplier agreements like the Missile Technology Control Regime (MTCR) and Australia List, and any form of sanctions. Arms control only encourages compliance among non-proliferators and non-sellers, and current enforcement efforts are too weak to be effective while their provisions effective license technology transfer to those nations who succeed in lying or concealing.
- The technology of proliferation generally permits the research and development effort to be divided up into a wide range of small facilities and projects. Some can be carried out as legitimate civil research. Others can be hidden in civil and commercial facilities. As proliferators become more sophisticated, they learn to create dispersed, redundant and parallel programs, and mix high secret covert programs with open civil or dual-use programs. Chemical, biological, and cruise missile programs are particularly easy to divide up into small cells or operations. However, this is increasingly true of nuclear weapons centrifuge programs, plutonium processing and fuel cycles, and the testing and simulation of nuclear weapons that does not involve weapons grade materials. Many key aspects of ballistic missile R&D, including warhead and launch system design fit into this category.

- Iraq and most other proliferators have, in the past, focused on creating stockpiles of weapons for fighting theater conflicts against military forces. These stockpiles require large inventories, large-scale deployments, and generally mixes of training and warfighting preparations that create significant intelligence indicators. There are, however, other strategies and many proliferators may now be pursuing them. One is to bring weapons to full development, and to wait until a threat becomes imminent to actually produce the weapon. A second is to follow the same course, but create large dual-use civil facilities that can be rapidly converted to the production of weapons of mass destruction. These can include pharmaceutical plants, food-processing plants, breweries, petrochemical plants, and pesticide plants, but key assembly lines can be concealed in a wide range of other commercial activities.² Weapons production facilities can be stockpile for a later and sometimes sudden breakout. A third is to focus on creating as few highly lethal biological or nuclear weapons to attack key political or civilian facilities in a foreign country, rather than its military forces. Highly lethal non-infectious or infectious biological agents are one means of such an attack, biological weapons directed at crops or livestock are another.
- Countries can pursue very different strategies in dealing with their past inventories of weapons. They can disclose and destroy them, knowing they do not face an urgent warfighting need, better weapons are coming, and this suits current political objectives. They can claim to destroy and hide the remaining weapons in covert areas known only to a few. They can claim to destroy, or lie, and disperse weapons where they can be used for warfighting purposes. In many cases, intelligence collection may not be able to distinguish between such strategies, and a given proliferator like Iraq can pursue a mix of such strategies – depending on the value of the weapon.
- In many cases, there is no clear way to know whether a program is R&D, production and weapons deployment, or production capable/breakout oriented. The problem is further complicated by the fact that Iraq and other countries have learned to play a “shell game” by developing multiple surface and underground military facilities and dual-use facilities and to create relatively mobile mixes of trailer/vehicle mounted and “palletized” equipment for rapid movement. Large special-purpose facilities with hard to move equipment often still exist, but they are by no means the rule. Intelligence collection takes time and may often lag behind country activities.
- Unless a country keeps extremely accurate records of its programs, it is often far easier to estimate that maximum scale of what it might do than provide an accurate picture of what it has actually done.
- In most cases, it is impossible to know how far a given project or effort has gotten and how well it has succeeded. The history of proliferation is not the history of proliferators overcoming major technical and manufacturing problems. It is the history of massive management and systems integration problems, political failures, lying technical advocates and entrepreneurs, project managers who do not tell their political masters the truth, and occasional sudden success. Short of

an intelligence breakthrough, it is rarely possible to assess the success of a given effort and even on the scene inspection can produce vary wrong results unless a given project can be subjected to detailed technical testing. For example, UNSCOM and the IAEA found that virtually all of their preliminary reporting on Iraq's nuclear effort in 1992-1993 tended to exaggerate Iraqi capabilities once they had had the time to fully assess the efficiency of key efforts like the Calutron and centrifuge programs.

- The only definitive way to counter most of these collection problems is to have a reliable mix of redundant human intelligence (HUMINT) sources within the system or as defectors. The US, however, has never claimed or implied it had such capabilities in any proliferating country, and the history of US, British, UNSCOM, and UNMOVIC efforts to deal with Iraq makes it painfully clear both that such transparency was totally lacking in Iraq and that most Iraqi defectors and intelligence sources outside Iraq made up information, circulated unsubstantiated information, or simply lied. Breakthroughs do occur, but HUMINT is normally inadequate, untrustworthy, or a failure, and these shortcomings cannot generally be corrected with data based on other intelligence means. Either inside information is available or it is not. When it is, imagery and signals intelligence generally do far more to indicate that HUMINT is wrong or suspect than to reveal the truth.³
- In many cases, even the leaders of a proliferating country may not have an accurate picture of the success of their efforts, and most probably do not have a clear picture of the accuracy, lethality and effects, and reliability of their weapons. US and British research efforts have long shown that even highly sophisticated technical models of the performance and lethality of chemical, biological, and nuclear weapons and delivery systems can be grossly wrong, or require massive levels of human testing that simply are not practical even for closed authoritarian societies. No declassified intelligence report on any proliferation effort in any developing country has yet indicated that Iraq or any other proliferator has sophisticated technical and testing models in these areas. Intelligence cannot collect data that do not exist.

Problems in Analyzing Iraqi and Other Country WMD Capabilities and Delivery Systems

Many of the resulting problems in the analysis of the WMD capabilities of Iraq and other countries are the result of the previous problems in collection, and the details of US, British, and allied intelligence analyses remain classified. At the same time, background discussions with intelligence analysts and users do reveal the following additional problems in analyzing the WMD threat:

- The uncertainties surrounding collection on virtually all proliferation and weapons of mass destruction programs are so great that it is impossible to produce meaningful point estimates. As the CIA has shown in some of its past public estimates of missile proliferation, the intelligence community must first develop a matrix of what is and is not known about a given aspect of proliferation in a given country, with careful footnoting or qualification of the problems in each key

source. It must then deal with uncertainty by creating estimates that show a range of possible current and projected capabilities – carefully qualifying each case. In general, at least three scenarios or cases need to be analyzed for each major aspect of proliferation in each country – something approaching a “best,” “most likely,” and “worst case.”⁴

- Even under these conditions, the resulting analytic effort faces serious problems. Security compartmentation within each major aspect of collection and analysis severely limits the flow of data to working analysts. The expansion of analytic staffs has sharply increased the barriers to the flow of data, and has brought large number of junior analysts into the process that can do little more than update past analyses and judgments. Far too little analysis is subjected to technical review by those who have actually worked on weapons development, and the analysis of delivery programs, warheads and weapons, and chemical, biological, and nuclear proliferation tends to be compartmented. Instead of the free flow of data and exchange of analytic conclusions, or “fusion” of intelligence, analysis is “stovepiped” into separate areas of activity. Moreover, the larger staffs get, the more stovepiping tends to occur.
- Analysis tends to focus on technical capability and not on the problems in management and systems integration that often are the real world limiting factors in proliferation. This tends to push analysis towards exaggerating the probable level of proliferation, particularly because technical capability is often assumed if collection cannot provide all the necessary information.
- Where data are available on past holdings of weapons and the capability to produce such weapons – such as data on chemical weapons feedstocks and biological growth material – the intelligence effort tends to produce estimates of the maximum size of the possible current holding of weapons and WMD materials. While ranges are often shown, and estimates are usually qualified with uncertainty, this tends to focus users on the worst case in terms of actual current capability. In the case of the Iraq, this was compounded by some 12 years of constant lies and a disbelief that a dictatorship obsessed with record keeping could not have records if it had destroyed weapons and materials. The end result, however, was to assume that little or no destruction had occurred whenever UNSCOM, UNMOVIC, and the IAEA reported that major issues still affected Iraqi claims.
- Intelligence analysis has long been oriented more towards arms control and counterproliferation rather than war fighting, although DIA and the military services have attempted to shift the focus of analysis. Dealing with broad national trends and assuming capability is not generally a major problem in seeking to push nations towards obeying arms control agreements, or in pressuring possible suppliers. It also is not a major problem in analyzing broad military counterproliferation risks and programs. The situation is very different in dealing with war fighting choices, particularly issues like preemption and targeting. Assumptions of capability can lead to preemption that is not necessary, overtargeting, inability to prioritize, and a failure to create the detailed collection

and analysis necessary to support warfighters down to the battalion level. This, in turn, often forces field commanders to rely on field teams with limited capability and expertise, and to overreact to any potential threat or warning indicator.

