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The Military Effectiveness Of Desert Fox:

**A Warning About the Limits of the
Revolution in Military Affairs and
Joint Vision 2010**

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December 26, 1998

This is a rough draft of a work in progress. The author would appreciate comments, and will revise this paper extensively, as further damage assessment data become available. Please check CSIS.ORG to find the latest version

We need to take a hard and very realistic look at the preliminary lessons of Desert Fox. It is now being touted as a triumph of military effectiveness, but the reality may well be just the opposite. It may be a warning that the so-called “revolution in military affairs” (RMA) is a dangerous illusion, and that the narrow focus of plans like Joint Vision 2010 puts an emphasis on conventional war fighting that ignores strategic and grand strategic realities.

To put these issues in perspective, there is always a tendency to act on the lessons of the last war, particularly when it is a great victory. We won Desert Storm with great decisiveness, with astounding effectiveness, and with almost no losses. Our victory validated much of our weaponry and military technology in terms of the value of precision weapons, advanced fire control and sensor systems, and the ability to operate deep into a heavily defended battlefield. Our only major limits were in targeting capability; battle management; command, control, communications and computers; intelligence; strategic reconnaissance (C⁴I/SR), and battle damage assessment.

The “revolution in military affairs” is in many ways an attempt to react to the lessons of that victory. In essence, the RMA postulates a future in which extremely advanced precision guided weapons and smart area munitions interact with greatly improved in targeting capability; battle management; command, control, communications and computers; intelligence; strategic reconnaissance (C⁴I/SR), and battle damage assessment capabilities. In the world of the RMA, we can target almost instantly; kill with extreme lethality all over the battlefield during night and day; survive through stealth, maneuver, and superior ranges of engagement; and shift our tactics and focus of maneuver with high speed on the basis of nearly perfect real-time battlefield awareness and battle damage assessment.

The Strengths and Weaknesses of the Gulf War

These are all noble goals, but they assume that we are able to define and locate a conventional enemy in an almost purely military conflict. We had such an enemy in the Kuwait Theater of Operations during the Gulf War. Our task was to kill an exposed army in the field, defeat an enemy air force that actively engaged us, and suppress or destroy his air defenses. We did so with great efficiency even in 1991. We destroyed between 35-40% of his major deployed land and air combat equipment. Even in Desert Storm, however, we quickly came up against the major limits in the world the RMA is trying to create.

Decisive tactical victory is not a substitute for the political mastery of war. We had no clear grand strategic objective beyond liberating Kuwait, we had no clear goal for conflict termination beyond inflicting damage, and we could never establish any of the facts needed to know the political impact of our war fighting on Saddam’s troops, the security of his regime, and the stability of Iraq.

We also failed in most aspects of our strategic campaign. The Gulf War Airpower Survey. Shows that the entire Coalition flew 117,833 sorties and the US flew 101,370. The US flew 42,240 offensive sorties out of this total, and launched around 333 cruise missiles, of which 282 were SLCMs. The vast majority of the offensive sorties were either air defense suppression (4,900) or against ground troops (23,430) and these were the most effective. Another 7,200 were

uncategorized, but largely struck at tactical targets. The rest of the strikes included the cruise missile strikes, 3,790 air sorties against military strategic targets, and 2,830 sorties against civil strategic targets. The US flew around 200 strategic sorties against centers of government, 1,500 against command and control facilities, 540 against POL facilities, 975 against military industrial targets, and 970 against nuclear, chemical, and biological targets.

Many strategic cruise missile strikes and air sorties had real impact, particularly against major fixed command and control facilities, bridges and major road facilities, and POL facilities. Most were either a failure or very limited success. Our strikes against the government did weaken Iraq somewhat although they had no real impact on Iraqi behavior. Most of our strikes on military industrial targets, however, had very little lasting effect. Our sorties against nuclear, chemical, and biological targets were a dismal failure. We did not identify over 80% of the actual Iraqi facilities, our most successful strike against nuclear facilities were an accidental hit by a diversionary strike against an uncategorized target, we hit no major missile or biological warfare site, and over 95% of Saddam's biological and chemical weapons and missile forces survived until the end of the war. We also flew around 1,460 sorties in a fruitless Scud hunt which never scored one confirmed hit against a Scud missile or missile launcher.

The Revolution in Military Affairs and Joint Vision 2010 as Threats to the US

We did not find out the full extent of these problems until nearly half a decade after the war, when we discovered the true scale of Iraq's biological and chemical programs. They are a warning, however, that the RMA can be blind and stupid in political and strategic terms even if it is fully successful in terms of destroying an exposed ground force and regular air force, and suppressing air defenses.

They are also a warning that killing exposed tanks and airplanes, winning air-to-air combat, destroying hangers and exposed ground-based air defenses is no guarantee of what will happen if we are fighting a guerilla or unconventional war, and that giving modern warfare a meaningful strategic outcome is a major challenge. The RMA has no answers as to what the importance is of any given political and economic target. It postulates a solution to knowing what is in given buildings and facilities, and its importance, with no guarantee of a feasible solution. It has no real solution to dispersion, hiding behind civilians and in civilian facilities, skillful deception, riding out attacks passively, and wars which are primarily political in character.

The RMA, however, is only part of the problem. "Joint Vision 2010" is essentially a military doctrine which seeks to use the RMA to substitute for a lack of adequate force numbers, the real-world inefficiency and uncertainty of war, and adequate defense spending and to do so by a giant committee of military services who are privately competing desperately for money. Like the RMA, it essential ignores unconventional warfare, most of the political and grand strategic dimension of war, and the real-world problems in going beyond attacks on exposed regular military forces.

Equally important, "Joint Vision 2010" ignores the real world problems of money and all of the historical uncertainties inherent in actually deploying advanced military technology in the field at the proper time and with the estimated effectiveness. The US is, after all, a country that

has never deployed a single major combat system to the troops in fully combat effective form in the last quarter century. It has taken a minimum of three years after the initial deployment to bring most recent new systems up to adequate levels of reliability and effectiveness. Virtually every major weapon has required a stream of continuing upgrades and fixes, usually based on years of field experience. Our test and evaluation methods have never proved adequate before IOC, and we have had to restructure our doctrine and C⁴I/SR systems in unanticipated ways for virtually every major weapon. In many ways, both the RMA and Joint Vision 2010 are the height of hubris even if we ignore their indifference to the political dimension of war and grand strategy.

“Joint Vision 2010” also ignores the price tag of the RMA. It is not tied to clear force plans and levels of defense spending. Instead, it postulates strategic concepts that end up asking our military services to do more and more without honestly assessing the dangers in trying to do it with less and less. The US may be the world’s only super power, but it is now spending less on defense as a percentage of the federal budget and total economy than at any time since the Great Depression and the height of American isolationism.

We are not facing up to the human costs of the RMA and Joint Vision 2010. Our military and the civil servants in our national security system are grossly underpaid by comparable standards in the private sector. We are cheating our military out of their retirement benefits, we are not funding proper levels of readiness, and we are grossly over-deploying them outside the United States and away from their families. We are treating the all-volunteer force structure as if the men and women who put their lives on the line were low-grade foreign mercenaries. Secretary Cohen has just proposed some fixes for the pay and retirement side of these problems, but they will not go into effect until January 1, 2000 at the earliest, they are too little and too late, and they will do nothing to solve the over-deployment problem.

Most important, any chance for the success of the RMA and Joint Vision 2010 depends on technical superiority and the best possible military equipment. We are not paying for it. The Joint Chiefs have calculated that we need to spend \$75 billion a year on military modernization at a time we are averaging a little over \$40 billion. They have not presented this figure formally to the President because they know it is politically unacceptable, but they have presented figures of \$60-65 billion. President Clinton’s solution has been dishonest to the point of being repellent. He is budgeting for such expenditures, but only once he has left office. In effect, he has presented his successor with the bill for what he should have been spending for the last six years.

The Republican controlled Congress has been no better. For all its posturing, it raises defense spending to waste it on pork, and holds manpower and readiness hearings to gain partisan political advantage and then fails to act. If President Clinton sometimes seems a weak commander-in-chief, Republican leaders like Trent Lott are equally weak. They symbolize the new kind of corruption in the Congress that substitutes pork and personal political advantage for the old form of corruption that focused on personal gain. In fact, Republicans and Democrats alike seem to have made pork and the appropriations process the center of Congressional activity, ignoring our real national security interests.

Enter Desert Fox

So much for the background, what about Desert Fox? Only preliminary data are available, but the Pentagon has reported that 415 cruise missiles were fired during the campaign, including 325 Tomahawks fired by U.S. Navy forces and 90 heavier cruise missiles deployed from Air Force B-52s. These firings drew down on a pre-Desert Fox inventory of 2,500 SLCMs (1,725 Block III and 849 Block IV) and 239 CALCMs, 198 with 3,000-pound warheads and 41 with 2,000-pound warheads. Damage assessment reports on December 21 claimed 85% accuracy for the TLAM. No figures were provided on the CALCM.

The offensive involved 650 aircraft missions, including 32 sorties by 12 British Tornado fighter-bombers. Iraq says its gunners shot down more than 100 Tomahawks. In addition to the cruise missiles, there were undisclosed numbers of laser-guided bombs and other ordnance. In their first use against a real target, two B-1s bomb a large military complex near Baghdad. No sorties were flown during daytime, a pattern established early in Desert Storm.

