

Gulf War II

Air and Space Power Led the Way

An Air Force
Association
Special
Report



Report Documentation Page

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Gulf War II

Air and Space Power Led the Way

Dr. Rebecca Grant is president of IRIS Independent Research in Washington, D.C., and a fellow of the Eaker Institute for Aerospace Concepts, the public policy and research arm of the Air Force Association's Aerospace Education Foundation. She is also a contributing editor to Air Force Magazine, the journal of the Air Force Association. Her professional research interests center on joint doctrine and airpower employment in joint campaigns.

By Dr. Rebecca Grant

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Front cover: A member of the USAF's Combined Weapons Effectiveness Assessment Team establishes the impact point of a precision guided bomb through the dome of a key Iraqi regime building. USAF photo by MSgt. Carla Kippes.

September 2003

1. USCENTAF, Operation Iraqi Freedom: By the Numbers, April 30, 2003.

2. Adam J. Hebert, "The Baghdad Strikes," *Air Force Magazine*, July 2003.

3. Patrick E. Tyler, "US Forces Take Control of Baghdad," *New York Times*, April 10, 2003.

4. Gen. Tommy R. Franks, CENTCOM commander, news briefing, March 22, 2003.

The Global War on Terrorism that began the morning of Sept. 11, 2001, seemed almost fated to lead to a second major war between the United States and Iraq. And it is now clear that the Air Force also was destined to play the leading role in creating the strategic conditions for victory in that war, executed by a total of 466,985 US and allied forces¹ in Spring 2003.

In the early morning of March 20, 2003 (local Baghdad time), two F-117 Stealth fighters launched out on a daring mission to bomb a specific building thought to be a Saddam Hussein hide-out.² Just three weeks later, US Marines pushed into downtown Baghdad and helped a crowd of Iraqis topple a statue of Saddam Hussein.³ The Iraqi capital belonged to US forces, and Saddam and his sons were nowhere to be seen.

The defeat of Saddam's regime was a dramatic advance in the Global War on Terrorism. It was also a new kind of victory, one that showed how airpower could alter the conditions for joint force operations.

Plans for Gulf War II—officially named Operation Iraqi Freedom, or OIF—started to coalesce in early 2002. Yet up until the night of March 20, the whole shape of the impending war was debated and discussed around the world.

For a year, the war was the subject of "a great deal of intense planning and a great deal of what-iffing by all of us" said Gen. Tommy R. Franks, Commander US Central Command (CENTCOM).⁴ Few guessed that the war would throw out the window a number of tried-and-true concepts about campaign shaping and phasing.

OIF was lauded for being extremely "joint," with conventional ground forces playing a role more prominent than had been seen in years. Indeed, the war's daily progress tended to be measured on the ground. How far had the 3rd Infantry penetrated into Iraq? When did the Marines cross the Diyala River in eastern Baghdad? Newly "embedded" TV crews produced riveting footage of

American soldiers and marines taking fire and shooting back. By contrast, coverage of the air war was rare.

Even so, this was an airpower war. Pre-war planning fine-tuned air and ground coordination mechanisms from the tactical to the operational level, all to produce the optimum level of joint firepower. Modern airpower made it possible to:

- Decimate Iraq's air defenses and communications sites before the war even started.
- Re-shuffle, at the last minute, the order of opening attacks.
- Wipe out much of the Republican Guard before US ground forces even made contact.
- Sustain the joint campaign despite fierce sandstorms and unexpected Iraqi resistance.
- Wage distinct and simultaneous fights in the south, north and west of Iraq.
- Create a strategic environment in which all of the strengths of US joint forces and coalition partners could be put to combined use against Iraqi forces.

Credit goes to the joint and coalition force for a stunning success. However, it was the recent developments in airpower—led by the United States Air Force—that put in place the entire framework for victory.