- The intelligence community does bring outside experts into the process, but often simply to provide advice in general terms rather than a cleared review of the intelligence product. The result is often less than helpful. The use of other cleared personnel in US laboratories and other areas of expertise is inadequate and often presents major problems because those consulted are not brought fully into the intelligence analysis process and given all of the necessary data.
- The intelligence community does tend to try to avoid explicit statements of the shortcomings in collection and methods in much of its analysis and to repeat past agreed judgments on a lowest common denominator level – particularly in the form of the intelligence products that get broad circulation to consumers. Attempts at independent outside analysis or “B-Teams,” however, are not subject to the review and controls enforced on intelligence analysis, and the teams, collection data, and methods used are generally selected to prove given points rather than provide an objective counterpoint to finished analysis.⁵

More broadly, the users of intelligence are at best intolerant of analysis that consists of a wide range of qualifications and uncertainties even at the best of times, and the best of times do not exist when urgent policy and warfighting decisions need to be made. Users inevitably either force the intelligence process to reach something approaching a definitive set of conclusions, or make such estimates themselves.

Intelligence analysts and managers are all too well aware of this fact. Experience has taught them that complex intelligence analysis -- filled with alternative cases, probability estimates, and qualifications about uncertainty -- generally goes unused or makes policy makers and commanders impatient with the entire intelligence process. In the real world, hard choices have to be made to provide an estimate that actually be used and acted upon, and these choices must either be by the intelligence community or the user.⁶

The Politics of Characterizing and Targeting Iraqi WMD Capabilities and Delivery Systems

All of these points have obvious importance in assessing the political and policy-level use of intelligence during the Iraq War. It is easy to focus on the extent to which the intelligence that the US and Britain provided before the war was or was not “politicized” as part of the effort to make the case for the war. Yet, far broader issues are involved that are scarcely specific to the Iraq War, and which are almost certain to apply to future crises and conflicts. The same problems that limited US and British intelligence capabilities during the Iraq War – and which will limit them for the foreseeable future -- necessarily apply to other countries and to any international organizations.

There also are no peers with superior capabilities. No other state can compete with the US in intelligence collection and analysis resources, although a growing number of states do have significant satellite and other technical means and any state can score a human intelligence breakthrough. Organizations like the UN have no independent intelligence collection capability other than the reporting and inspection provisions provided by

international agreements. As UNSCOM and UNMOVIC showed during their inspection efforts in Iraq, direct inspection can often provide important discoveries, but such search techniques also only provide limited and time consuming coverage and cannot function effectively without intelligence data and analytic inputs from other countries.

No one who focuses on the specific case of the Iraq War can afford to ignore the fact that future threats posed by proliferation by states or terrorist movements may again seem so great that it may not be possible to wait to take military action until many key uncertainties are resolved. Moreover, it is difficult to see how leaders can lead if they communicate all of the uncertainties involved in the intelligence assessment of most proliferating countries.

In practical terms, any political effort to try to communicate the true level of uncertainty and probable outcomes inherent in most estimates of proliferation seems almost certain to make it difficult or impossible to gain a political consensus for timely and effective domestic or international action. Communicating uncertainty may be a good way of arguing against action but only because its impact is to create nearly endless discussion and debate and block agreement on any policy that requires broad political agreement on a single course of action or the use of military force. In practical terms, the US and its allies may again have to act on the basis of something approaching “worst case” assumptions, and this is a risk that proliferating nations and extremist movements may have to learn they take when they proliferate.

Dealing with a Proven Proliferator

It is also necessary to put any US or British politicization of intelligence in context. Whatever mistakes may have been made in the intelligence assessments before and during the war, Saddam Hussein’s regime was clearly proliferating. During the period from 1991-1998, UNSCOM found that Iraq had concealed major chemical, biological, and nuclear programs, and continued to lie about them until it expelled UNSCOM from Iraq. These lies affected many detailed aspects of the Iraqi nuclear and missile program. They also, however, succeeded in concealing the existence of a biological weapons program until 1995 – four years after the war was over and a massive inspection effort was underway. They succeeded in concealing a major VX nerve gas weaponization program until 1997-1998 – seven years after the war was over and a massive inspection effort was underway.⁷

Iraq clearly failed to meet the requirements of the UN Security Council’s Resolution 1441 that established the ground rules for the resumption of UN inspections under UNMOVIC. Iraq’s declaration to the UN did virtually nothing to resolve immense uncertainties about the remaining scale of the Iraqi proliferation effort that could still have involved massive stocks of chemical and biological weapons. UNMOVIC found that Iraq continued to try to conceal major violations of the ceasefire limits on the development of long range missiles, and it was anything but forthcoming in making Iraqi scientists available for interviews and in implementing most other aspects of cooperation with the UN. When it did improve its cooperation, it almost always did so because the threat of US and British military action had become more imminent.⁸

Hans Blix, the Executive Chairman of UNMOVIC before and during the war, and a man who disagreed with many of the US British assessments of Iraqi capabilities issued to make the case for war, made many of these same points in his last report to the UN.⁹

...the Commission has not at any time during the inspections in Iraq found evidence of the continuation or resumption of programmes of weapons of mass destruction or significant quantities of proscribed items – whether from pre-1991 or later. I leave aside the Al Samoud 2 missile system, which we concluded was proscribed. As I have noted before, this does not necessarily mean that such items could not exist. They might – there remain long lists of items unaccounted for – but it is not justified to jump to the conclusion that something exists just because it is unaccounted for.

...we note that the long list of proscribed items unaccounted for has not been shortened by inspections or Iraqi declarations, explanations or documentation. It was the task of the Iraqi side to present items unaccounted for, if they existed, or to present evidence – records, documents or other – convincing the inspectors that the items do not exist.

If – for whatever reason – this is not done, the international community cannot have confidence that past programmes or any remaining parts of them have been terminated. However, an effective presence of international inspectors will serve as a deterrent against efforts aimed at reactivating or developing new programmes of weapons of mass destruction.

Although during the last month and a half of our inspections, the Iraqi side made considerable efforts to provide explanations, to begin inquiries and to undertake exploration and excavations, these efforts did not bring the answers needed before we withdrew. We did not have time to interview more than a handful of the large number of persons who were said by Iraq to have participated in the unilateral destruction of biological and chemical weapons in 1991. Such interviews might have helped towards the resolution of some outstanding issues, although one must be aware that the totalitarian regime in Iraq continued to cast a shadow on the credibility of all interviews.

The report before you gives details of the Commission's supervision of the destruction of 50 Al Samoud 2 missiles out of the 75 declared deployed and of other items in the missile sphere... Fifty per cent of the declared warheads and 98% of the missile engines remained intact. Also, there was no time to assess whether the Al Fatah missile programme stayed within the range allowed by Security Council resolutions.

In the context of destruction of proscribed items, I should like also to draw the attention of the Council to the information... that the weapons that were destroyed before inspectors left in 1998, were in almost all cases declared by Iraq and that the destruction occurred before 1993 in the case of missiles, and before 1994 in the case of chemical weapons. The existence and scope of the biological weapons programme was uncovered by UNSCOM in 1995 despite Iraq's denials and concealment efforts. As to items, only a few remnants of the biological weapons programme were subsequently found. A great deal – Iraq asserts all – was unilaterally destroyed in 1991.

Thus, in the main, UNSCOM supervised destruction of actual weapons and agents took place during the early years of the Commission, and had regard mainly to items declared by Iraq or, at least, found at sites declared by Iraq. Subsequent UNSCOM disarmament activities dealt almost exclusively with the destruction of equipment and facilities for the production of weapons connected to past programmes. In addition, of course, UNSCOM was able, with great skill, to map large parts of Iraq's WMD programmes.

While we are all aware of the large amounts of proscribed items, which still remain unaccounted for, we should perhaps take note of the fact that for many years neither UNSCOM nor UNMOVIC made significant finds of weapons. The lack of finds could be because the items were unilaterally destroyed by the Iraqi authorities or else because they were effectively concealed by them. I trust that in the new environment in Iraq, in which there is full access and cooperation, and in which knowledgeable witnesses should no longer be inhibited to reveal what they know, it should be possible to establish the truth we all want to know.

As Rolf Ekeus, Executive Chairman of UNSCOM from 1991-1997, pointed out after the war, Iraq never gave up the basic core of its chemical, biological, or nuclear weapons efforts or the effort to find dual-use and other production equipment.¹⁰

The Costs of Politicizing Intelligence

That said, one key lesson of the Iraq War is still that it is dangerous to over-politicize intelligence and to not provide a picture of the threat and reasons for warfighting that is not qualified to some extent. Overselling the threat before a war leads to overreacting during a conflict, and major credibility problems in the aftermath of the conflict that can interfere with nation building and limit domestic and international support in future conflicts. The US and Britain did not find the right balance of persuasion and objectivity in their public analyses of the threat before the war and their arguments in favor of the conflict. The fact that no evidence surfaced during or soon after the war that Iraq had the capability to use weapons of mass destruction in warfighting, or had active programs for the production of weapons mass destruction that were creating an imminent threat, has been a source of major embarrassment for the Bush and Blair governments, as well as for allied governments like Australia.