British forces flew 32-50 sorties with Tornado GR1 fighters from Kuwait. During the fourth night of attacks, for example, 12 Tornados flew 24 missions, attacking a large military airfield and a complex near the city of Al Kut in southern Iraq. During previous sorties, British forces struck the Tallil air base in southwestern Iraq. Royal Air Force spokesman Group Capt. Bryan Collins says four Tornados were en route to Iraq to bomb Republican Guard positions when the stand-down order reached British forces based in Kuwait. He said the fighters were recalled. Not a single U.S. or British casualty is reported after about 70 hours of intensive air strikes involving 650 sorties against nearly 100 targets. A total of 415 cruise missiles were launched, Pentagon officials said

Desert Fox Versus Desert Storm

To put these numbers in further perspective, a total of 2,400 aircraft (1,800 US) were involved in Desert Storm (January 16-February 28, 1991). They flew a total of 118,000 sorties, 42,000 of which were offensive, against 777 fixed targets. They dropped about 162,000 unguided dumb bombs and used 9,500 smart weapons. The data in Table One are drawn from work by Elliot Cohen and the Department of Defense, and produce the following rough comparisons:

Table OneDesert Storm, Deliberate Force, and Desert Fox

	<u>Desert Storm</u> Gulf War 1/16-2/28/91	<u>Deliberate Force</u> Bosnia 8/29-14/9/95	<u>Desert Fox</u> Iraq 12/16-12/20/98
<u>Total Aircraft</u>	2400	300	213+
US	1800	200+	201+
<u>Total Munitions Used</u>			
Cruise missiles	333	23	425+ (90 CLCM) 425 SLCM)
Guided Smart Weapons	9500	700	90%+
Unguided "Dumb" Weapons	162,000	1,025	(total of
<u>Total Strikes</u>	42,600	-	1,075-1,165
Air	42,000		300 night sorties 600 pieces of ordnance
<u>Targets/Strikes</u>			
Weapons of Mass Destruction	32/9670	-	11/-
Command & Control	163/1500	-	20/-
Leadership/Government	45/200	-	19/-
POL	28/540	-	1/-
Missiles	61/1,460	-	11/-
SAM/IADS	120/1,730	-	32/-
Military Industry	25/975	-	1/-

The Political Nature of the Targets and the Uncertainty Factor

The Pentagon reported on December 20 that the strikes during Desert Fox was targeting slightly over 100 sites in President Saddam Hussein's political and military infrastructure and suspected sites for the production or storage of weapons of mass destruction. The sites targeted during the four-night assault included many targets where the political dimension was far more important than any direct impact on war fighting and where the ability to see into a building, to know its contents in real-time, to fully understand dispersal and redundancy, and know the longer term political and strategic impact of damage were critical.

Typical sites included:

- *Baghdad: Directorate of Military Intelligence, Special Republican Guard barracks, Republican Guard headquarters, TV station, Communications center, Air Defense Center, Special Security Organization, Baath Party headquarters, Intelligence Service, Al Karama and Al Kindi missile research and development facilities, Baghdad Museum of Natural History, Ministry of Labor and Social Affairs, Al Mustansiriya University*
- *Tikrit: Al Sahara Airfield, Republican Guard headquarters, Al Bakr air base*

- *Mosul: Missile research and development facility, air base, two army bases, Republican Guard headquarters*
- *Taji: military air base, missile design and production facility*
- *Samarra: Air defense sites*
- *Jabul Makhul: Presidential palace that covers 10 square miles and includes 90 structures, suspected nuclear/chemical weapons site, Republican Guard headquarters*
- *Al Qurnah: Communications-related sites*
- *Ash Shuaybah: Radar site*
- *Ash Rumaylah: Communications-related site*
- *Al Kut: Airfield, military complex*
- *Ibn Al Haytham: missile storage facility in southern Iraq*
- *Basra: Oil refinery*

Desert Fox and Damage Assessment

Some things about Desert Fox are already given. Iraq did not fight back during Desert Storm, it rode out the attack. The US did not target the major weapons of the Iraqi army, virtually all of its combat aircraft, and most of its actual air defense weapons. As a result, the Iraqi order of battle is almost exactly the same as it was before Desert Fox. The US did hit headquarters and barracks for the intelligence services, Special Republican Guards, and Republican Guards. It attempted to target and kill personnel in military intelligence, the Special Security Organization, and Special Republican Guards the first night. After that time it assumed that most facilities would have limited manning. A point to remember, the largest buildings of the Special Republican Guards have about 400 personnel. The average buildings have 200. Assuming that we had perfect success and all buildings were fully occupied and all the occupants were killed on the first night, we would produce a maximum of 2,600 casualties out of force of 30,000.

The US also did not target major dual-use facilities that can be used for the production of chemical and biological weapons because of their political sensitivity and the risk of collateral damage. It had no way to target dispersed missiles, and production equipment and weapons for missiles, and chemical, biological, and nuclear weapons. It did strike at concealment sites, but to punish – not because it believed there was equipment and weaponry present. As a result, the only major impact on Iraq's capability to proliferate lay in the attack on missile programs highlighted by Secretary Cohen.

In short, Desert Fox proved to be precisely the kind of political and strategic “war” that the RMA and Joint Vision 2010 largely ignore. In purely military terms, even perfect execution

of the strikes could at most produce a “1” on a scale out of “ten” in terms of damage to conventional military forces and the ability to proliferate. Even before one examines battle damage assessment claims, it is clear that the test of Desert Fox has to be what it did or did not do to reshape Iraqi behavior, and its impact on the overall US strategic position in the Gulf, Middle East, and the world.

It is also now a given that the US has ended up with very limited support from its Arab allies, broad hostility in the Arab world, serious questions from many allies and the rest of the developing world, and serious problems with Russia, China, and France. From a political and grand strategic perspective, the US may well have lost Desert Fox at the political level. Saddam may end up with no or only an illusory inspection regime, and with steadily hardening outside opposition to the use of force, more sympathy in lifting sanctions, and the feeling he won militarily by riding out the attack. Yes, he has suffered, but his score is probably six out of ten for three out of ten for the US. These factors alone reinforce the judgment that Desert Fox may prove the RMA and Joint Vision 2010 to be tactically brilliant in some contingencies, but strategically blind and stupid.

Damage Assessment on December 17th

The course of damage assessment during Desert Fox is equally troubling. Desert Fox began with more than 200 cruise missile strikes and more than 70 Navy aircraft sorties. The first US cruise missile and air strikes hit Iraq just before 1 a.m. (2200 GMT on Dec 16). Sirens in Baghdad sound the all-clear at 6:40 a.m. (0340 GMT) after raids lasting about six hours. US Defence Department officials reported in a press conference that the first wave of attacks involved more than 200 cruise missiles followed by bombing raids by attack aircraft including F-14 and F-18 fighter aircraft, and EA-6B aircraft with HARM high speed anti-radiation missiles from the USS Enterprise. Some dozen F-16 and A-10 fighters in Kuwait and four B-1s from Oman are not used until the next day. The US Central Command (USCENTCOM) cites "host-nation sensitivities" as a reason not to provide a precise breakdown of where US warplanes in the region are based.

By the morning of December 17, Desert Fox had already launched much more serious attacks on Iraq than any strikes since the Gulf War. In June 1993, the United States fired 23 cruise missiles at Iraqi intelligence headquarters in Baghdad in retaliation for an alleged plot to assassinate former President Bush. In September 1996, 27 cruise missiles were launched against military targets in southern Iraq in retaliation for the movement of Iraqi troops against Kurds in northern Iraq.

Fighters and bombers at bases in Bahrain, Kuwait and Oman joined in the campaign by the evening of December 17. They include four B-1 bombers in Oman, the first time those advanced aircraft have joined in a combat operation. The 60 F-16 and F-15 fighters in Saudi Arabia remain grounded, although Saudi Arabia permits refueling and AWACS flights. Saudi Arabia has repeatedly refused to permit attacks Iraq to be launched from its soil since October, 1997.

Secretary William Cohen reported at an early afternoon press conference on December 17th that, “There have been no American casualties and we are achieving good coverage of our

targets. Our targets include Iraq's air defense system, its command-and-control system, airfields and other military infrastructure and facilities." Cohen and General Henry Shelton, chairman of the Joint Chiefs of Staff, showed enlarged photographs of the military intelligence headquarters and Republican Guard barracks in the Baghdad area. The aerial pictures showed intact buildings before the raids and rubble afterward.

Senior officials said on background, however, that the strikes will probably leave the United States with little ability to closely monitor Iraq's capability to develop chemical, biological and nuclear weapons, and that the attack will almost certainly mean the end of the 7-year-old UN weapons inspection program in Iraq, and will force the United States to maintain a large military presence in the Gulf region for at least several more years. While senior US officials state that the air strikes will degrade Iraq's programs to make poison gas and nuclear weapons, they acknowledge that the weapons programs would continue and perhaps accelerate after the attacks end.

Damage Assessment on December 18th

The first detailed damage assessments were released during a Pentagon Press conference on Friday, December 18. General Henry Shelton, the chairman of the Joint Chiefs of Staff, introduced the briefing by saying that more cruise missiles were launched in the first two days of the air campaign than the 290 that attacked Iraq in 1991. He stated that the targets included military command centers, missile factories, television and radio transmitters and jammers, bases of elite Republican Guard units in Baghdad and Tikrit, air defenses, headquarters and the barracks and equipment of the Special Republican Guards and State Security Organization, the headquarters of the Military Intelligence, and units that help Iraq build, protect and use weapons of mass destruction. Missiles and bombers also strike airfields and an oil refinery in the southern Iraq city of Basra, which being used for oil exports in violation of UN sanctions. "We have had some very good success with our strikes, but not all of them have gone exactly as planned."

Thomas Wilson, Director of Intelligence for the Joint Staff, reported that Iraq had yet to fire any surface-to-air missiles at the attacking aircraft. One reason was Iraqi reluctance to expose hard-to-replace military equipment to attack; another was the destruction of air defense radar systems during the first phases of the strike. Wilson stated that Iraq's southern air defense system "has been degraded.... It has not been completely destroyed." Wilson showed charts indicating only a handful of targets were judged to have been destroyed. Others registered light, moderate or severe damage, with some misses and many still being assessed using reconnaissance photos. Vice Admiral Scott Fry, Director of Operations, added that, "If there is any surprise it's the complete lack of response" by Iraqi forces.

The Pentagon then released initial first stage battle damage assessments. These reported that that 89 targets had been struck. It estimated that 8 had been destroyed completely, including an Iraqi air defense site; 10 were severely damaged, including the Iraqi military intelligence headquarters; 18 were moderately damaged; 8 were lightly damaged, and 12 had not been damaged at all. The Defense Department said it had no damage assessments yet for 33 other targets, including the Basra refinery and several facilities believed to have been used for the production of chemical and biological weapons.