The War Before the War

For the Air Force, the preparations for OIF spanned more than a decade. Airmen from USAF, other US services, and coalition partners spent 12 years patrolling Iraqi airspace to enforce two UN-backed no-fly zones. In these efforts—known as Operation Northern Watch and Operation Southern Watch—patrols often were routine, but over time, a generation of airmen gained first-hand experience of flying and fighting in "the sandbox." Many aircrew members such as USAF F-15C pilot Capt. Samantha Weeks got their first taste of combat conditions while policing the no-fly zones. Weeks described a day when she and her flight



lead spotted an Iraqi jet that appeared to be in violation of the northern no-fly zone. “We got to commit out on that Iraqi plane,” said Weeks, “and that was awesome because you’re going to do the job you trained for every single day.”⁵

Then, in 1999, the mostly quiet air war began to heat up. UN inspection teams had since the end of Gulf War I been working in Iraq to uncover forbidden weapons of mass destruction. As Security Council members such as France and Russia lost interest in further enforcement of the UN sanctions, Saddam Hussein grew bolder. In late 1998, he expelled UN weapons inspectors from Iraq altogether. The Clinton Administration responded in December 1998 with Operation Desert Fox, a four-day airpower retaliation exercise that targeted sites suspected of containing Weapons of Mass Destruction (WMD), Republican Guard facilities, and air defense systems.

After that, the shooting never really stopped. The Iraqis became more aggressive, “painting” coalition aircraft with anti-aircraft sensors and firing on numerous occasions. The coalition fired back with carefully-placed precision attacks on Iraqi air defense systems. The total number of retaliatory strikes increased in 1999 and, over time, began to take a significant toll on Saddam’s air defenses.

In the year leading up to the March 20, 2003, start of the war, Washington redoubled its efforts. CENTCOM declared that Saddam’s forces had fired at coalition aircraft “nearly 500 times” in

the year 2002, sparking about 90 retaliation missions.⁶ Nov. 21, 2002, provided a typical example. Coalition aircraft bombed Iraqi air defense communication facilities near Al Kut and Basra. Back at the Pentagon, Rear Adm. David Gove, a Joint Staff spokesman, said American pilots in the no-fly zone “are essentially flying combat missions.”⁷ He went on to say, “Any opportunity that they have to understand the capabilities and the layout of Iraqi air defense weapons systems is useful for their own experience base, and there has been degradation of the integrated air defense system in Iraq.”

Air Force Lt. Gen. Michael Moseley, the Combined Forces Air Component Commander (a.k.a., “air boss”), later told reporters that, long before the official start of the war, US air commanders took full advantage of the opportunities opened up by Iraq’s defiant stance. The air component had in fact been executing a comprehensive plan, known as “Southern Focus,” to disrupt Iraq’s military command and control system. One key target was Iraq’s network of fiber-optic cable, through which it hoped to be able to transmit messages and maintain command and control of its forces in some future showdown with the United States. Moseley said that between June 2002 and March 20, 2003, CENTCOM airpower put 606 bombs on 391 carefully selected targets.⁸

The impact was already apparent when, on March 19, 2003, Col. Gary Crowder of Air Combat Command appeared at a formal Pentagon briefing,

Commander. Gen. Tommy Franks (right), commander, US Central Command, meets Brig. Gen. Rick Rosborg, commander of the 379th Air Expeditionary Wing, at a forward base. The war generated “a great deal of what-iffing by all of us” said Franks.

5. Capt. Samantha A. Weeks interview, September 2002.

6. John A. Tirpak, “Legacy of the Air Blockades,” *Air Force Magazine*, February 2003.

7. Rear Adm. David Gove, JCS spokesman, DOD news briefing, Nov. 20, 2002.

8. Michael Gordon, “US Air Raids in '02 Prepared for War in Iraq,” *New York Times*, July 20, 2003.

9. Col. Gary Crowder, Chief, Strategy, Concepts, and Doctrine, Air Combat Command, DOD news briefing, March 19, 2003.

10. Gen. John P. Jumper, remarks to National Space Symposium, April 10, 2003.

11. Vice President Dick Cheney, remarks to the Veterans of Foreign Wars 103rd National Convention, Aug. 26, 2002.

12. President George W. Bush, remarks at Cabinet photo opportunity, Sept. 24, 2002, White House transcript.

13. President Bush, Rose Garden remarks on Iraq Resolution, Oct. 2, 2002, White House transcript.

14. Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff, in "Iraq Remains a Threat to No-fly Zone Pilots, Aircrews," American Forces Press Service, Nov. 4, 2002.