Postwar reports and interviews make it clear that the US and Britain did present worst case estimates to the public and the UN without sufficient qualification, and that their intelligence communities came under serious political pressure to make something approaching a worst case interpretation of the evidence, and interpret the inability to account for missing weapons of mass destruction, delivery systems, and production capabilities as meaning Iraq had something approaching matching inventories of deployed weapons.

As has already been mentioned, there are many indications that the US intelligence community came under pressure to accept reporting by Iraqi opposition sources with limited credibility, and in some cases, a history of actively lying to either exaggerate their own importance or push the US towards a war to overthrow Saddam Hussein. In what bore a striking resemblance to similar worst case interpretations of the global threat from the proliferation of ballistic missiles under the Rumsfeld Commission, US policymakers not only seem to have pushed for the interpretation that would best justify military action, but to have focused on this case as if it were a reality, rather than a possibility.¹¹ This pressure seems to have come primarily from the Office of the Vice President and the Office of the Secretary of Defense, but it seems clear that the Bush Administration as a whole sought intelligence that would support its case in going to war, and this had a significant impact on the intelligence community from 2002-onwards.¹²

The British reporting on the Iraqi threat presented further problems because the so-called intelligence report presented by the British government copied text from the work of a graduate student, and questions still remain as to why both the US and British governments stated there was evidence that Iraq had imported Uranium when at least one of the sources mentioned was clearly fraudulent.¹³ Similarly, a claim that Iraq was ready to deploy chemical and biological weapons within 45 minutes, including against its own Shi'ite population, later turned out to be based on a single unvalidated report from an Iraqi officer of uncertain credibility.¹⁴

The Need for Rapid and Reliable Characterization of Chemical and Biological Agents and Coalition US intelligence Effort

The problems in the US and other Coalition intelligence efforts affected warfighting as well as the politics of the war. In spite of all of the advances in IS&R capabilities, and more than a decade of additional intelligence collection and targeting experience, the US and its allies were just as unable able to characterize and target Iraqi capabilities to use, produce, and deliver weapons of mass destruction during military operations as it was during Desert Storm and Desert Fox. If anything, the US was more successful in the Gulf War, although many of its limited successes during the Gulf War were more the accidental result of hitting secondary targets than intelligence analysis and military planning.

Each of the military services had to plan before and throughout the Iraq War for the risk that Iraq would use weapons of mass destruction. General John P. Abizaid, General Franks' deputy during the war and the new commander of USCENTCOM, described the situation as follows to the Senate Armed Services Committee:¹⁵

Intelligence was the most accurate I've ever seen on the tactical level, probably the best I've ever seen on the operational level, and perplexingly incomplete on the strategic level with regard to weapons of mass destruction. It is perplexing to me...that we have no found weapons of mass destruction, when the evidence was so pervasive that it would exist...I can't offer a reasonable explanation..."

Lt. Gen. James Conway, commander, First Marine Expeditionary Force describes the problems created by such uncertainties as follows:¹⁶

...we were... not hit with weapons of mass destruction -- I think we had four triggers that we were prepared to defend ourselves against -- different times when we thought that the regime might try to employ the weapons of mass destruction against us. And we truly thought that they were distributed -- not to everybody, not to the regular army divisions that we saw in the south. But my personal belief was that they probably did reside in the Republican Guard units, and we encountered, arguably, three, maybe four, Republican Guard divisions on the way to Baghdad. But my personal belief was that the Republican Guard corps commander probably had release authority, and that we might well see them when we started to encounter his force or enter his area.

It was a surprise to me then, it remains a surprise to me now, that we have not uncovered weapons, as you say, in some of the forward dispersal sites. Again, believe me, it's not for lack of trying. We've been to virtually every ammunition supply point between the Kuwaiti border and Baghdad, but they're simply not there. Now, what that means in terms of intelligence failure, I think, is too strong a word to use at this point. What the regime was intending to do in terms of its use of the weapons, we thought we understood or we certainly had our best guess, our most dangerous, our most likely courses of action that the intelligence folks were giving us. We were simply wrong. But whether or not we're wrong at the national level, I think, still very much remains to be seen.

It is important to note that from an operational point of view, no commander could know whether weapons of mass destruction could or would be used to the end of the war, that there were many cases where units had to use protective gear, and that the speed of maneuver employed involved significant potential risk in the face of any sudden Iraqi escalation to the use of such weapons.

The fact that Iraq did not use chemical and biological weapons did not prevent repeated needs to use protection. In many cases, more sophisticated and quicker reacting detectors

and grids could have reduced the strain on US and British forces. It is also clear from the results of search for weapons of mass destruction during and after the war, that field equipment cannot rapidly and accurately characterize some chemical and biological threats and can produce serious false alarms. In case after case, units encountering suspect facilities and weapons trend to produce a false positive that could only be disproved after further testing in the rear.

Problems also still exist in using protection suits in combat. While reporting to date is anecdotal, several field reports indicate the equipment produced significant fatigue and interfered in operations. One typical field report states:

“we had guys tripping over their floppy MOPP boots trying to attack trench lines. One guy tripped, fell into a trench, and found himself fighting with a Republican Guardsman. Shot him in the head, by the way, and then took his MOPP boots off and tossed them out of frustration. Regardless of what people say, you can’t do fire and movement effectively in the shit for extended periods.”

This point is further illustrated in the report on the lessons of the war by the Commanding General of the 1 Marine Division:¹⁷

During the planning phase for offensive operations in Iraq, it became apparent that the Division had insufficient decontamination capability to free us from contamination without siphoning off combat capability. The doctrine for NBC decontamination states that the NBC section needs augmentation from combat engineers, motor transport, and other Division elements. We assigned this task to 3rd AA Battalion along with the additional task of traffic management control. The Division NBC Platoon augmented the battalion to provide expertise and support. Decontamination sites were placed by water sources because the Division does not have the organic capability to transport the volume of water necessary to conduct decontamination operations.

Recommendation: ... Adopt the doctrinal roles of operational decontamination and traffic management and control. The Division possesses a more robust capability, in both personnel and equipment, to achieve the ability to conduct decontamination at the rate of one company per hour. CSS assets should be tasked with providing the water for the decontamination site to keep the location independent of local water sources.

Assessing proliferation is not simply an intelligence or policy problem, it is an operational problem, and the greater the uncertainty, the greater the operational dilemma in choosing between protective and defensive measures, and maintaining the tempo and focus of combat. If the Iraq War provides a lesson in this area, it is that the US and its allies have no reliable way as yet to reduce this dilemma, reduce the risks involved, or reliably deal with this aspect of asymmetric warfare.

Organized Searches for Weapons of Mass Destruction in Proliferating Countries: The Search During and After the War

The Iraq War provides important lessons about the need to search for possible weapons of mass destruction and sensitive facilities during a war, and the need to secure such facilities as soon as possible. The US did carry out an ongoing effort to find and secure Iraqi weapons of mass destruction and related facilities as it advanced, but this effort had limited manning, uncertain intelligence support, and could provide only limited coverage. The US lacked an effective plan and coordinated effort to secure Iraq WMD and missile facilities as US forces advanced, and some – including nuclear facilities – were looted as a result.

The US was so convinced that it would find large stocks of Iraqi weapons and/or major ongoing proliferation efforts that it failed to formulate a clear strategy for dealing with the almost inevitable charges it would conceal the facts and challenges in the UN over the lifting of sanctions.¹⁸ The mix of biologists, chemists, nuclear experts, arms control experts, computer and document experts, and special forces troops was tailored around the case that Saddam had deployed weapons and given release authority to his commanders to use them under certain circumstances.¹⁹ It did not really have the scale, expertise, language skills to deal with other types of Iraqi proliferation activity -- such as covert research and development efforts, tracking down complex patterns of illegal imports, locating and interviewing scientists, searching out concealed and dispersed facilities, and analyzing possible destruction sites.