The initial targets included 83 facilities:

- 27 surface-to-air missile (SAM) and integrated air defense system (IADS) facilities. These include numerous targets in the Southern Sector. Damage is reported to SA-2 and SA-3 sites, and a repair facility is severely damaged.
- 18 command and control facilities, including TV and radio transmitters and James. The headquarters of the Directorate of Military Intelligence, Special Security Organization (SSO) and Special Republican Guards (SRG) suffer severe damage.
- 19 weapons of mass destruction security facilities, including severe damage to most Special Republican Guards barracks and headquarters buildings.
- 11 weapons of mass destruction industry and production facilities, including facilities at Al Kindi, Al Karama, and Iba al Haytham.
- 8 Republican Guards and regular army headquarters and facilities, including corps and division headquarters.

The impact on the media impact was as explosive as the US strikes. Few reporters understood that the data in Table Two were first stage damage assessments made before full photo coverage was available (stage two damage assessment or any assessment of activity and signals intelligence (stage three)). They did not understand that light and moderate damage often were perfectly adequately to send a political damage, that there was no intention to go beyond light damage at targets like airfields, and that moderate damage often was very severe by peace time standards. They also did not understand that restrikes were in progress.

Nevertheless, the media raised some key issues. The US had already fired over \$400 million worth of ordnance, and it was far from clear that it was having a major impact. Even allowing for all of the uncertainties, the US often seemed to be blowing up buildings without a clear picture of the probable impact, and the overall level of damage was not particularly impressive.

Table Two
Damage Assessments Released on Friday, December 18, 1998

Target Type	WMD Security	WMD Industry	SAMS/IADS	C2	Rep Guards	Industry	Total
Target Numbers	19	11	27	18	8	1	83 (100%)
No Damage	1	0	8	2	0	-	11 (13%)
Light	4	2	1	0	1	-	8 (10%)
Moderate	9	1	1	2	2	-	15 (18%)
Severe	1	0	2	5	1	-	9 (11%)
Destroyed	2	0	1	5	0	-	8 (10%)
Being Assessed	2	8	14	4	4	-	32 (36%)

Damage Assessment on December 19th

The press conference the next day was more reassuring. Secretary Cohen that Iraqi development of longer-range missiles is believed to have been pushed back by a year. Cohen indicated that the assessment was based on the time analysts believe it would take to rebuild the facilities. It could take longer, he said, given the administration's "containment" policy of limiting Iraq's war-making capabilities through sanctions and inspections.

In London, officials showed similar images of hits by British forces against Republican Guard installations in southern Iraq. Prime Minister Tony Blair said the Guards were targeted because they guard Saddam Hussein, "keep him in office, have their own system of repression, and of course have been instrumental in putting together the means of concealing the weapons of mass destruction." George Robertson, Britain's defense secretary, said in a similar press conference that US and British attacks included strikes by British Tornado jets, had hit 100 military and industrial targets, and had caused "substantial damage" to Iraq's biological and chemical weapons programs and to the Republican Guards.

Some damage was also shown on television. The pan-Arab headquarters of Iraq's ruling Baath Party was hit and badly damaged. The two main buildings of the Baath Party complex in Baghdad's Qadisiya district received direct missile hits in the pre-dawn attacks, the fiercest on the capital's center in three days of bombardment. There is no movement inside the complex, which appeared to have been abandoned at the time of the attack, and no word on casualties. Buildings housing the Military Industrialization Commission, military intelligence and the security police were reportedly hit in the first two days of attacks.

At the major Pentagon press conference on December 19th, Secretary Cohen cited "substantial" success in degrading Iraq's "command and control" systems—systems and networks devoted to communications, intelligence, propaganda and security. "Saddam may rebuild, and attempt to rebuild, some of this military infrastructure in the future, just as he has replaced many facilities, including lavish palaces, after Desert Storm. But we have diminished his ability to threaten his neighbors with both conventional and nonconventional weapons. The policy of containment has been successful... We will keep our forces in place as they've been in place for a number of years now. We will be at the ready should he try to reconstitute those facilities or pose a threat to the region. We'll be prepared to act again in the future."

General Shelton followed Secretary Cohen and provided more details on three targets in Iraq's military production infrastructure, showing photographs of buildings with large holes where bombs crashed through the roofs. The first was a missile repair facility at Taji, where the Iraqis used to repair all their surface-to-air missiles and also to develop ballistic missiles. "We aimed at five buildings. Three sustained very severe damage, one sustained moderate damage and one was damaged lightly. He won't be doing any more refurbishment or facility work there for quite some time. The second was the Zaafaraniyah facility, 13 miles (20 km) southwest of Baghdad, where Iraq makes components and designs machine tools. Two buildings were targeted and -- both were completely destroyed. At the third site at Shahiyat, a facility where the Iraqis test liquid engines for rockets and missiles, the United States aimed at two buildings and a test stand. Both buildings sustained very severe damage and the test stand was completely destroyed.

Other parts of the Pentagon briefing stated that the UK and US were striking most of the targets that the US felt Saddam holds the most dear. These targets included nine missile research and development facilities, 20 out of 21 of Iraq's command and control facilities and 18 out of 19 targets associated with the protection of Iraq's programs to develop weapons of mass destruction. They also reported that American and British forces had now struck 100 targets, and that the latest attacks included strikes by F-16 and F-15 fighters, as well as British Tornado fighters, based in Kuwait and supported by aerial tankers and AWACS.

Around 17 missiles were reported to have attacked Baghdad. B-1 bombers, based in Oman, were said to have flown into Iraq on their first combat missions. The full range of missions and struck barracks and headquarters of six divisions of the Republican Guard, seven or eight of Mr. Hussein's presidential palaces and the headquarters of the Baath Party in Baghdad, badly damaging it. The strikes also hit an oil refinery near Basra, in the south, that was producing product smuggled through Iranian waters to provide funds for the Iraqi regime that were not controlled by UN sanctions

The briefing included a wide range of data on military activity and damage assessment as of 0800 EST in December 19. It reported the following results for 100 targets:

- 32 surface-to-air missile (SAM) and integrated air defense system (IADS) facilities. These include numerous targets in the Southern Sector. Damage is reported to SA-2 and SA-3 sites, and a repair facility is severely damaged.
- 20 command and control facilities, including TV and radio transmitters and jammers. The headquarters of the Directorate of Military Intelligence, Special Security Organization (SSO) and Special Republican Guards (SRG) suffer severe damage. The relay station at Al Rumaylah is believed to have been destroyed, partially cutting off the communications to Iraq's forces in the south. Saddam Hussein had, however, divided the country up into four regions before the strikes, with contingency orders in case communications were severed.
- 19 weapons of mass destruction security facilities, including severe damage to most Special Republican Guards barracks and headquarters buildings. Some Special Republican Guards barracks as destroyed, possibly with the occupants in them. Buildings hold a maximum of 400 personnel. There are 30,000 Special Republican Guards. At least four barracks in Baghdad and the barracks at Tikrit were hit.
- 11 weapons of mass destruction industry and production facilities, including facilities at Al Kindi, Al Karama, and Iba al Haytham. They include Iraq's major final-stage missile fabrication plant in the Baghdad area, plus an engine facility and light damage to the missile simulation center. They also include an RPV facility believed to be dedicated to delivering biological weapons south of Baghdad,
- 9 Republican Guards and regular army headquarters and facilities, including corps and division headquarters. The strikes hit the headquarters and C2 facilities of 3 heavy and 1 infantry division in the Baghdad area, including the Baghdad division. They also hit the Adnan division in the north (opposed to the Kurds) and Medina division in the south.

- 9 airfields, including the attack helicopter forces used against the Kurds in the North and Shi'ite rebels in the south. Targets also include L-29 aircraft being converted for use as RPVs for either reconnaissance use or possible delivery of biological and chemical weapons at al-Sara airfield north of Baghdad.
- 1 refinery used to make the product smuggled illegally out of Iraq through the Gulf – normally through Iranian waters. This is the Basra PLL facility which shipped product via the Shatt al-Arab.

Once again, the damage assessment included only rough first stage assessments. The Pentagon stated that it had confirmed damage to 70 of 100 targets, and produced the data summarized in Table Three. Secretary of Defense Cohen qualified these data by stating that, "From the beginning of this operation, we've been careful to set realistic goals. "We've also been careful not to either overstate or exaggerate the results as our intelligence analysts study the very preliminary data." He says, "that this military action is substantial," and that the Iraqi ballistic missile program had been set back "by at least a year."

The results shown in Table Three showed that 46% of all targets had been hit hard during the last few days. At the same time, many targets suffered only limited hits and this led to explanations that the US was not seeking severe damage to all targets, and comparing "moderate" damage to the damage done to the Federal Building in Oklahoma.

Table Three

Damage Assessment as of 0800 EST on December 19, 1998

Target Type	WMD Security	WMD Industry	SAMS/ IADS	C2	Rep Guards	Refinery	Airfield	Total	
Target Numbers	18	11	32	20	9	1	6	100	(100%)
No Damage	0	0	0	0	0	0	0	0	(0%)
Light	5	4	4	2	1	1	1	18	(10%)
Moderate	6	5	4	4	5	0	4	28	(28%)
Severe	5	1	5	4	3	0	0	18	(18%)
Destroyed	2	0	1	7	0	0	0	10	(10%)
Being Assessed	0	1	18	3	0	0	1	23	(23%)

Damage Assessment on December 21st

Desert Fox ended on the night of December 19th. The Pentagon did not provide a detailed damage assessment until the afternoon of December 21st, but President Clinton declared the attack a success and warned that the US and UK will strike again if Iraq takes steps to rebuild chemical or biological weapons or threaten his neighbors.