where he estimated that Saddam had by that date effectively ceded "about two-thirds of his airspace" to coalition forces. "We are starting off in a significantly better position as a consequence of the northern and southern no-fly zones, which will enable operations that might not otherwise have been able to commence," Crowder added.⁹ Crowder's remarks may have surprised some, but not anyone who had been paying attention. Several weeks into the war, Gen. John P. Jumper, Air Force Chief of Staff, made public the fact that coalition aircraft between June 2002 and March 20, 2003, carried out "about 4,000 sorties" against the integrated air defense system in Iraq and against surface-to-air missiles and command and control. "By the time we got to March," Jumper added, "we think that they were pretty much out of business."¹⁰

The Case Against Iraq

These combat operations in the no-fly zones reflected a Bush Administration conclusion, made with 9/11 in mind, that Iraq was a mortal danger that could not truly be contained as long as Saddam Hussein remained in power. Four years with no United Nations inspections made it impossible to know what Saddam had done with his weapons programs.

Vice President Dick Cheney summarized part of the case against Iraq in a speech to veterans in August 2002.¹¹ Said Cheney: "Nothing in the last dozen years has stopped him—not his agreements; not the discoveries of the inspectors; not the revelations by defectors; not criticism or ostracism by the international community; and not four days of bombing by the US in 1998. What he wants is time, and more time, to husband his resources, to invest in his ongoing chemical and biological weapons programs, and to gain possession of nuclear arms."

Just as worrisome was the sympathy between Saddam's regime and al Qaeda. It was Osama bin Laden himself who first made the connection in 1998,

when he cited the no-fly zones over Iraq in his *fatwa* calling for the killing of Americans.

Regime change in Iraq was an essential part of the post-9/11 security strategy. Still, it felt unfamiliar to Americans. The bottom line was that, because Saddam's Iraq was or could well become a "safe harbor" for terrorists, then he simply would have to go—and soon.

"Congress must act now to pass a resolution which will hold Saddam Hussein to account for a decade of defiance," Bush urged in late September 2002.¹² The bipartisan resolution was a litmus test of the support for war, if necessary. "Countering Iraq's threat is also a central commitment in the war on terror," Bush said in an appearance with Congressional leaders on Oct. 2.¹³ "We know Saddam Hussein has longstanding and ongoing ties to international terrorists."

Bush asked Congress to pass a supportive resolution, and it complied on Oct. 11, 2002. Although many members expressed misgivings, Congress overwhelmingly authorized the use of military force against Iraq "as he determines to be necessary and appropriate" to defend the US and enforce UN resolutions.

For all intents and purposes, US pilots in the no-fly zones were at war even then. In November 2002, USAF Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff, declared, "Every mission that our pilots go on is considered a combat mission."¹⁴

For Americans, this was not a familiar way to wage war. The nation greatly preferred to have an undeniable *casus belli*, which would shield it from world criticism. Gulf War II, however, had to start without an admiring gallery cheering it on.

On Nov. 8, 2002, the UN Security Council passed Resolution 1441. It offered Iraq "a final opportunity to comply with its disarmament obligations." The resolution called for unrestricted access for weapons inspectors. It also warned that any "false state-



SAM Trap. July 2001 photo shows a truck-mounted Iraqi SAM tracking a coalition aircraft. US aircraft relentlessly attacked Iraq's air defense system in the year before March 20, 2003.

ments” or other non-compliance would put Iraq in material breach not just of 1441, but of the long series of binding UN resolutions dating back to April 1991—all of which were designed to prod Iraq into authentic disarmament. Those same resolutions formed the legal basis for the no-fly zones and gave the coalition a broad foundation for military action against Iraq.