The US made little preparation had been made for the start of a timely disarmament and inspection effort with a credible audit trail. It relied on US teams operating without international support and observers. It did not aggressively seek to include the UN. The inclusion of UNMOVIC and the IAEA would certainly have created political problems, but the US does not seem to have been sensitive to the need to create teams that would have a high degree of international credibility.²⁰

The Initial Search Effort

During the war, the US military tasked various elements of Special Forces and other units to search for weapons of mass destruction As US forces advanced into Iraq. The overall level of equipment and training was limited, however, and many units overreacted to suspected sites and failed to properly characterize the weapons, equipment, facilities and substances they found.²¹ Task Force 20, the US Army Special forces team that had a key mission in this search was deployed in March and evidently before the actual fighting began. However, the team in Task Force 20 was relatively small and had the much broader mission of looking for key figures in the Iraqi leadership. Similar problems in resources and mission focus affected many of the other special purpose teams involved.²²

The main initial US effort, however, was conducted by a 600 person group called 75th Exploitation Task Force which was supported by the 513th military intelligence brigade and smaller effort sent in by the Defense Threat Reduction Agency. These specialists moved slowly and spent most their initial efforts going through known facilities slowly and by the numbers. They focused on the facilities most likely to have been vacated months earlier because they were known to be targets both for UNMOVIC and US military action, but failed to ensure that the US secured key declared facilities like the nuclear facilities subject to IAEA inspection.²³

There are conflicting reports about the pace of the initial search effort. One source reports that as of early May, the US, "had only secured only 44 of the 85 top potential weapons sites in the Baghdad area and 153 of the 372 considered most important to rebuilding Iraq's government and economy."²⁴ Others states that the US inspections teams had visited 19 top weapons sites, with two left for investigation, and that they had surveyed another 45 out of 68 top "non-WMD sites," without known links to weapons of mass destruction, but suspect as potential sites.²⁵ In still another report, the 75th Exploitation Task Force was reported to have visited some 300 facilities by the end of May.²⁶ The true scale of the targeting and search problem may best be indicated by the

fact that Stephen A. Cambone, the Undersecretary of Defense for Intelligence, announced on May 30 that only 70 of roughly 600 potential weapons facilities had been examined out of an "integrated master site list" prepared by U.S. intelligence agencies before the Iraq War.²⁷

Expanding the Effort and Creating the Iraq Survey Group (ISG)

As time went on, the growing political and military problems created by the lack of an effective wartime and early postwar search effort forced the US to greatly expand its search team and give it far more capability. In late May, the US announced it would supplement the 75th Exploitation Task Force with a much larger Iraq Survey Group (ISG), that included elements from the US, British and Australian intelligence communities. The search effort was expanded to the point where the ISG was manned by between 1,300 and 1,400 people from the United States government and from the United Kingdom and Australia.

The way the US initially approached the post-war effort to survey Iraq's weapons of mass destruction, and the reasons for creating the ISG, are described as follows in a Department of Defense briefing on May 7, 2003:²⁸

The command, USCENTCOM, has a command inside of Iraq known as the Coalition Land Component Commander -- Coalition Forces Land Component Commander or CFLCC...And each day, within that organization in what they have as their operation center, which is known as the C3, they sit down and work through their priorities. That priority list itself has been pulled together as a consequence of information that we had going into the conflict of sites that we thought important. As you know, there are some thousand sites that we identified; those sites included not just weapons of mass destruction sites, but also prisoner of war -- prisoner camps -- prisons, rather, prisoner of war locations, terrorist camps and facilities, as well as regime and leadership targets. So there are some thousand of them, roughly, of which about half are related to weapons of mass destruction..

...As it stands now, we have been to about 70 sites that we were looking to cover. Now, what's interesting about that is that those are the 70 sites that were on the list when we started. Since then, we have been to about another 40 which have come to light as a consequence of this process that I have been describing to you here. And the way this works is with respect to a WMD site in particular, once it's been identified, there is a survey team, which may have been there already, having come up with the troops as they came through the countryside, or sent out in advance. And they will go to the site, they will do a survey and determine whether or not it's important for more advanced units to come in and take a look at what's there. So, it's a site survey team. And so their job is done.

Next would come in a mobile exploitation team, an MET, as they're being called, which would do a much more thorough assessment of the site and also inspect any additional sites that USCENTCOM might have recommended.

And then, to the extent you need disablement of a facility or a capability in the site, there are disablement teams that are sent out to disarm, or render safe or destroy those -- any delivery systems, weapons, agents or facilities that might be found.

Now, the organization that currently is assigned this mission is...known as the 75th Group. It is assigned this discovery and exploitation mission. It, in turn, is supported by a military intelligence brigade, the 513th. These units have been, by the by, in theater for a very long period of time.

The expertise within the 75th Group extends across some 600 people, and they are distributed across interrogators, interviewers, people who do the document exploitations, the material exploitation and the analysts; that is, the people who each day sort of come together, take the information that's come on board and try then to make recommendations about what might be

done next. The expertise within the group is made up of people from the Central Intelligence Agency, the Defense Intelligence Agency, from the individual services, from DTRA, the Defense Threat Reduction Agency, the FBI, and then there are coalition partners who, themselves, are part of this ongoing effort.

That group, the 75th, will soon, toward the end of this month, begin to have an augmentation take place, and that will be done under the auspices of what we're calling the Iraq Survey Group. That group will be headed by a two-star general, a major general, Keith Dayton, who, as it turns out, is a member of Admiral Jacoby's staff. He will take the lead for the discovery and the exploitation that we have been talking about. And in particular, its mission is to discover, take custody of, exploit and disseminate information on individuals, records, materials, facilities, networks and operations as appropriate relative to individuals associated with the regime, weapons of mass destruction, terrorists and terrorist ties and their organizations, information having to do with the Iraqi Intelligence, Security and Overseas Services, and those accused of war crimes and crimes against humanity, and POWs. So it's a very large undertaking of which the weapons of mass destruction effort is a part in an important part of that effort, but only a part.

The organization will pretty much double or triple in size. There'll be some 1,300 experts who will be associated with this organization, plus another support element of maybe another 800. So you're talking about 2,000 people, more or less, who will begin arriving with the lead elements of the command starting toward the end of this month and the expertise, again, from the organizations I described a moment ago and will include, as well, people from Treasury, some of whom are already in theater, by the way, as well as U.S. citizens who had been in the past UNSCOM inspectors, some other contractors, and again, our coalition partners.

Now, that effort is going to be supported by a fusion cell that is being constructed here in Washington, again under the executive agency of the Defense Intelligence Agency. It is made up of experts from around the United States government. And they receive information from the 75th Group now, and they will receive it from the ISG as it stands up. And their job is going to be to do that kind of in-depth analysis that's necessary in order to make this a successful effort over time.

...When one comes across a site where we think that we need to be taking samples, for example, there are roughly four sets of samples taken, one for processing in-theater, two are sent here to the United States, and another one is sent to a non-U.S. laboratory for independent analysis and the verification of the results of those tests. And there is a very strict chain of custody process that is put in place to assure that those samples are not tampered with either in the theater, in transit, when they're in the laboratories, or when the results come back to us here. That's all supplemented, then, as I said a moment ago, by interviewing the personnel who we think are involved. I made mention to you of the subordinate scientists as well as the lead scientists are being interviewed. The regime figures are interviewed. We go through the documents and so forth. And then, if we find we've got to dispose of materials, we do so in a way that is safe for all concerned.

The ISG's main center of activity remained in Iraq, with a headquarters in Baghdad, but it had additional facilities in Qatar. Its collection operation included a joint interrogation debriefing center, a joint materiel exploitation center, chemical and biological intelligence support teams and an ISG operation center. Its main analytic effort was co-located with the CENTCOM forward headquarters in Qatar, along with its combined media processing center. The ISG had liaison elements with CJTF-7 in Kuwait and with other U.S. government agencies inside Iraq, and an intelligence fusion center in Washington, D.C. All of its elements were linked electronically.²⁹

Conversion to a Forensic Search Effort

Somewhat ironically, the Coalition search for Iraq weapons of mass destruction was forced to take on much of the character of the previous UNMOVIC effort. It had to shift from a search for warfighting capability to a much more forensic effort to search through Iraqi records and facilities, a task greatly complicated by its inability to search many key

facilities from looting. Douglas Feith, Under Secretary of Defense for Policy and Lt. General Norman Schwartz, Director of Operations of the Joint Staff, testified to the House International Relations Committee in May that the Bush Administration now estimated that the process of determining Iraq's true level of proliferation could take years, and that no new chemical and biological weapons had yet been found.³⁰ Moreover, the US was forced to allow the International Atomic energy Agency (IAEA) to resume its inspection efforts.³¹

It is still unclear what this search effort will find. In late June, US officials were talking about the need to go through tons of documents. They noted that the US had only taken custody of 69 of some 255 top Iraqi officials that might know something about the Iraqi WMD effort, and only seven of some 3,152 lower ranking officials. They also stated that the US had only conducted meaningful inspections of inspected only 157 of 578 suspect sites.³²

As of July 2003, however, the US search effort had not shown that a single suspect site was a valid military target. It also had found any valid evidence that a significant Iraqi capability to use weapons of mass destruction existed before the war, or that Iraq had any major imminent capability to produce such weapons. The only meaningful discoveries were buried plans and parts for a centrifuge design dating back to 1991, and what appeared to be two trailers designed to produce biological weapons.³³

It seems certain, given the results of the UNSCOM and UNMOVIC effort, that the US will find some evidence of an ongoing program, but it far from clear what kind of Iraqi program and effort will emerge. However, the centrifuge discovery did nothing to shed significant light on recent Iraqi efforts.³⁴ The trailers may well be a more significant discovery, and the CIA has made a powerful case to this effect, but even experts within the US intelligence community – particularly within the State Department -- dispute whether the trailers are really being used for biological weapons purposes.³⁵ This again illustrates the inherent uncertainty surrounding estimates of proliferation and foreign WMD capabilities.