The President stated that, "I am confident we have achieved our mission. We have inflicted significant damage on Saddam's weapons of mass destruction programs, on the command structures that direct and protect that capability and on his military and security

infrastructure." Clinton also said the United States would maintain its military forces in the region, keep Iraq under the pressure of comprehensive economic sanctions, continue to enforce the "no-fly" zones in northern and southern Iraq, and work more intensively with the Iraqi opposition to try to change the Iraqi government. "So long as Saddam remains in power he will remain a threat to his people, to his region and to the world." Clinton again calls for a new government in Iraq. "So long as Saddam remains in power, he will remain a threat to his people, his region and the world. With our allies we must pursue a strategy to contain him and to constrain his weapons of mass destruction program."

Secretary Cohen repeated his previous assessments of the impact of Desert Fox in several television interviews. He warned that the Iraqis might try to rebuild the facilities but the United States would keep a watchful eye. "We are going to be in the region, we are going to maintain our military capability, we are going to continue the sanctions and watch to make sure that he doesn't pose a threat to his neighbors or try to reconstitute these programs. The burden of proof really is on Saddam. He is going to continue to live with the restrictions. He will still have a no-fly zone and a no-drive zone. We will continue the maritime interdiction operations."

Secretary of State Madeleine Albright gave an interview stating that the strikes are a "successfully accomplished mission." She did, however, acknowledge that the threat posed by Iraq's chemical and biological weapons capability cannot be completely erased. "Obviously it is very hard to say that everything that he has in weapons of mass destruction has been destroyed, but his capability of threatening his neighbors and delivering (weapons) has been severely degraded. Albright says the United States may have to strike at Iraq again if Saddam Hussein rebuilds his country's weapons of mass destruction capability. "We reserve the right to use force again" She also said that aid U.S. strategy against Iraq was shifting toward overturning Saddam's regime. "We would like to see a different regime. That is what we are going to be working towards by more active support of the various opposition groups."

The Iraqis also began to make claims. A statement by Iraq's armed forces general command said that strikes targeted presidential sites, civil establishments, government offices, colleges, students' dormitories, factories, refineries and some military units. It did not elaborate. Officials said a mass funeral had been held for 68 people killed in and around Baghdad in the bombing raids. Vice President Tariq Ramadan stated there were 10 times more casualties among civilians than in military ranks but did not cite any figures. Iraq's ambassador to the UN, Nizar Hamdoon, claimed that British attacks and US had killed or wounded thousands of people. "There has been enormous damage, mainly to the civilian infrastructure and to human life. I am told the casualties are in thousands, in terms of people who were killed or wounded, but we don't have any final figures."

The Iraqis claimed there were reports of as many as a dozen deaths at a university in a northern Iraqi province, and at least a handful of deaths from the bombing of a major oil field in Basra in the south. U.S. officials confirmed that they tried to kill large numbers of the Special Republican Guard, which provides crucial support, protection and muscle for Saddam Hussein. Neither U.S. nor Iraqi officials would give an estimate yesterday of Iraqi military losses. In Baghdad, life went on as normal, but reporters did see heavy damage to several buildings where elements of the Iraqi security and military establishments were housed. One missile hit the headquarters of the Iraqi Ministry of Labor and Social Affairs last night, witnesses said,

wounding at least three guards and leaving a crater 20 feet deep just inside the gates. Three other missiles were said to have hit near Al Mustansiriya University in the heart of the Iraqi capital.

The first detailed overall damage assessment came at a Pentagon press conference on December 21st. Secretary Cohen stated that Iraqi development of longer-range missiles was believed to have been pushed back by a year. He indicated that that assessment was based on the time analysts believe it would take to rebuild the facilities. It could take longer, given the administration's "containment" policy of limiting Iraq's war-making capabilities through sanctions and inspections. Cohen claimed "substantial" success in degrading Iraq's "command and control" systems—systems and networks devoted to communications, intelligence, propaganda and security. "Saddam may rebuild, and attempt to rebuild, some of this military infrastructure in the future, just as he has replaced many facilities, including lavish palaces, after Desert Storm. But we have diminished his ability to threaten his neighbors with both conventional and nonconventional weapons."

Secretary Cohen warned that that Iraqis might try to rebuild the facilities but stated that the United States would keep a watchful eye, "The policy of containment has been successful...We will keep our forces in place as they've been in place for a number of years now. We will be at the ready should he try to reconstitute those facilities or pose a threat to the region. We'll be prepared to act again in the future...We are going to be in the region, we are going to maintain our military capability, we are going to continue the sanctions and watch to make sure that he doesn't pose a threat to his neighbors or try to reconstitute these programs. The burden of proof really is on Saddam. He is going to continue to live with the restrictions. He will still have a no-fly zone and a no-drive zone. We will continue the maritime interdiction operations."

The Chairman of the Joint Chiefs, General Shelton then provided the now ritual victory photos of the impact of strikes against targets in Iraq's military production infrastructure, showing photographs of buildings with large holes where bombs crashed through the roofs. These included a missile repair facility at Taji, where the Iraqis used to repair all their surface-to-air missiles and also to develop ballistic missiles. "We aimed at five buildings. Three sustained very severe damage, one sustained moderate damage and one was damaged lightly. He won't be doing any more refurbishment or facility work there for quite some time."

Another photo included the Zaafaraniyah facility, 13 miles (20 km) southwest of Baghdad, where Iraq makes components and designs machine tools. Two buildings were targeted and -- both were completely destroyed. At a third site at Shahiyat, a facility where the Iraqis test liquid engines for rockets and missiles, the United States had aimed at two buildings and a test stand. Both buildings clearly sustained very severe damage and the test stand was completely destroyed. The destruction was heavy and devastating to most of the targets that he holds the most dear. It included nine missile research and development facilities, 20 out of 21 of Iraq's command and control facilities and 18 out of 19 targets associated with the protection of Iraq's programs to develop weapons of mass destruction.

At a similar press conference in London, officials showed images of hits by British forces against Republican Guard installations in southern Iraq. Prime Minister Tony Blair said

the Guards were targeted because they guard Saddam Hussein, "keep him in office, have their own system of repression, and of course have been instrumental in putting together the means of concealing the weapons of mass destruction."

Defense Secretary George Robertson followed up a day later by saying that Britain would prove that four nights of air strikes had hit hard at Iraq's military capability while military chiefs said most attacks had struck their targets. He was reacting to reports from Iraq suggesting its military infrastructure had escaped relatively undamaged and he told a news conference: "We know that we have done considerable damage to the war machine of Iraq. Increasingly in the next few days evidence will be brought forward from the battle damage assessments to show that is absolutely correct. While life appears to be going around as normal inside Iraq, inside the military structures there has been immense damage and the impact has been very considerable indeed."

Robertson spoke with German Defense Minister Rudolph Scharping standing beside him. Robertson went on to say that Iraq had only shown Western correspondents what it wanted them to see, and that the lack of overt damage in Baghdad showed how successful the allied attacks had been in limiting civilian casualties. "We set out to minimize collateral damage and to focus our attacks on the military machine. I appreciate very much the constraints on the media caused by the Iraqi government propaganda machine...those members of the press who are laboring in Iraq just now cannot possibly see the damage that we have done."

He said 12 Cruise missiles had hit the interior of the headquarters of the ruling Ba'ath Party, which United Nations weapons inspectors had been prevented from visiting, but that a passer-by on the street in Baghdad would not notice any great damage to it at all. "That (the party HQ) was one of the mechanisms by which Saddam controlled his chemical and biological weapons program...he will not be able to do that ever again because of the damage that was caused," Robertson said. Those close to Saddam will realize that we have the ability and the will to target the regime, as distinct from the Iraqi people," Day added later. Scharping dismissed Iraq's claims in broad terms, "Every dictator will say that he won...that is the nature of dictatorship."

Air Marshal John Day, Director of Operations at the Ministry of Defense, reported that initial assessments showed that 74 percent of the 111 attacks on key Iraqi installations had knocked out the facilities concerned. Fifteen percent had missed their targets and 11 percent appeared to have caused only slight damage, said Day, who was briefing reporters only on British action during the U.S.-led aerial bombardment of Iraq. Day showed a series of photos of damage to key installations. One showed the hangar at Tallil Airfield, which Britain says held remotely piloted aircraft designed to deliver biological and chemical bombs, with large areas of its roof destroyed and debris littering the ground nearby. Another showed the Taji steel fabrication plant with two buildings believed to be used to make components for nuclear programs destroyed but the rest of the plant intact.

The "New Math" of Damage Claims on December 21st

These broad US and British "victory" claims were almost certainly valid to the extent they provided important warnings about not underestimating the physical damage done to Iraqi

facilities. They did not, however, show that Desert Fox seriously degraded Iraqi capabilities or had had its desired political impact. Further, the detailed damage estimates the Defense Department provided on December 21st were anything but convincing. The Department suddenly made dramatic revisions in format it used for describing bomb damage.

During the strikes, the Department of Defense figures had issued the data shown earlier in Tables Two and Three. These tables indicated that a maximum of 28% of the targets were destroyed or severely damaged and a maximum of 56% had “moderate,” “severe,” and “destroyed” levels of damage. The new statistics, however, created a new category called “confirmed damage,” which now could include both light to moderate damage. As a result, the US suddenly claimed that 73 out of the 96 targets reported sustained some damage, and General Shelton stated that, “We consider this a very successful attack at this point. Our success goes up almost daily as we have a chance to make a more complete assessment.”

These revised damage data were issued at 1400 on the 21st, and these data are shown in Table Four, along with the words that the Pentagon used to summarize the level of success in attacking each category. The US now claimed an 85% hit rate and that 74% of all strikes were highly effective, although Pentagon officials cautioned that full bomb-damage assessment could take months, that pictures are often deceiving and that Iraq may have to be attacked again, but the new data raised massive and immediate problems about their credibility.