“The world has now come together to say that the outlaw regime in Iraq will not be permitted to build or possess chemical, biological or nuclear weapons,” Bush said.¹⁵

Inspectors returned to Iraq in December, but things went sour immediately. On Feb. 5, 2003, Secretary of State Colin Powell reported, “Iraq never had any intention of complying with [the Security Council’s] mandate.” Powell cited evidence for Iraqi possession of weapons of mass destruction and referred to Iraq’s proven record of willingness to attack its neighbors and to use chemical weapons on its own people.¹⁶

However, ambivalence about preventive war was strong. Even the Gulf War I Commander, retired Army Gen. H. Norman Schwarzkopf, said, “Before I can just stand up and say, ‘Beyond a shadow of a doubt, we need to invade Iraq,’ I guess I would like to have better information.”¹⁷ Many Americans felt the same kind of unease. The supply of political support was limited.

On March 7, about two weeks before the war, UN inspectors published a 173-page report listing 29 areas where Iraq had not provided sufficient information

to inspectors and claiming that Iraq could retain weapons such as the nerve gas agent VX.¹⁸

On March 17, 2003, President Bush made a national television appearance to issue this ultimatum. “Saddam Hussein and his sons must leave Iraq within 48 hours.” He added, “Their refusal to do so will result in military conflict, commenced at a time of our choosing.”¹⁹

Across the Atlantic, America’s staunchest ally British Prime Minister Tony Blair faced a confidence vote on March 18. Blair spoke before Parliament of his commitment to Resolution 1441 as the legal basis for action in Iraq. Saddam had been “for years” in material breach of UN resolutions and in his lack of compliance had squandered this last opportunity. He said there was strong evidence that Iraq held weapons of mass destruction. The world had waited long enough, Blair said. Inaction now would cost dearly—well beyond the confrontation with Iraq. “What would any tyrannical regime possessing WMD think, viewing the history of the world’s diplomatic dance with Saddam?” Blair asked.²⁰ “That our capacity to pass firm resolutions is only matched by our feebleness in implementing them.” One day, he warned, regimes “will mistake our innate revulsion against war for permanent incapacity.”

Launching Operation Iraqi Freedom was the only way forward.

A New Kind of Plan

Early in the war, Franks said of it, “This will be a campaign unlike any in

15. President Bush, Rose Garden remarks, Nov. 8, 2002, White House transcript.

16. Secretary of State Colin Powell, “Iraq: Denial and Deception,” speech to UN Security Council, Feb. 5, 2003.

17. Thomas E. Ricks, “Desert Caution,” *Washington Post*, Jan. 28, 2003.

18. 12th Quarterly Report of the Executive Chairman of the United Nations Monitoring, Verification, and Inspection Commission, Feb. 28, 2003.

19. President Bush, address to the nation, March 17, 2003, White House transcript.

20. British Prime Minister Tony Blair, text of speech, *The Guardian*, March 18, 2003.

21. Franks, CENTCOM news briefing, March 22, 2003.

history.”²¹ He was speaking the unvarnished truth. The war was different because the core of US military strategy had undergone a seismic shift.

Until the very end of the 20th century, US military strategy still owed much to 19th century concepts, though modified to take account of the emergence of airpower. Forces set conditions for dominant maneuver and then closed in to defeat the enemy. In the 20th century, airpower became a decisive force and control of the air was a prerequisite for everything else. An opening air campaign knocked out enemy air defenses, beat up enemy forces on the ground, and granted freedom of maneuver and increased firepower to armies on the ground.

The unfolding of this sequence might take months or years (as it did in World War II) or mere weeks (as in the Gulf War of 1991), but one had to observe the sequence to win at acceptable cost.

The planners of OIF had far wider choices—principally because the air component already had created a strategic environment in which the order of attack mattered less than it once did. Sequential air and ground operations were not the only choices in 2003.

Signs suggesting such a strategic shift

had been visible for a few years. In Operation Allied Force in 1999, there was no formal land component involvement at all, and no allied soldiers marched into Kosovo until the capitulation of the Milosevic regime. The war in Afghanistan—Operation Enduring Freedom—also departed from the script. It soon turned out to be a proving ground for the use of dominant airpower teamed with a few hundred special operations forces to maneuver irregular Afghan forces on to seize major cities.