Lessons for the Future

In summary, the end result of the entire intelligence and search effort relating to Iraqi weapons of mass destruction has been to strengthen those who argued against the war, and who have since sought to discredit or block a Coalition-led nation-building effort. It also threatens to be specter that will haunt any future US and allied efforts to deal with the threat posed by proliferation, and particularly in winning for domestic and international political support for military or preemptive action.

The solution is to some extent to admit the scale of problems that currently exist in the collection and analytic effort, and then make major efforts to reduce them. It is also to lay the ground for any future action in a crisis by systematically educating decision makers, the media, and public opinion in the level of uncertainty that is inevitable in such assessments through a series of classified and unclassified intelligence products that are as detailed and objective as possible. Credibility and understanding have to be created over a period of years, not in a crises. Moreover, the US and Britain need to understand that the Iraq War has left a heritage of distrust that now must be overcome.

It is not enough to have a preemptive strategy. The key argument for preemptive attack must be that it is in fact preemptive and that the potential threat is real enough to justify a major war. Legalistic arguments over whether threats must be imminent may have only secondary value in the real world, but the need to unambiguously resolve the kind of uncertainties that surrounded the Iraqi effort in weapons of mass destruction in both the Gulf War and Iraq War is a critical national priority. So is the need to examine far more intrusive methods of data gathering, such as unattended ground sensors. If the choice is between infractions of national sovereignty, and war or unacceptable risks, aggressive intelligence gathering and infractions of national sovereignty are by far the better course,

There are two important corollaries of this lesson. The first is that until this aspect of intelligence can be greatly improved and made far more accurate and reliable, the US, Britain, and other nations must place primary reliance on both operational and national defense and response capabilities. Missile defense is only one of these capabilities and currently may have limited cost-effectiveness. The fact the US could never characterize Iraqi links to terrorism or ability to make covert use of weapons like smallpox is a warning that defense and response must look at the full range of threats and possible asymmetric attacks.

The second corollary is that the problems involved go far beyond any failures on the part of the US. Over a decade of the most intrusive international inspection of a country in history also failed to characterize its efforts in weapons of mass destruction and delivery systems, and failed to disarm Iraq. It is easy to focus on the fact that the US and Britain may have exaggerated the threat and miss the point,

The UN accomplished a great deal, and the work of the IAEA, UNSCOM, and UNMOVIC merit the world's gratitude and respect. What could be done was done. Nevertheless, an intensive international arms control effort using better means of inspection and arms control than cover any other nation in the world was still inadequate. This is a grim warning that major improvement are needed in the scope, intrusiveness, technology, and intelligence support provided for international arms control efforts if they are to be effective, and if they are ever to be an effective substitute for preemptive or other military action.

¹ Many of the comments made in this section are based on interviews with US, British, and Australian officials, officers, and experts after the war, and the author's prior experience in analyzing proliferation. There are many useful press reports that have emerged since the war. In addition to those referenced later in this section, these include Warren P. Strobel and John Walcott, "CIA Lack Info To Counter Claims About Iraqi Weapons," Miami Herald, June 3, 2003; James Risen, "Word that US Doubted Iraq Would Use Gas," New York Times, June 18, 2003; Bruce Auster, Mark Mazetti, and Edward Pound, "Truth and Consequences," US News and World Report, June 9, 2003; Evan Thomas, Richard Wolffe, and Michael Isikoff, "Where are Iraq's WMDs?" Newsweek, June 9, 2003; Michael Duffy, "Weapons of Mass Disappearance," Time, June 9, 2003; James Risen, "Iraq Arms Report Now the Subject of A CIA review," New York Times, June 4, 2003; Maggie Farley, "Blix's Final Words to Security Council are Words of Caution," Los Angeles Times, June 6, 2003; Tony Capaccio, "Pentagon 2002 Study Reported No Reliable Data on Iraq Weapons," Bloomberg.com, June 6, 2003;

² For an interesting discussion of the problems in assessing dual use facilities in Iraq, see Walter Pincus, "weapons Linked to Dual Use Facilities in Iraq," Washington Post, June 2, 2003.

³ For some additional data on this aspect of these assessments made of Iraq, see Bill Gertz, "Iraqi Group Aid CIA Intelligence," Washington Times, June 12, 2003; John Diamond, "Broad Purges Wiped Out Most Iraqis Helping CIA," USA Today, June 17, 2003; John Diamond, "Weak Spy Network Hurt Hunt for Arms," USA Today, June 17, 2003.

⁴ Earlier unclassified CIA reports on problems like the ballistic missile threat often projected alternative levels of current and future capability. The qualifications and possible futures are far less well defined in more recent reports. For example, see CIA, Unclassified Summary of a National Intelligence Estimate, Foreign Missile Developments and the Ballistic Missile Threat Through 2015, National Intelligence Council, December 2001, http://www.cia.gov/nic/pubs/other_products/Unclassifiedballisticmissilefinal.htm.

⁵ There is no way to determine just how much the Special Plans Office team set up within the office of the Secretary of Defense to analyze the threat in Iraq was designed to produce a given conclusion or politicized intelligence. The Department has denied this, and stated that the team created within its policy office was not working Iraqi per se, but on global terrorist interconnections. It also stated that the Special Plans Office was never tied to the Intelligence Collection Program - a program to debrief Iraqi defectors - and relied on CIA inputs for its analysis. It states that simply conducted a review, presented its findings in August 2002, and its members returned to other duties. See Jim Garamone, "Policy Chief Seeks to Clear Intelligence Record," American Forces Information Service, June 3, 2003; and Briefing on policy and intelligence matters, Douglas J. Feith, under secretary of defense for policy, and William J. Luti, deputy under secretary of defense for special plans and Near East and South Asian affairs, June 4, 2003, <http://www.defenselink.mil/transcripts/2003/tr20030604-0248.html>.

Some intelligence experts dispute this view, however, and claim the team's effort was used to put pressure on the intelligence community. Such "B-teams" also have a mixed history. They did help identify an intelligence community tendency to underestimate Soviet strategic nuclear efforts during the Cold War. The threat analysis of missile threats posed to the US by the "Rumsfeld Commission," however, was a heavily one-sided assessment designed to justify national missile defense. Also see Greg Miller, "Pentagon Defends Role of Intelligence Unit on Iraq," Los Angeles Times, June 5, 2003; and David S. Cloud, "The Case for War Relied on Selective Intelligence," Wall Street Journal, June 5, 2003..

⁶ Some press sources cite what they claim is a deliberate effort to ignore a September 2002 DIA report on Iraqi chemical weapons capabilities called "Iraq-Key WMD Facilities-An Operational Support Study." See James Risen, "Word that US Doubted Iraq Would Use Gas," New York Times, June 18, 2003 and Tony Capaccio, "Pentagon 2002 Study Reported No Reliable Data on Iraq Weapons," USA Today, June 6, 2003.

In fact, the unclassified excerpts from the DIA report, show that DIA was not stating that Iraq did not have chemical weapons, but rather that it had, "No reliable information on whether Iraq is producing and stockpiling chemical weapons, or where Iraq has - or will - establish its chemical weapons facilities." The report went on to say that, "although we lack any direct information, Iraq probably possess CW agent in chemical munitions, possibly include artillery rockets, artillery shells, aerial bombs, and ballistic missile warheads. Baghdad also probably possess bulk chemical stockpiles, primarily containing precursors, but that also could consist of some mustard agent of stabilized VX."

If anything, the report is a classic example of what happens when intelligence reports do state uncertainty and of how the user misreads or misuses the result.

⁷ For a detailed analysis of the history and nature of this effort, see Anthony H. Cordesman, Iraq and the War of Sanctions, Westport, Praeger, 1999.