Air Marshall Day provided further insights into this new math at the British press conference on damage assessment on December 22nd. He revealed that,

“What these statistics mean is that 15% of the weapons missed their intended target. This could be for a variety of reasons, for example, a technical failure or, in the case of manned bomber attacks, the wrong target being identified and hit. Target misidentification has only happened in attacks on military complexes, so a military target has been struck but it was not the intended target. 11% of the attacks appear to have received only light damage. This means that we think that the target may still be operational. Subsequent more detailed battle damage assessment may however show that the damage was in fact severe enough to degrade or even destroy the target’s operational capability.”

To be blunt, it is impossible to take these claims, and the data in Table Four, seriously. One problem is that they now reveal nothing about the effectiveness of individual missile and air strikes, although the Pentagon briefing stated separately that 90+% of all SLCM strikes “hit their targets.” This is an amazing figure given the fact that the Tomahawk had previously had an average successful launch rate of about 60% and about 60% of the missiles fired then did serious damage to their targets. This is going from a damage rate of 36%, which is far different from a severe damage or kill rate even if the target is valid, to a success rate of 90+%. The air-launched CALM is considerable less accurate and lethal. No data are available on the effectiveness of the air dropped rounds, but they included B-1B strikes with bombs that did comparatively limited damage per round. There also were over 1,000 strikes from missiles and aircraft.

The Unsettled Issue of Weapons Effectiveness

Lt. General Anthony Zinni, the Commander of the US Central Command, summarized the Desert Fox as follows during his press conference on December 21st,

“The operation involved over 30,000 troops, and 10,000 more outside of our area of responsibility who supported and alerted from bases virtually around the world. We flew over 600 sorties in four days. Over 300 of those were night strike sorties. Over 300 aircraft were involved in strike and support roles. Over 600 pieces of ordnance and 90 cruise missiles were delivered by these aircraft. Over 40 ships performed strike and support roles with ten of them launching over 300 TLAM missiles. Thousands of ground troops deployed to protect Kuwait and to respond to any counteraction. Hundreds of our Special Operations Forces troops also deployed to carry out their assigned missions.”

If one looks at the full implication of General Zinni’s figures, and additional data that the Pentagon provided on a background basis, the US fired something on the order of three-quarters of a billion dollars worth of ordnance in Desert Fox, if the total costs are calculated to include the RDT&E costs the Pentagon usually conveniently omits from its cost estimates. It planned to hit 102 targets, executed strikes against 100, and hit 85. It fired something on the order of 415 cruise missiles and hit 85 targets, an average of 5 missiles per target hit. It flew 650 sorties, an average of 7.6 sorties per target hit, and fired over 600 pieces of air ordnance. If one uses the total of 1,065 for missiles and sorties/ordnance, the figure is 12.5 weapons per target struck. In the real world, this is very good performance for the level of activity involved, but it is scarcely the “perfect war” implied by the Pentagon briefing.

What is truly disturbing about the new damage figures that the Pentagon released on December 21st, however, is the use of “new math.” Figures 1 and 2 show the astounding rise in overall effectiveness between the damage assessments published on December 18th and 19th, and the new type of assessment published on December 21st. We almost certainly did improve our performance in the final strikes of the war, but leaping from a conservative 28% for destroyed and severe damage to a 74% high effective strike right defies credibility. It also involves some minor statistical slight of hand since these new percentages are only based on the strikes actually executed and not the total numbers of strikes planned. The figures drop to an 83% hit rate and 72.5% highly successful strike rate *if* the full target base is considered.

Even if one ignores the fact that every strike that receives more than light damage cannot be a “highly successful strike,” Air Marshall Day’s figures indicate that To claim 85% hit rate and that 74% of all strikes were highly effective is to play with words in ways that are far more misleading than any words that President Clinton has used about sex. If there is any meaningful definition of what a statement that “85% hit rate and that 74% of all strikes were highly effective” really means, it is not apparent from any of the supporting data on Desert Fox. The criteria used in Table Four not only cannot be reconciled with the far more honest reporting in Tables Two and Three, they use definitions and methods of analysis that would turn virtually every military operation into success. Such data lose all of the distinctions that give Tables Two and Three credibility. They essentially says that anything we do is successful, if you hit at all, you almost always fully succeed.

Damage Assessment and Strategic Impact by Target Set

What is equally disturbing is what happens when political factors and strategic factors are considered against some of the damage claims made during December 21st. It is far from clear that the US hit more than a few fully occupied facilities. In general, blowing up the building did not hit key personnel. There are some reports that most of the building hit had minimal or no personnel. Many of the buildings hit seem to have marginal value. Destroying them creates great uncertainty as to whether the Iraqi regime really cares, and it may claim from propagandizing the destruction.

These uncertainties become far clearer when the claims made on December 21st are analyzed by the target sets shown in Table Four and compared with previous estimates in Figures 2 and 3. In each major target set, uncertainties arise that not only raise questions about Desert Fox, but about the apolitical and anti-strategic character of the RMA and Joint Vision 2010:

Concealment Sites for Weapons of Mass Destruction

Striking at the “concealment sites” for weapons of mass destruction may often have been something of an empty gesture in military terms, although many of the sites had political importance. Few of these facilities were felt to have extensive stocks of weapons or critical equipment. Much of the key weapons and equipment were probably dispersed to unknown locations and even hard equipment and weapons in facilities often survives the destruction of the building. This is also a mystery category in terms of damage assessment. There were 18 targets. Only 7 were destroyed or had severe damage on December 19, Yet, the Pentagon claimed full success against 16 targets on December 21.

These success claims seem particularly strange, given the fact that General Zinni stated at the same press conference that the Special Republican Guards, Republican Guards, and other Iraqis began dispersing before the US started Desert Fox,

“Q: For how many hours were the Iraqis dispersing before the first missiles struck?”

General Zinni: I don’t have the exact figures. A few hours before. I think once they saw the UNSCOM team coming out they were beginning to react.

Q: That was the trigger for the dispersal, you figure?

General Zinni: I believe that it probably was.”

Weapons of Mass Destruction Industrial Targets

Striking at the missile production facilities was important and useful damage was done. The number of strikes seems to have been too limited, however, and some facilities largely survived. Some key equipment also may have been dispersed before the strikes. Hits at RPVs sites like the L29 unmanned aerial vehicle program may have hit targets dedicated to reconnaissance drones and not the delivery of weapons of mass destruction. There were 12 targets. Only 1 was destroyed or had severe damage on December 19, Yet, the Pentagon claimed full success against 11 targets on December 21.

Avoiding strikes on major dual-use facilities and sites with a high probability of storing biological and chemical weapons means many key industrial facilities were left intact in any case. As General Zinni stated on December 21st, the US and British strikes also left substantial Iraqi resources intact,

Q: ...UNSCOM has said that there's unaccounted inventories of missiles, artillery shells, bombs that they believe are filled with possibly chemical and biological material, did you hit any weapons depots or weapons sites where you believe there was chemical and biological material?

General Zinni: None that we know of. But again, I think you point out the reason why it was important to keep UNSCOM in operation and with full access. The only way we know is through UNSCOM.

Q: Did you destroy any Scuds at all? And did you use the GBU-28, the 5,000-pound bomb at all?

General Zinni: The answer to the second one is no. And the Scuds, I have no knowledge that we have destroyed any Scuds.

Command and Control Facilities

Serious damage does seem to have been done to some command and control facilities, and probably to large amounts of imported equipment that cannot be fully replaced until Iraq has access to military imports. This damage led Air Marshall Day to claim on December 22nd that,

“We have severely disrupted his senior level command and control network. These targets are particularly important because Saddam is afraid of a coup by his officers and makes all decisions himself. He therefore relies on an effective command and control system to pass his instructions to his commanders, and we assess that he will now be finding it far harder to control his military and his internal security forces as a result of the damage which we have inflicted.”

Once again, however, there is good reason to question the level of success reported on December 21st. There were 21 targets. A total of 11 were said to have been destroyed or had severe damage on December 19, Yet, the Pentagon claimed full success against 17 targets on December 21. This is a sudden rise from 52% success to 81% success, assuming that hitting these targets really matters.

Even on the 21st, however, General Zinni described the impact of strikes on command and control facilities in more modest terms,

“Q:...that it won and that all the United States did was bomb empty buildings where they had already moved things out of.

General Zinni: I would just say to that that a lot of infrastructure was obviously destroyed. I would say to you that after eight years, you can just look at the Iraqi military and see the degradation, inability to modernize, the readiness rates. There are a lot of troops and a lot of headquarters that have no place to go home to and have lost a lot of the ability to command and control and a lot of equipment. I don't know how you

measure that as a victory in any way. I think our friends in the region and others clearly look at what happened to Iraq and realize that Saddam suffered a defeat.”

General Zinni provided further details during a press conference on December 23rd. He -- warned that Iraq could quickly rebuild the military command and communication systems, which were hit during the U.S. and British strikes. He said that President Hussein had evidently feared a revolt in his own ranks before the strikes and had moved Iraqi ground troops into four widely separated sectors where he placed loyal and lieutenants in charge. Zinni reported that there were no signs of an imminent overthrow of Saddam, however, and that US intelligence analysts saw troop movements that were monitored from satellites and U-2 spy planes. He concluded that Saddam's main aim was to avert any uprising from within once the British and American strikes began, “That decentralization was done so they ensured they had control,” and “to prevent plotting. I think it was done more for internal reasons and internal military problems they thought they might have than for any military preparations they had for us.”

Desert Storm showed that attacking command and control capabilities continuously during a prolonged conflict can have a major impact on warfighting. Desert Fox, however, has shown that a limited number of strikes has much less impact. Basic command functions can be restored relatively quickly, and the intelligence services and Special Republican Guards seem to have relocated before the attacks began. As a result, the strikes during Desert Fox may have been intended to have far more political impact than they really had. It is also disturbing that Iraq had given contingency plans to its forces to deal with a loss of command authority that might have triggered Iraqi military action if they had been implemented. One needs to be very careful about striking at C⁴I in a “launch -on-warning country.”

As for the strikes on TV stations and jammers, the strikes did knock out Shabab (Youth) Television, an Iraqi station owned by President Saddam Hussein's son Uday, and Iraq's satellite television station on the first nights of the attack. Shabab resumed broadcasting only nine days after it was hit, however, although Iraq's satellite television station remained off the air.