These two wars dethroned the old “maneuver-and-fires” dogma, suddenly removing it from the core of the joint campaign design. No longer would warfare have to fit a sequential mold. Maneuver-and-fires still would govern some important types of land force engagements, but it would no longer be the dominating spirit of American war planning. Kosovo and Afghanistan also broke up old notions of “supported-supporting” relationships among the service components and opened the way for new concepts of how the components worked together.

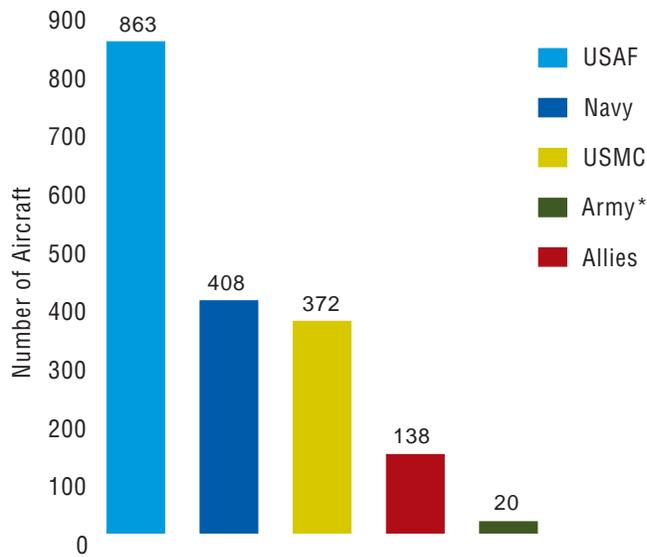
With air dominance over Iraq already in hand, it was possible to attack simultaneously, at different locations, and aim for multiple objectives at the

Air Boss. USAF Lt. Gen. Michael Moseley, Combined Forces Air Component commander—the “air boss.” From the start, the coalition enjoyed air dominance, a fact that set the terms for the shape and pace of the war.



USAF photo by SSgt. Jerry E. Clemens, Jr.

Total Coalition Aircraft



The air armada in the Gulf comprised 1,801 combat and support aircraft.

	Fighter	Bomber	SOF	ISR	C2	Airlift	Tanker	Other	Total
USAF	293	51	131	60	22	111	182	13	863
Navy	232	0	0	29	20	5	52	70	408
USMC	130	0	0	0	0	0	22	220	372
Army*	0	0	0	18	0	0	0	2	20
Allies	80	0	14	11	4	10	12	7	138

(Charts in this study are based on US Central Command's "Operation Iraqi Freedom—By the Numbers.")

*Does not include helicopters.

same time. This campaign wasn't going to look anything like a command and staff college study-book.

The shift in warfare was just what was needed to handle a campaign that had to do everything from suppressing Scud missile launches and protecting Iraq's economic infrastructure to hunting down Saddam and pushing ground forces off on a fast campaign. Air dominance set up the strategic conditions for shaping and phasing elements of the campaign.

The new realities were only too evident in multiple debates about when and how to begin the air campaign—"A Day"—and ground campaign—"G Day."

A key player in these debates was Air Force Maj. Gen. Daniel P. Leaf. Gulf War II air boss Moseley selected Leaf to be his personal representative to Army Lt. Gen. David McKiernan, the Combined Forces Land Component Commander (a.k.a., "land boss"). Leaf was in a unique position to observe interplay of

personal institutional factors in war planning. "There were all kinds of discussions of timing," he said, "and there were questions as to whether there'd be 14 days between A-Day and G-Day, and then six days, or three days, or no days."²²

As it turned out, there was no need to delay the land campaign; the US had already conducted an undeclared air war. As retired Gen. Merrill A. McPeak, a former USAF Chief of Staff, declared in a June 5 *Washington Post* commentary: "It's incorrect to say that, unlike Desert Storm 12 years before, there was no independent air campaign in advance of the jump off of our ground forces from Kuwait."²³ As it turned out, air-power had already done its work, and the ground war would commence half a day before all-out air operations resumed.