⁸ See Felicity Barringer, "UN Inspectors Say Baghdad Never Resolved Arms Issues," New York Times, June 3, 2003; Maggie Farley, "Blix's Final Words top Security Council on Iraq are of Caution," Los Angeles Times, June 6, 2003; Bob Drogan, "UN Nuclear Experts Back In Iraq," Los Angeles Times, June 6, 2003; "UN Nuclear Team Heads for Iraq," BBC News, June 4, 2003, 0943 GMT.

⁹ Hans Blix, Executive Chairman of UNMOVIC, "Notes for briefing of the Security Council on the thirteenth quarterly report of UNMOVIC," June 5, 2003, <http://www.un.org/Depts/unmovic/>.

¹⁰ Rolf Ekeus, "Iraq's Real Weapons Threat," Washington Post, June 29, 2003, p. B7. For the full text of the report, see the thirteenth report of the Executive Chairman of the UN Monitoring, Verification, and Inspection Commission, S/2003/580, May 30, 2003.

¹¹ In addition to the previous sources, see James Risen, CIA Studying Prewar Reports on Iraqi Threat," New York Times, May 22, 2003, p. 1; Walter Pincus, "Officials Defend Iraq Intelligence," Washington

Post, June 9, 2003; Walter Strobel and John Walcott, "CIA Lacked Info To Counter Claims About Iraq Weapons," Miami Herald, June 3, 2003; David S. Cloud, "Case for War Relied on Selective Intelligence," Wall Street Journal, June 5, 2003; James Risen, "Iraq Arms Report Now the Subject of A CIA Review," New York Times, June 4, 2003; Dan Plesch and Richard Norton Taylor, "Straw, Powell Has Serious Doubts Over Their Iraqi Weapons Claims," The Guardian, May 31, 2003.

¹² In addition to the previous sources, see Walter Pincus and Dana Priest, "Analysts Cite Pressure on Iraq Judgments," Washington Post, June 5, 2003; and Warren P. Strobel and John Walcott, "CIA lacked Info to Counter Claims About Iraqi Weapons," Miami Herald, June 3, 2003.

¹³ Bill Gertz, "Iraqi Group Aided CIA Intelligence," Washington Times, June 12, 2003; Warren Hoge, "Iraq Report Mishandled, Blair Aide Concedes in Letter," New York Times, June 9, 2003; Mark Huban and Mark Turner, "Evidence About Iraqi Uranium Not Fake," London Financial Times, June 6, 2003, p. 3; Walter Pincus, "Officials Defend Iraq Intelligence," Washington Post, June 9, 2003; Andrew Sparrow and Benedict Brogan, "Blair: I have Weapons Proof," London Daily Telegraph, June 2, 2003; Glenn Frankel, "Blair Accused of Exaggerating Claims About Iraqi Weapons," Washington Post, May 30, 2003; John Diamond, "Uranium Reports Doubted Early On," USA Today, June 13, 2003; Walter Pincus, "CIA Says It Cabled Key Data to White House," Washington Post, June 13, 2003.

¹⁴ "Serving Officer was 45-Minute claim Source," Times On Line, June 15, 2003.

¹⁵ John Hendren, "Weapons Reports Called Lacking," Los Angeles Times, June 26, 2003.

¹⁶ Lt. Gen. James Conway, commander, First Marine Expeditionary Force, "Live Briefing From Iraq, May 30, 2003, <http://www.defenselink.mil/transcripts/2003/tr20030530-0229.ht>.

¹⁷ Commanding General, 1st Marine Division, "Operation Iraqi Freedom (OIF): Lessons Learned," MEF FRAGO 279-03, May 29, 2003.

¹⁸ For example, see Seymour M. Hersh, "Annals of National Security: Selective Intelligence," New Yorker, May 12, 2003.

¹⁹ Barton Gellman, "Frustrated, U.S. Arms Team to Leave Iraq: Task Force Unable To Find Any Weapons," Washington Post, May 11, 2003, p. A1.

²⁰ Bob Drogan, "New Hunt for Iraqi Arms Resembles Old," Los Angeles Times, June 18, 2003.

²¹ William J. Broad, "US Civilian Experts Say Bureaucracy and Infighting Jeopardize Search for Weapons," New York Times, April 16th, 2003; Dan Morse, "US Troops Go House to House in Search of Chemical Weapons," Wall Street Journal, April 16, 2003; Judith Miller, "US Inspectors Find No Forbidden Weapons at Iraqi Arms Plants," New York Times, April 16, 2003

²² Barton Gellman, "Covert Unit Hunted for Iraqi Arms," Washington Post, June 13, 2003;

²³ John J. Fialka, "US Readies A Different Army to Search for Weapons in Iraq," Wall Street Journal, April 17, 2003.

²⁴ Barton Gellman, "Frustrated, U.S. Arms Team to Leave Iraq: Task Force Unable To Find Any Weapons," Washington Post, May 11, 2003, p. A1.

²⁵ See Seymour M. Hersh, "Annals of National Security: Selective Intelligence," New Yorker, May 12, 2003, and Barton Gellman, "Frustrated, U.S. Arms Team to Leave Iraq: Task Force Unable To Find Any Weapons," Washington Post, May 11, 2003, p. A1.

²⁶ "Briefing on the Iraq Survey Group," Stephen A. Cambone, under secretary of defense for intelligence, and Army Maj. Gen. Keith W. Dayton, director for operations, Defense Intelligence Agency, May 30, <http://www.defenselink.mil/transcripts/2003/tr20030530-0231.html>.

²⁷ Seymour M. Hersh, "Annals of National Security: Selective Intelligence," New Yorker, May 12, 2003. The best reporting on the issue at this writing, however, can be found in Barton Gellman, "Frustrated, U.S. Arms Team to Leave Iraq: Task Force Unable To Find Any Weapons," Washington Post, May 11, 2003, p. A1.

²⁸ Department of Defense Briefing, Stephen A. Cambone, USD (Intelligence) presenter, May 7, 2003, <http://www.defenselink.mil/transcripts/2003/tr20030507-0158.html>

²⁹ "Briefing on the Iraq Survey Group," Stephen A. Cambone, under secretary of defense for intelligence, and Army Maj. Gen. Keith W. Dayton, director for operations, Defense Intelligence Agency, May 30, <http://www.defenselink.mil/transcripts/2003/tr20030530-0231.html>.

³⁰ Bill Nichols, "Weapons Search Could Take Years," USA Today, May 16, 2003, p. 1; Judith Miller, "Radioactive Material Found at Test Site Near Baghdad," New York Times, May 12, 2003; Barton Gellman, "Seven Nuclear Sites Looted," Washington Post, May 10, 2003, p. 1.