Air Bases and Air Base Facilities

The strikes on Iraqi air bases were largely symbolic and the UK and US concentrated on striking at attack helicopters and related facilities which were used in supporting the suppression of the Kurds and Shi'ites. The damage done was negligible, and it is unclear that this was the right target. Iraq has used artillery firebases and mobile land forces in most of the fighting since the initial uprisings in 1991. There were 6 targets planned and five were hit. A total of 0 were said to have been destroyed or had severe damage on December 19, Yet, the Pentagon claimed full success against 4 targets on December 21. This may be a case where intelligence failed to accurately assess the importance of the target in the first place, and where token damage and pure symbolism is defined as military victory. It is also interesting to note how cautious General Zinni was in describing the degree of success against these targets,

Q: One of the ways Iraq can threaten its neighbors and also put down insurrections is a sizeable amount of helicopter gunships. I know you targeted those a little bit. How much success did you have?

General Zinni: We feel we had a great deal of success. We actually found some of the places where they were hiding the helicopters, and we were able to target those, we feel, successfully also.

Q: What degree of degradation would you say?

General Zinni: It's still ongoing. We still have a few more assessments to come in on several of the helicopter targets that we hit. Again, not only airfields, but also several places where they were attempting to hide them.

Republican Guards Headquarters

Hitting at the division and corps headquarters of the Republican Guard and regular army again probably damaged large amounts of imported equipment that cannot be fully replaced until Iraq has access to military imports. Army units, however, are designed to operate away from their peacetime headquarters, and these facilities were never all that critical during the Iran-Iraq War. Iraq is a very authoritarian country, but it does not need these facilities to execute personal authority down to the major combat unit level and basic command functions will probably prove relatively easy to replace. Once again, the damage assessment claims on December 21st lack credibility. There were 9 targets planned and 9 were hit. A total of 3 were said to have been destroyed or had severe damage on December 19, Yet, the Pentagon claimed full success against all 9 targets on December 21.

General Zinni provided some important caveats regarding this aspect of the damage to both the Republican Guards and Special Republican Guards during his press conference on December 21st,

“Q: A question about the Republican Guard. How many divisions of the six did you all target? And how do you translate attacking the infrastructure into their combat effectiveness vis-a-vis Kuwait?”

General Zinni: Well, I would say that first of all, understand the role of the Republican Guard. They are obviously the elite forces. They normally lead the attacks or certainly “bolster,” and I would put that in quotes, the regular army who may have to be encouraged to attack by being directly behind them. They are the most significant, most loyal, most ruthless of his forces.

In terms of did our bombing do damage? I think equipment loss, I think headquarters loss, command and control loss. It's pretty tough if you're a troop in the field. You've got no place to go home to at night, and you see the level of damage that you see in these photos. That has to be fairly demoralizing...

Q: You don't have any figures on casualties to the Republican Guard...before the bombs fell? Did most of those troops evacuate before the bombs fell? Tariq Aziz gave the following figures for the total of Republican Guards and Special Republican Guards. Thirty-eight martyred, as he said, and 100 wounded. Is there any way that those you think are accurate?

General Zinni: I have no way of telling.

Q: Didn't you, though, intend to kill thousands of those Republican Guard troops?

General Zinni: Our intention was to attack the infrastructure of the Republican Guard. There was dispersal immediately before. We did see some. I can't tell you how much we saw. We are not in the business of body counting. We have not gone about that or made any attempt to make that part of the figures here. I feel [about] the kinds of things we went after, equipment and infrastructure, we were highly successful."

Q: Can you go back to the whole issue of equipment in a little more detail? And talk about where, how many tanks, APCs you destroyed. Did you actually destroy also missile inventories, artillery, and bombs? What ordnance and delivery systems did you really hit?

General Zinni: Obviously, I think you know we went after missile production and missile repair facilities. We went after surface-to-air missile sites. In terms of getting down to individual pieces of equipment, my being able to tell you how many APCs or tanks or FROG missiles or whatever, we don't have that yet. That's part of the sort of more granular assessment that we will have to do. We may never know exactly.

Integrated Air Defense System and Surface-to-Air Missiles

Hitting at air defenses is useful and Desert Fox may have crippled some of the air defense command, control, and warning structure in the south. Most air defense weapons remain intact, however, and the Iraqi integrated air defense system has never been a highly effective system. Prime Minister Tony Blair's office released claims on December 21st that the attacks had left the Iraqi air defense system "in ruins" and Saddam Hussein weakened. "We believe the damage that has been inflicted in the last few days has left Saddam (Hussein) very weak and vulnerable."

Similarly, Air Marshall Day stated during a press conference on December 22nd that,

"The air defense systems of radars, control centers and communication facilities in southern Iraq has been severely damaged. Moreover, major damage inflicted upon his missile repair facilities has reduced his capability to maintain and upgrade air defense missile systems. Provided that sanctions remain in place, this would take years to reconstitute, unless he sacrifices air defense capability elsewhere in Iraq. This will make it even more difficult for Saddam to resist air attacks in future and so weakens his ability to threaten his neighbors."

These kinds of claims may prove to have little substance. There were 19 Integrated Air Defense System targets planned and only 13 were hit. The Pentagon claimed full success against only 8 targets on December 21, a success rate of 42% against the targets planned. There were 16 SAM targets planned and 9 were hit. The Pentagon claimed full success against 8 targets on December 21, a success rate of 50%.

If one looks at the total number of both IADS and SAM targets reported on December 21st, and ignores comparisons with the previous damage assessments, there were 35 targets planned, 22 were hit, and 16 were highly successful strikes. This is a rate of 46% success even by the new math introduced on December 21st. If one does consider the damage report on

December 19th, the success rate for destroyed and severe damage was only 17%. How did it more than double in the final hours of the war?

General Zinni put the degree of US and British success in a far more modest and realistic perspective during his press conference on December 21st,

Q: General, ...when you look at your chart here, IADS and surface-to-air missiles, it looks like the most number of misses. I was wondering why, if you could tell us if that's true for both.

General Zinni: "In terms of the IADS, I would go back again and say you have to go back to what our objective was. In terms of IADS and SAMs, it was to disrupt. And when you say disrupt, it means we don't want him to be able to communicate, to use the integrated system, to connect the radar with the missile, to be able to fire accurately. The level of effort, the ordnance we need, then is a lot lower.

So if we're able to take a shot and it puts his head down, knock out one repeater out of four or five, you achieve disruption for the time you need. So you'll see a low level here, and it will seem inconsistent with me saying we achieved our results, but I would say that successfully, we had no SAMs fired for whatever reason, and we were able to get to our targets with a high degree of success and lack of interruption."

"Industrial Targets:' The Basra Oil Refinery

The Basra facility that the US and UK struck at was able to handle up to 126,000 barrels of crude oil a day before the attacks, equal to 36 percent of Iraq's total refinery capacity of 350,000 barrels per day. It is an important facility, but limited damage is not going to do much to stop Saddam, particularly since most of the real smuggling goes through the Kurdish areas in the north to Turkey. The score went from 0 severe damage on December 19th, to full success on December 21st. Once again, General Zinni describes the impact of the strikes in a way that seems far more realistic than the "new math" damage statistics,

Q: Can I follow up on that same issue of oil? You did strike an oil target. Was it just an oil loading station? I don't know. But the damage was fairly light. Would you consider striking more forcefully against their oil export infrastructure?

General Zinni: The oil facility we struck in the south was one that was used for illegal gas [and] oil smuggling. We intentionally did it in such a way to disrupt the flow, but not cause any environmental damage. We did not want to do what Saddam did. You're not going to see burning oil fields. You're not going to see oil spills into the water. We very selectively and very precisely went after a point in that target that accomplished our goal.

General Zinni provided further details in a press conference on December 24th. He made it clear that Iraq might use other refineries to smuggle oil in violation of UN sanctions while the refinery at Basra, Iraq's third-largest, was being repaired.

"We wanted to incapacitate it so it couldn't be used for him (Saddam) to gain financing to support his military or weapons of mass destruction program. The damage we did is repairable. We're not trying to fool ourselves into thinking we obliterated this. If we did,

it probably would have caused collateral damage that we didn't feel was appropriate, or would have been environmentally damaging. In the short-term, he would probably try to find some other way to do the illegal export, and then work to repair it. If the Iranians enforce their end, which they seem to be doing in some degree...and we're able to tighten it up and cut the sources and make it more difficult, I think that hurts him (Saddam) more in the long-run.”

The Key Questions Affecting Damage Claims by Target Set

In summary, the moment one really starts looking at the damage claims made regarding each target set, three critical questions arise.

- First, is it even remotely credible that so much additional damage was done in the last few hours of the war? The answer seems to be victory with word games, but if it is not, it raises painful questions about what the US was doing wrong during the 65 odd hours of combat.
- Second, is there any indication that the level of success is a demonstration of the targeting skill, precision, and lethality that is assumed in either the RMA or Joint Vision 2010? The answer is no.
- Third, is there any clear indication that political and strategic factors were properly considered? The answer to all three questions seems to be no.

Table FourDesert Fox Damage Assessment as of 1400 on December 21, 1998

<u>Target Set</u>	<u>Targets - Planned/Executed</u>		<u>Impacts – Hit/Missed</u>		<u>Success – Full/Partial</u>	
<u>Weapons of Mass</u>						
<u>Destruction/Security</u> (Attack the Iraq leadership's security apparatus. Degrade national command and control system)	18	18	18	0	16	2
<u>Weapons of Mass</u>						
<u>Destruction/Missile Industry</u> (Degrade/delay WMD program and key enabling technologies. Ability to produce ballistic missiles delayed one year.)	12	12	12	0	11	1
<u>Command and Control</u> (Attack strategic center of gravity; degrade national command and control system. High value regime C2 targets attacked. Capability to command and control WMD, security and operational military forces severely degraded.)	21	20	18	2	17	1
<u>Airfields</u> (Destroy high value assets difficult for Iraq to replace. Degrade helicopter Capability)	6	6	5	1	4	1
<u>Republican Guard</u> (Degrade capability to reinforce security efforts or move forces north or south. Ability to use RFGC in strike against Kuwait degraded)	9	9	9	0	9	0
<u>Refinery</u> (Deny Saddam revenues from illegal oil exports)	1	1	1	0	1	0
<u>Integrated Air Defense System</u>	19	18	13	5	8	5
<u>Surface-to-Air Missile</u> (Set conditions for air operations, degrade Iraq's air defense system. Critical IADS nodes and strategic SAM fire direction Centers below 33° north degraded)	16	16	9	5	8	1
TOTAL	102	100	85	13	74	11

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Losing the Political War and Battle of Perceptions?