Similarly, there was no need to wait to insert special operations forces on the ground. Reports of clandestine

22. Maj. Gen. Daniel P. Leaf interview, June 27, 2003.

23. Gen. Merrill A. McPeak, USAF (Ret.), "Leave the Flying to Us," *Washington Post*, June 5, 2003.

Black Jet. The first F-117 to strike the Baghdad bunker returns to base just after sunrise on March 20. Franks went for Saddam's jugular, ensuring the war did not follow a script.



USAF photo by SSgt. Derrick C. Goode

teams already in place in Iraq had circulated for months. By mid-March, teams were in place at key locations, ready to help direct coalition attacks when the time came.

Franks could afford to bide his time and wait to open the war exactly as he wished. Whether air or land or special forces fired the first shots did not matter much in these altered strategic conditions. This new twist to warfare confounded most of the “wartime-edition” pundits and surprised not a few individuals with significant military credentials, too.

Months of planning and map-table rehearsals acquainted commanders with every variation of how the campaign might unfold. Instead of following a single, rigid plan, commanders relied on the knowledge gained from testing different options to make quick decisions based on how Iraqi forces reacted. The number one priority for Franks was to get to Baghdad—and, with its overwhelming force, the coalition had many tactical options about how exactly to make that happen. “Joint warfare unfolded differently than we expected, but, because of the extensive planning and speed and agility represented, the change in the execution plan didn’t matter,” said Vice Adm. Tim Keating, the Combined Forces Maritime Component Commander.²⁴

OIF started in its own way with initial shaping actions just as Bush’s 48-hour deadline expired early on March 20, local Baghdad time. According to Myers, these “early battlefield prepara-

tions” included air strikes on radars in western Iraq and near Basra in southern Iraq. Air attacks also neutralized artillery in the Al Faw peninsula northeast of Kuwait. Next, “coalition forces began inserting Special Operations Forces throughout western and southern Iraq to conduct reconnaissance operations and take down visual observation posts on the southern Iraqi border” Myers said.²⁵

CENTCOM saw evidence that the Iraqis were trying to mount an operation to destroy their own oilfields. Franks believed the coalition could “get the oil fields” before the Iraqis torched them. “We saw an opportunity to achieve one of our operational objectives,” said Franks, “which was to prevent the destruction of a big chunk of the Iraqi people’s future wealth.”²⁶

“Let’s Go”

The real shocker, though, was Franks’ last-minute decision to go for Saddam’s jugular—literally.

On the afternoon of March 19, CIA Director George Tenet took a scintillating piece of intelligence to the White House.²⁷ There, he told the President that a highly placed source had passed the word that Saddam for several hours would be at a residence in the southeastern area of Baghdad. The building was a “compound” at which Iraqi leaders were known to congregate. Secretary of Defense Donald H. Rumsfeld described the target this way: “We had what I would characterize as very good intelligence that it was a senior

24. Vice Adm. Timothy Keating, CFMCC, “This Was a Different War,” US Naval Institute *Proceedings* interview, June 2003.

25. Myers, DOD news briefing, March 21, 2003.

26. Franks, CENTCOM news briefing, March 30, 2003.

27. John Diamond, Dave Moniz, and Jack Kelly, “Urgency to Take Out Saddam Leads to Shift in US Strategy,” *USA Today*, March 21, 2003.



Iraqi leadership compound.”²⁸ Saddam was elusive in the extreme. Throughout the 1991 Gulf War, coalition forces worked hard to pinpoint his location, but always found themselves to be several hours behind their quarry.

The Iraqi strongman was known to employ body doubles, decoy cars, and various other methods to keep his whereabouts secret and his foes off balance.

The intelligence Tenet brought to the White House was perhaps the best the Americans had ever obtained. The question: Could the building be attacked in time?

Only USAF’s stealthy F-117 had the chance to survive Baghdad’s air defenses and strike in time. The “Black Jet,” however, could only sortie at night when the darkness cloaked its “visual

signature” from enemy gunners. In Baghdad, it was already nighttime, with dawn only a few hours away, so speed was critical.