³¹ Bob Drogan, "UN Nuclear Experts Back In Iraq," Los Angeles Times, June 6, 2003; "UN Nuclear Team Heads for Iraq," BBC News, June 4, 2003, 0943 GMT; Bob Drogan, "New Hunt for Iraqi Arms Resembles Old," Los Angeles Times, June 18, 2003. The US Department of Defense explained the role of the IAEA by stating that, "The purpose of the inspection is to inventory and assess the condition of the material that is under IAEA safeguards at the Baghdad yellow-cake storage facility. The material at this facility includes approximately 500 metric tons of safeguarded uranium and several non-fissile radioisotope sources that are not under IAEA safeguards. The uranium is mostly in the form of yellow cake, an isotopically natural form that is an impure oxide. There is a small quantity of low-enriched and depleted uranium. Typically, the IAEA would conduct an NPT safeguards inspection at this location annually. The last inspection was conducted in December of 2002. Given the changed circumstances, the United States has determined it would be helpful to have the IAEA reinventory this location. I would like to underscore, though, that this is a cooperative effort. The coalition will be providing necessary transportation, security and other minimal logistics to the team, which will consist of seven IAEA experts. The safeguards activity will be led by the IAEA under the protection and auspices of coalition forces. To ensure safety and protection, coalition forces will accompany the IAEA at all times. Coalition nuclear experts will also participate in the inspection and the inventory. Upon completion of the inventory, the IAEA will repack the material as necessary, reseal all safeguarded rooms, buildings and containers as appropriate, and the coalition will, as appropriate, assist in this effort. I want to note that this access to the IAEA is not an IAEA inspection pursuant to the U.N. Security Council resolutions and does not set any precedent for future IAEA involvement in Iraq in any disarmament or UNSCR-related activity. And lastly, we expect that the IAEA will share their findings with us as we work cooperatively on this effort." He explained the looting problem as follows: "Tuwaitha, as has been stated earlier, is about a 23,000-acre facility that's about 20 kilometers to the southeast of Baghdad. And Site Charlie, where radiological materials, principally yellow cake were stored, consists of three buildings, and they're surrounded by a fence and a wall of concrete barriers about 12 feet tall on three sides. According to reports from civilians in the area, on or about the 10th of March, Iraqi army forces who were guarding the site reportedly left their weapons -- some of their weapons with the local civilians -- and abandoned the site. We also believe, from talking to the local civilians, that on or about 20 March, the 20th of March, the civilians guarding the site abandoned it also. And, of course, we were conducting our attack across the Kuwaiti border on the 21st. On the 7th of April, U.S. Marines from our land component first arrived at Tuwaitha Site Charlie and assumed the security, and remained there until the 20th of April, when they turned over control of the facility to U.S. Army soldiers from another unit. And Tuwaitha Site Charlie has been secured and under the positive control of U.S. forces since the 7th of April. When the U.S. forces first arrived, they found the Tuwaitha site facility, Tuwaitha Charlie facility, in disarray. The front gate was open and unsecured, and the fence line and barrier wall on the back side of the facility had been breached. And the troops reported that there were no seals on the exterior doors of the buildings. But since taking control of Tuwaitha Site Charlie, no thieves or looters have been allowed inside the facility. We have taken several positive steps to try to mitigate any risks from Tuwaitha Charlie to either the soldiers or the population in the surrounding area or to the environment. And I'll list of a couple of those. Between the 8th and 10th of April, a team conducted an initial survey outside the buildings at Tuwaitha Charlie, and they determined that additional exploitation was required beyond their capability. And so the exploitation task force, the folks responsible for that operation, decided to keep the security at the site and to deny access to anyone except properly trained personnel. On the 18th of April, some Iraqi scientists from the Iraqi Atomic Energy Commission, who had worked at the facility, were allowed in to check the site and to mitigate any radiological hazards within their capability. And they moved some sources into a building from the concrete outside. On the 12th of May, our Threat Reduction Agency personnel arrived in Iraq and began planning for its operation at Tuwaitha Charlie. And between the 15th and 20th of May, our task force disablement and elimination team conducted its technical assessment and an inventory of what was there. And from what we know at this time, the quantity of materials we have found at the site exceeds the quantity of materials that we had assessed would be present at the site. On the 18th of May, a direct support team teamed up with the Coalition Provisional Authority personnel and some additional people from IAEC, the Iraqi Atomic Energy Commission, and they decided to conduct a buy-back operation because the troops were starting to hear stories that some of the barrels -- there were barrels in the local community that resembled those that were at the site. The team went to two villages and offered to pay \$3 a piece for any items that may have come from the facility, and they pointed out what these items might look like. The team recovered over 100

barrels of various sizes and shapes and condition, as well as five radioactive sources and some other items. But virtually none of the people admitted to having taken the items from the facility. They said they had bought them. And indeed, barrels like these are ubiquitous around Iraq. And although there are some similar containers available in markets -- and the same type barrels are sometimes found in people's homes. The team checked the items for radioactivity and also checked the people to reassure them. None of the people registered any radiation above normal background levels. And these barrels of various sizes and shapes and colors -- none of them registered more than background level or slightly above normal background radiation. They then transported the items to Tuwaitha Charlie and secured them. And so, there's no way to tell at this point if they came from Tuwaitha, but they were taken back there just in case, for safety. The technical assessment also determined that outside the fence line at Tuwaitha Charlie, there was negligible risk to the soldiers guarding the site and to the population within a wide area out to a kilometer from the fence line. But the site had apparently been looted before U.S. soldiers arrived. Uranium materials and some other stored materials had been dumped on the floor in places, and in one building, there were a number of radiological sources scattered around the floor. Radiological readings measured only background levels out at the fence line, and readings at the buildings and inside were somewhere between two and 10 times background readings -- background readings. We've been conducting weekly meetings with the Iraqi Atomic Energy Commission, with our coalition forces experts and with the Coalition Provisional Authority experts to continue the way ahead in a joint manner. We've developed a plan and objectives for improvement of the site. This week, the Center for Health Promotion and Preventive Medicine, commonly called CHPPM, arrives from the United States. And they'll conduct a risk assessment on the soldiers and Marines who were there and those who are still there. And the purpose of that is to reassure those soldiers and Marines, but also to determine what, if any, risks they might have occurred -- incurred, rather, from being at -- near the site. Together with the Iraqi Atomic Energy Commission and the Iraqi Ministry of Health, CHPPM will also help to conduct a wider search and a health risk assessment of the surrounding civilian area, out to about five kilometers. Iraqi scientists and physicians began that work this week by conducting an initial assessment and a census of those people out there. We also formed a joint team with the Iraqi experts and repaired and sealed the buildings as a further measure of safety, so that even if the weather changed to something severe that we hadn't expected, the buildings would still be secure. We've also recruited a 100-man Iraqi guard force. And we're in the process of training them so that once they meet standards, they'll eventually take over the security. And of course, IAEA arrives in Baghdad this weekend to begin its work. And that's about all I have for opening comments." (Senior Defense Official, "Background briefing on the upcoming IAEA nuclear safeguards inspection and the Tuwaitha Nuclear Facility in Iraq," June 5, 2003, <http://www.defenselink.mil/transcripts/2003/tr20030605-0250.html>.)

³² Judy Keen, "US: Weapon Search has Barely Begun," USA Today, June 20, 2003.

³³ See William J. Broad, "US, In Assessment, Terms Trailers Germ Laboratories," New York Times, May 29, 2003.

The CIA summarized the importance of this discovery as follows in a report on Iraqi Mobile Biological Warfare Agent Production Plants dated May 28, 2003 (http://www.cia.gov/cia/reports/iraqi_mobile_plants/index.html)

"Coalition forces have uncovered the strongest evidence to date that Iraq was hiding a biological warfare program.

- Kurdish forces in late April 2003 took into custody a specialized tractor-trailer near Mosul and subsequently turned it over to US military control.
- The US military discovered a second mobile facility equipped to produce BW agent in early May at the al-Kindi Research, Testing, Development, and Engineering facility in Mosul. Although this second trailer appears to have been looted, the remaining equipment, including the fermentor, is in a configuration similar to the first plant.
- US forces in late April also discovered a mobile laboratory truck in Baghdad. The truck is a toxicology laboratory from the 1980s that could be used to support BW or legitimate research.

The design, equipment, and layout of the trailer found in late April is strikingly similar to descriptions provided by a source who was a chemical engineer that managed one of the mobile plants. Secretary

of State Powell's description of the mobile plants in his speech in February 2003 to the United Nations (see inset below) was based primarily on reporting from this source.

Secretary Powell's speech to the UN in February 2003 detailed Iraq's mobile BW program, and was primarily based on information from a source who was a chemical engineer that managed one of the mobile plants.

- Iraq's mobile BW program began in the mid-1990s—this is reportedly when the units were being designed.
- Iraq manufactured mobile trailers and railcars to produce biological agents, which were designed to evade UN weapons inspectors. Agent production reportedly occurred Thursday night through Friday when the UN did not conduct inspections in observance of the Muslim holy day.
- An accident occurred in 1998 during a production run, which killed 12 technicians—an indication that Iraq was producing a BW agent at that time.

Analysis of the trailers reveals that they probably are second- or possibly third-generation designs of the plants described by the source. The newer version includes system improvements, such as cooling units, apparently engineered to solve production problems described by the source that were encountered with the older design. The manufacturer's plates on the fermentors list production dates of 2002 and 2003—suggesting Iraq continued to produce these units as late as this year.

The source reported to us that Iraq in 1995 planned to construct seven sets of mobile production plants—six on semitrailers and one on railroad cars—to conceal BW agent production while appearing to cooperate with UN inspectors. Some of this information was corroborated by another source.

- One of the semitrailer plants reportedly produced BW agents as early as July 1997.
- The design for a more concealable and efficient two-trailer system was reportedly completed in May 1998 to compensate for difficulties in operating the original, three-trailer plant.
- Iraq employed extensive denial and deception in this program, including disguising from its own workers the production process, equipment, and BW agents produced in the trailers.

Examination of the trailers reveals that all of the equipment is permanently installed and interconnected, creating an ingeniously simple, self-contained bioprocessing system. Although the equipment on the trailer found in April 2003 was partially damaged by looters, it includes a fermentor capable of producing biological agents and support equipment such as water supply tanks, an air compressor, a water chiller, and a system for collecting exhaust gases.

The trailers probably are part of a two- or possibly three-trailer unit. Both trailers we have found probably are designed to produce BW agent in unconcentrated liquid slurry. The missing trailer or trailers from one complete unit would be equipped for growth media preparation and postharvest processing and, we would expect, have equipment such as mixing tanks, centrifuges, and spray dryers. These other units that we have not yet found would be needed to prepare and sterilize the media and to concentrate and possibly dry the agent, before the agent is ready for introduction into a delivery system, such as bulk-filled munitions. Before the Gulf war, Iraq bulk filled missile and rocket warheads, aerial bombs, artillery shells, and spray tanks.