More broadly, it is scarcely clear what message Desert Fox sent in the battle of perceptions, and this again illustrates the problems in the RMA. Deputy Prime Minister Tariq Aziz said on December 21st that four days of US and British air strikes had killed 62 military personnel dead and wounded 180, and that the air strikes had also ended UN arms inspections in Iraq. Aziz did not give details of civilian casualties but said they were "much, much more" than those in the military. He also said that Clinton and Blair had boasted about the damage the strikes had inflicted on Iraq's elite Republican Guard and Special Republican Guard, but that only 38 were killed and 100 wounded from the two guards corps, plus 24 soldiers from regular army and air defense units were killed and 80 wounded.

Aziz also announced the line that Iraq can be expected in the future. He claimed that the US and Britain had committed "an unjustified crime" in carrying out the raids. He condemned chief UN arms inspector Richard Butler and said that the inspection process ended when London and Washington began the air strikes. "The moment America and Britain launched missiles against Iraq they killed UNSCOM. I cannot give them another life." He called Butler "a cheap pawn in the hands of the Americans."

Aziz said the air attacks had taken place in daylight as well as at night because the United States and Britain wanted to wind up their assault quickly to avoid causing greater hostility in the Arab world. He complains of a US-British conspiracy to destabilize the Iraqi government and to finance "terrorist" acts. "The aggression has not stopped, it is continuous," and that Prime Minister Tony Blair had "turned Britain into a tail of the fox which is in Washington." As for Blair's statement about putting Saddam "back in his cage" with the air raids, Aziz says that. "This is the old rhetoric of a liar."

The political reaction from Russia was equally unpleasant. Prime Minister Yevgeny Primakov and Defense Minister Igor Sergeyev called during a visit to India for a strategic triangle with India and China, and Sergeyev urged closer military cooperation between the former Soviet republics after U.S.-British air attacks on Iraq. Primakov said, "We will never change our position. We are very negative about the use of force bypassing the Security Council." Sergeyev gave a speech stating that, "At this moment, when the United States and their allies are unpredictable, it is essential we reach a common understanding of the military-political problems arising. I hope that strikes on Iraq are not resumed under any circumstances. I hope sense prevails." during televised comments at a meeting in Moscow of defense ministers from the Commonwealth of Independent States. Colonel-General Leonid Ivashov, the military's head of international cooperation, stated that, "After what has happened we are not going to pretend everything is all right in relations. Though reducing the pace of mutually beneficial cooperation in the military sphere, Russia is not going to sever it totally. Russia will try to encourage the alliance and its separate members to discuss serious and concrete issues of bilateral and European security."

Interestingly enough, Russia issued its own damage claims. General Valentin Korabelnikov, the head of Russia's GRU military intelligence agency, estimates that every fifth missile fired on Iraq from December 16-20 had failed to hit its target. "The strikes were not as effective as the Pentagon said. The destruction of several civilian sites, which can have had

nothing to do with military installations or possible centers where weapons of mass destruction could be designed or produced, testifies to this.” Korabelnikov reported on the results of an early intelligence survey of Operation Desert Fox at a meeting of defense ministers of the post-Soviet Commonwealth of Independent states in Moscow. Russian Defense Minister Marshal Igor Sergeev, had addressed the meeting earlier on Monday, and called on the CIS armed forces to cooperate more closely because the United States, with the bombing of Iraq, had become “unpredictable.”

France also asked some important questions. On December 22, Foreign Ministry spokeswoman Anne Gazeau-Secret called on the United States and Britain to disclose results of their attacks against Iraq to enable the United Nations to make new proposals for Baghdad's disarmament. “The United States and Britain should disclose the results of their bombings to the UN Security Council because as things stand, we have no specific tally.” She added that such a move would help in drawing up new guidelines to control Iraqi weaponry “because we can in no way allow Iraq to again become a danger to its neighbors, “ and added that “once a durable and satisfactory control is established, we can move toward a lifting of sanctions (against Iraq).”

The Lessons of Desert Fox

One needs to be very careful about rushing to judgment. The detailed damage claims the Department of Defense issued on December 21st do look perilously like an awkward combination of propaganda and complete rubbish. However, the broader statements by Secretary Cohen, General Shelton, and others about the effectiveness of Desert Fox reflect a great deal more caution and balance. Every war is an exercise in chaos in which strikes are never as lethal as planners hope, but wars are still won. There were also limits to the alternatives. Clinton Administration was almost certainly right in concluding that UNSCOM and the inspection process had failed, and there was only a limited time window in which to act. It is simply too soon to say that the limited military damage done by Desert Fox was not worth its political and economic cost.

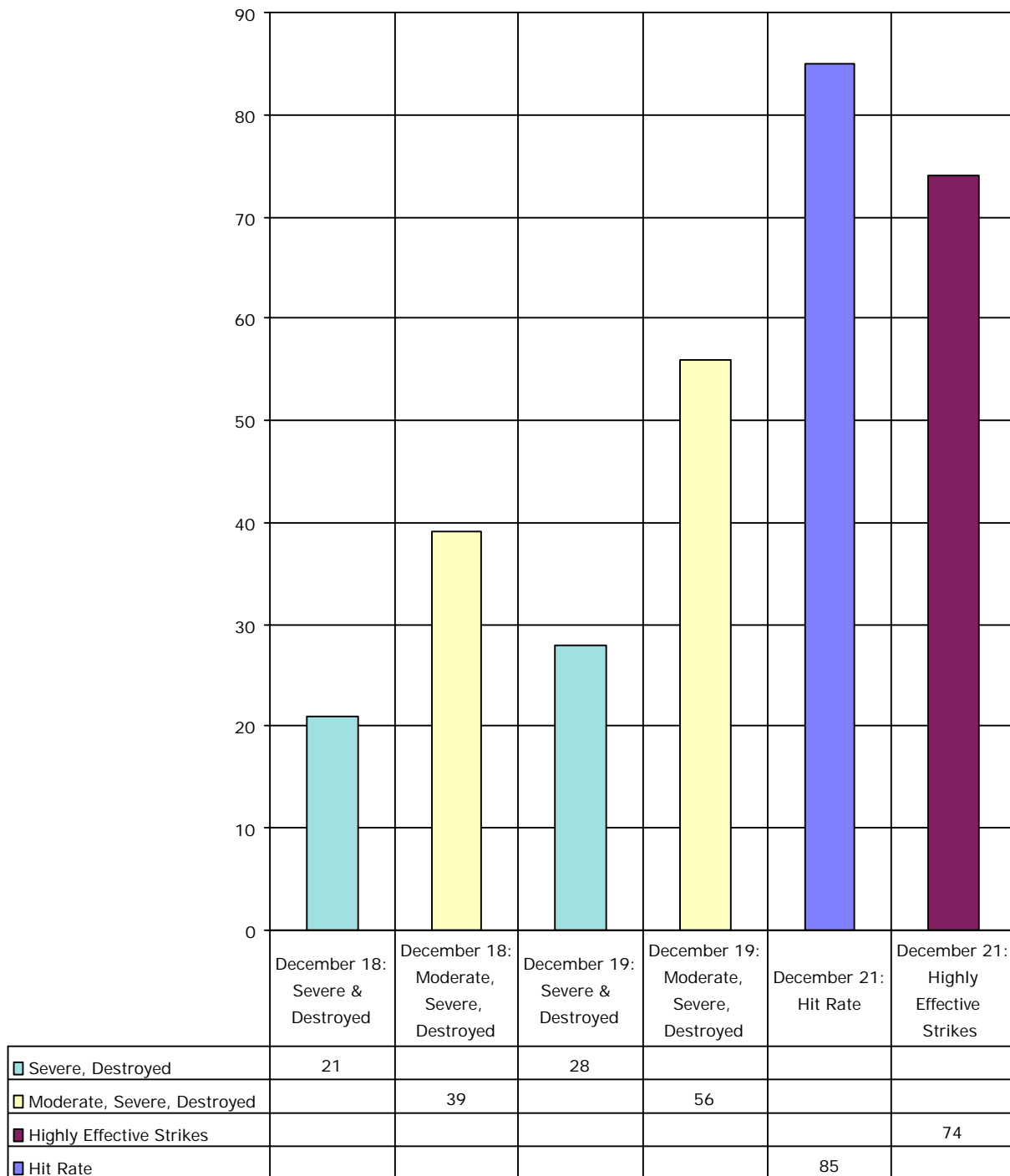
The fact is, however, that Desert Fox is a clear warning of just how difficult it is to fight highly political wars where the battle for perception and political influence is far more important than the military exchange rate. It is a warning that the political, strategic, and grand strategic dimensions of warfare are critical, and that neither the “revolution in military affairs” or Joint Vision 2010 begin to be an adequate view of the future. It is a warning that cruise missile wars do not offer immunity from the problems imposed by the need to limit collateral damage. It is a warning about the limits of counterproliferation and deterrence, and particularly about the value of attacking symbolic and political targets without a very clear picture of what is in them, the effect of destroying them, and the political impact.