Mission planners responsible for the 12 F-117s at Al Udeid, Qatar, picked Lt. Col. David F. Toomey III and Maj. Mark J. Hoehn to fly the mission.²⁹ The squadron was on a war-time footing and had two F-117s in pristine condition—that is, low-observable maintenance complete to combat standards—and set to go. The problem was weather over Baghdad. Low clouds would interfere with the F-117’s infra-red targeting for the laser guided bombs, which was the system used to such great effect in the 1991 Gulf War and subsequent campaigns. Fortunately, the F-117s had a new weapon. The EGBU-27 had an Enhanced Paveway III seeker that

28. Defense Secretary Donald H. Rumsfeld, DOD news briefing, March 20, 2003.

29. Hebert, “The Baghdad Strikes,” *Air Force Magazine*, July 2003; and Lorenzo Cortes, “Air Force F-117s Open Coalition Air Strikes with EGBU-27s,” *Defense Daily*, March 21, 2003.

30. Hebert, *Air Force Magazine*, July 2003.
 31. Dan Balz, "US Urges Iraqi Army Loyalists to Give Up," *Washington Post*, March 21, 2003.
 32. Anthony Shadid, "Explosions Rip through the Quiet of Morning," *Washington Post Foreign Service*, March 20, 2003.
 33. Shadid, *Washington Post*, March 20, 2003.
 34. Shadid, *Washington Post*, March 20, 2003.
 35. Franks, CENTCOM news briefing, March 22, 2003.
 36. Rumsfeld, DOD news briefing, March 21, 2003.

permitted the weapon to track to its target using GPS coordinates.³⁰ No one had ever dropped an EGBU-27 in combat, but the F-117 pilots were willing to give it a try.

So was Bush. "Let's go," said the President to his aides. Bush had thus given the go-ahead for a war-opening strike just after 3 a.m., local Baghdad time.³¹

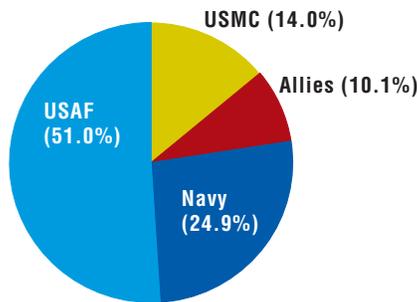
Toomey and Hoehn took off at 3:38 a.m. (Baghdad time) and began the two-hour flight to Saddam's capital. At 5:34 a.m. (Baghdad time) came the multiple thunderclaps of four 2,000-pound bombs exploding at the target site.³² Within a few minutes, 40 Tomahawk Land-Attack Missiles, launched from the USS *Couper*s and other warships at sea, hit other downtown Baghdad targets, notably the intelligence service headquarters and a key Republican Guard installation.³³ "A minute passed before the air raid siren began to wail," wrote

Anthony Shadid, a *Washington Post* reporter in Baghdad that morning. "For the next hour, long pauses were interrupted by tracer bullets racing across the sky, and more anti-aircraft rounds."³⁴

For the F-117 pilots, it was a dangerous mission. Dawn already was breaking as they reached their target, and thus their egress would have to be flown in daylight. But the strike paid off. Franks said later that the attacks were coordinated "about as close ... as I have ever seen ... and, as you know, I have worked a great many of them in Afghanistan."³⁵ Rumsfeld told reporters in Washington, "There's no question but that the strike on that leadership headquarters was successful. We have photographs of what took place. The question is, what was in there?"³⁶ Even though they missed Saddam this time, the attack put the regime on notice that no place was safe. And the sudden strike had wider benefits. The initial F-117 and TLAM

The Air Force provided 51 percent of the combat aircraft and all of the heavy bombers. Most of the tanker, airlift, and ISR aircraft came from USAF units. The Air National Guard and Air Force Reserve Command accounted for more than 300 aircraft.