The majority of our information on Iraq's mobile program was obtained from a chemical engineer that managed one of the plants. Three other sources, however, corroborated information related to the mobile BW project. The second source was a civil engineer who reported on the existence of at least one truck-transportable facility in December 2000 at the Karbala ammunition depot. The third source reported in 2002 that Iraq had manufactured mobile systems for the production of single-cell protein on trailers and railcars but admitted that they could be used for BW agent production. The fourth source, a defector from the Iraq Intelligence Service, reported that Baghdad manufactured mobile facilities that we assess could be used for the research of BW agents, vice production.

Our analysis of the mobile production plant found in April indicates the layout and equipment are consistent with information provided by the chemical engineer, who has direct knowledge of Iraq's mobile BW program. The source recognized pictures of this trailer, among photographs of unrelated equipment, as a mobile BW production plant similar to the one that he managed, even pointing out specific pieces of equipment that were installed on his unit.

Common elements between the source's description and the trailers include a control panel, fermentor, water tank, holding tank, and two sets of gas cylinders. One set of gas cylinders was reported to

provide clean gases—oxygen and nitrogen—for production, and the other set captured exhaust gases, concealing signatures of BW agent production.

The discovered trailers also incorporate air-stirred fermentors, which the source reported were part of the second-generation plant design. Externally, the trailers have a ribbed superstructure to support a canvas covering that matches the source's description. Data plates on the fermentors indicate that they were manufactured at the same plant the source said manufactured equipment for the first generation of mobile plants. The plant also was involved in the production of equipment used in Iraq's pre-Gulf war BW program.

Employees of the facility that produced the mobile production plants' fermentor revealed that seven fermentors were produced in 1997, one in 2002 and one in 2003. The seven fermentors appear to corroborate the source's reporting that Iraq in the mid-1990s planned to produce seven mobile production plants. The two fermentors produced in 2002 and 2003 reportedly were sent to the al-Kindi Research, Testing, Development, and Engineering facility in Mosul—the site where the second trailer was found—and probably are the fermentors found on the trailers in US custody.

There are a few inconsistencies between the source's reporting and the trailers, which probably reflect design improvements. The original plants were reported to be mounted on flatbed trailers reinforced by nickel-plate flooring and equipped with hydraulic support legs. The discovered plants are mounted on heavy equipment transporters intended to carry army tanks, obviating the need for reinforced floors and hydraulic legs. The trailers have a cooling unit not included in the original plant design, probably to solve overheating problems during the summer months as described by the source. The original design had 18 pumps, but the source mentioned an effort to reduce the number to four in the new design. The trailer discovered in late April has three pumps.

Coalition experts on fermentation and systems engineering examined the trailer found in late April and have been unable to identify any legitimate industrial use—such as water purification, mobile medical laboratory, vaccine or pharmaceutical production—that would justify the effort and expense of a mobile production capability. We have investigated what other industrial processes may require such equipment—a fermentor, refrigeration, and a gas capture system—and agree with the experts that BW agent production is the only consistent, logical purpose for these vehicles.

The capability of the system to capture and compress exhaust gases produced during fermentation is not required for legitimate biological processes and strongly indicates attempts to conceal production activity. The presence of caustic in the fermentor combined with the recent painting of the plant may indicate an attempt to decontaminate and conceal the plant's purpose. Finally, the data plate on the fermentor indicates that this system was manufactured in 2002 and yet it was not declared to the United Nations, as required by Security Council Resolutions.

Some coalition analysts assess that the trailer found in late April could be used for bioproduction but believe it may be a newer prototype because the layout is not entirely identical to what the source described.

A New York Times article on 13 May 2003 reported that an agricultural expert suggests the trailers might have been intended to produce biopesticides near agricultural areas in order to avoid degradation problems. The same article also reported that a former weapons inspector suggests that the trailers may be chemical-processing units intended to refurbish Iraq's anti-aircraft missiles.

Biopesticide production requires the same equipment and technology used for BW agent production; however, the off-gas collection system and the size of the equipment are unnecessary for biopesticide production. There is no need to produce biopesticides near the point of use because biopesticides do not degrade as quickly as most BW agents and would be more economically produced at a large fixed facility. In addition, the color of the trailer found in mid-April is indicative of military rather than civilian use.

Our missile experts have no explanation for how such a trailer could function to refurbish anti-aircraft missiles and judge that such a use is unlikely based on the scale, configuration, and assessed function of the equipment. The experts cited in the editorial are not on the scene and probably do not have complete access to information about the trailers.

Senior Iraqi officials of the al-Kindi Research, Testing, Development, and Engineering facility in Mosul were shown pictures of the mobile production trailers, and they claimed that the trailers were used to chemically produce hydrogen for artillery weather balloons. Hydrogen production would be a plausible cover story for the mobile production units.

The Iraqis have used sophisticated denial and deception methods that include the use of cover stories that are designed to work. Some of the features of the trailer—a gas collection system and the presence of caustic—are consistent with both bioproduction and hydrogen production.

The plant's design possibly could be used to produce hydrogen using a chemical reaction, but it would be inefficient. The capacity of this trailer is larger than typical units for hydrogen production for weather balloons. Compact, transportable hydrogen generation systems are commercially available, safe, and reliable.

We continue to examine the trailer found in mid-April and are using advanced sample analysis techniques to determine whether BW agent is present, although we do not expect samples to show the presence of BW agent. We suspect that the Iraqis thoroughly decontaminated the vehicle to remove evidence of BW agent production. Despite the lack of confirmatory samples, we nevertheless are confident that this trailer is a mobile BW production plant because of the source's description, equipment, and design.

- The initial set of samples, now in the United States, was taken from sludge from inside the fermentor, liquid that was in the system and wipes from the equipment. A sample set also was provided to a coalition partner for detailed laboratory analysis.
- As we expected, preliminary sample analysis results are negative for five standard BW agents, including *Bacillus anthracis*, and for growth media for those agents. In addition, the preliminary results indicate the presence of sodium azide and urea, which do not support Iraqi claims that the trailer was for hydrogen production.
- Additional sample analysis is being conducted to identify growth media, agent degradation products, and decontamination chemicals that could be specific for BW agents, as well as to identify a chemical associated with hydrogen production.

Although individuals often interchangeably use the terms production plant and laboratory, they have distinct meanings. The mobile production plants are designed for batch production of biological material and not for laboratory analysis of samples. A truck-mounted mobile laboratory would be equipped for analysis and small-scale laboratory activities. US forces discovered one such laboratory in late April.

The mobile laboratory—installed in a box-bodied truck—is equipped with standard, dual-use laboratory equipment, including autoclaves, an incubator, centrifuges, and laboratory test tubes and glassware. These laboratories could be used to support a mobile BW production plant but serve legitimate functions that are applicable to public health and environmental monitoring, such as water-quality sampling.”

One Iraqi defector has made claims of a much more serious ongoing biological weapons effort but these have not been validated. See Bob Drogin, “Iraq Had Secret Labs, Officer Says,” Los Angeles Times, June 8, 2003.

The CIA issued the following statement on the discovery of the centrifuge on June 26, 2003 (http://www.cia.gov/cia/wmd/iraqi_centrifuge_equipment.htm):

- The head of Iraq’s pre-1991 centrifuge uranium enrichment program, Dr. Mahdi Shukur Ubaydi, approached U.S. officials in Baghdad and turned over a volume of centrifuge documents and components he had hidden in his garden from inspectors since 1991. Dr. Ubaydi said he was interviewed by IAEA inspectors - most recently in 2002 - but did not reveal any of this.
- Dr. Ubaydi told us that these items, blue prints and key centrifuge pieces, represented a complete template for what would be needed to rebuild a centrifuge uranium enrichment program. He also claimed this concealment was part of a secret, high-level plan to reconstitute the nuclear weapons program once sanctions ended.
- This case illustrates the extreme challenge we face in Iraq as we search for evidence of WMD programs that were designed to elude detection by international inspectors.
- We are working with Dr. Ubaydi to evaluate the equipment and documents he provided us.
- We are hopeful that Dr. Ubaydi’s example will encourage other Iraqis with knowledge of Saddam’s WMD programs to come forward.

³⁴Joby Warrick, “Iraqi Scientist Turns Over Nuclear Plans, Parts,” Washington Post, June 26, 2003, p. 14.

³⁵Douglas Jehl, “Agency Disputes View of Trailers as Labs,” New York Times, June 26, 2003.