There is also a very good chance that Saddam not only “won,” but also may ultimately be encouraged to start new adventures. He has shown he can ride out attacks. An end to meaningful inspections and monitoring probably offsets Iraq's physical losses, and he can certainly go on proliferating at a covert level. He has shown the Iraqis, the Gulf, and the world that he can survive another US attack. He will turn Iraq and the Iraqi people into martyrs in both his domestic political efforts and in dealing with the Gulf, Arab world, and Security Council. He may well have gained more support in lifting sanctions. He will also probably see Desert Fox as

a reason to put even more stress on concealment and “launch on warning, and to turn to terrorism and “unconventional warfare.”

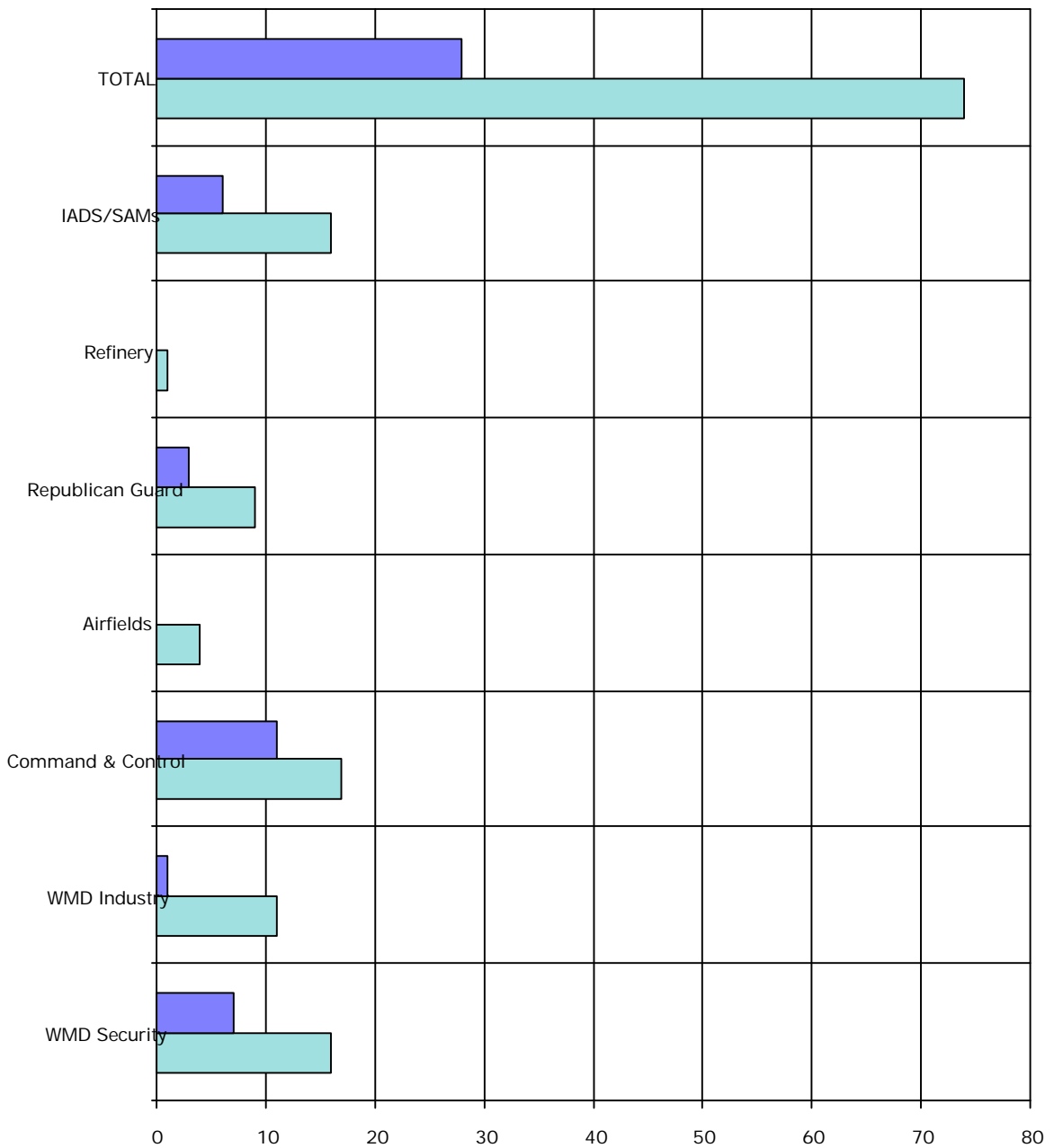
Hopefully, Saddam and Iraq will not succeed in spinning “Desert Fox” into victory. Hopefully, the further complications of impeachment and another crisis in the Arab-Israeli peace process will compound our problems. Hopefully, better damage assessment data will be in our favor, and we can mercifully forget the nonsense we issued on December 21st. More probably, however, we will ultimately see Desert Fox as at least a partial defeat. The more important question is whether we will learn enough from Desert Fox to our mistakes in shaping the “revolution in military affairs” and Joint Vision 2010. Desert Fox is a clear warning about their limitations in a clash where we had no losses, and any limited set back is relatively unimportant. We have no such guarantee of similar security in future contingencies.

Figure 1: Victory in Desert Fox: What a Difference a Change in Definitions in Less Than a Day Makes



Source: Adapted by Anthony H. Cordesman from data provided by OSD Public Affairs on the days shown.

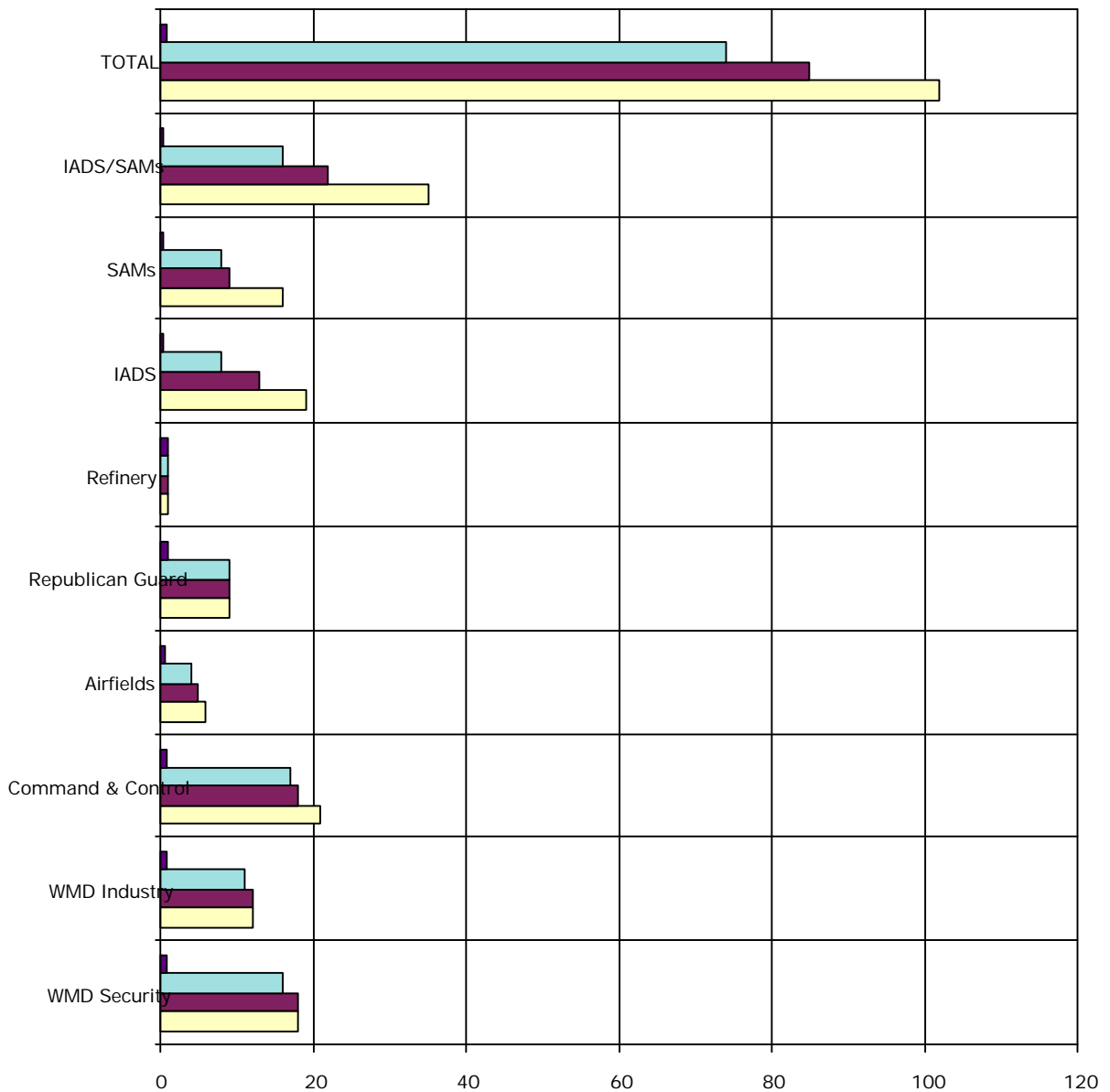
Figure 2: Victory in Desert Fox: Destroyed and Severe Damage on December 19 versus Full Success on December 21



	WMD Security	WMD Industry	Command & Control	Airfields	Republican Guard	Refinery	IADS/SAMs	TOTAL
Destroyed & Severe on Dec 19	7	1	11	0	3	0	6	28
Full Success on Dec. 21	16	11	17	4	9	1	16	74

Source: Adapted by Anthony H. Cordesman from data provided by OSD Public Affairs on the days shown.

.Figure 3: Victory in Desert Fox: Success by Category of Target Announced on December 21



	WMD Security	WMD Industry	Command Control	Airfields	Republican Guard	Refinery	IADS	SAMs	IADS/SAM	TOTAL
Success as a % of Planned	92%	92%	81%	67.00%	100%	100%	42%	50%	46%	83%
Full Success	16	11	17	4	9	1	8	8	16	74
Hits	18	12	18	5	9	1	13	9	22	85
Targets Planned	18	12	21	6	9	1	19	16	35	102

Source: Adapted by Anthony H. Cordesman from data provided by OSD Public Affairs on the days shown.