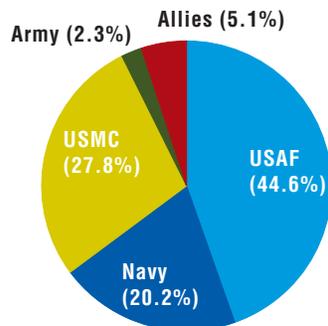
Combat Aircraft



	Fighter	Bomber	SOF	Total
USAF	293	51	131	475
Navy	232	0	0	232
USMC	130	0	0	130
Army*	0	0	0	0
Allies	80	0	14	94

*Does not include helicopters.

Support Aircraft



	ISR	C2	Airlift	Tanker	Other	Total
USAF	60	22	111	182	13	388
Navy	29	20	5	52	70	176
USMC	0	0	0	22	220	242
Army	18	0	0	0	2	20
Allies	11	4	10	12	7	44



strikes, said Leaf, “changed the timing” for the whole operation. “Against all odds,” he noted, “we had tactical surprise because of [the US decision to strike] that target of opportunity.”³⁷

Goals of OIF

Full-scale ground operations started 24 hours later. The 1st US Marine Expeditionary Force entered the Iraqi city of Umm Qasr on the Faw Peninsula, and then moved in to secure Iraq’s southern oilfields. American Special Operations Forces seized an airfield in Western Iraq. Navy SEALs took over two Iraqi oil terminals in the Persian Gulf. Then, in the early morning hours of March 21, 2003 (local time), the US Army’s 3rd Mechanized Infantry Division charged out of Kuwait into southern Iraq, hell-bent for Baghdad.³⁸

The campaign goals demanded simultaneous actions by different components at different places as the war began. Rumsfeld laid out the specific objectives:³⁹

- Put a decisive end to Saddam’s regime.
- Eliminate Iraq’s WMD, delivery systems, and production centers.
- Kill, capture, or drive out terrorists in Iraq.
- Collect intelligence to help break up terrorist networks.
- Collect information about WMD efforts in other nations.
- Bring humanitarian relief supplies to Iraqis.
- Secure Iraq’s oil fields.
- Install a democracy.

“We did not choose this war,” Rumsfeld said.⁴⁰ “Saddam Hussein was given a

37. Leaf interview, June 27, 2003.

38. Myers, DOD news briefing, March 21, 2003.

39. Rumsfeld, DOD news briefing, March 21, 2003.

40. Rumsfeld, DOD news briefing, March 21, 2003.

41. Bradley Graham and Vernon Loeb, "An Air War Of Might, Coordination And Risks," *Washington Post*, April 27, 2003.

42. Rumsfeld, DOD news briefing, March 21, 2003.

43. Rumsfeld, DOD news briefing, March 21, 2003.

44. Lt. Gen. T. Michael Moseley, CFACC, DOD news briefing, April 5, 2003.

45. Moseley, DOD news briefing, April 5, 2003.

46. Myers, DOD news briefing, March 21, 2003.

choice by the international community: Give up your weapons of mass murder, or lose power. He chose unwisely, and now he will lose both." Out in the Gulf, where the preparation was over and the action beginning, Franks instructed subordinate commanders to make it "fast and final." Moseley said, "That was the mark on the wall for his commanders."⁴¹

Strategic Airpower

CENTCOM based its planning on a collection of "Days" — "S-Day" for the moment that Special Operations Forces would begin their work; "A-Day" for the start of the air campaign; "G-Day" for the formal opening of the ground invasion.

As it turned out, A-Day began one half day after the start of G-Day. In the final, nighttime hours of March 21, local Baghdad time, coalition bombers, fighters, and cruise-missile-firing warships unleashed precision attacks on numerous fixed, strategic targets throughout Iraq. Soon, Rumsfeld announced that A-Day had arrived, and he predicted instant success against the Iraqi leaders.⁴²

"Their ability to see what is happening on the battlefield, to communicate with their forces, and to control their

country, is slipping away," Rumsfeld proclaimed.⁴³ A-Day was the product of much deliberate planning plus a dash of last-minute improvisation (for example, the sudden scrapping of some targets in southern Iraq because coalition forces had already taken control there).

Moseley said, "Even during the time that we were at the peak of [war in Afghanistan], we began to think through what might be possible if we were asked to conduct this campaign."⁴⁴ He then pointed out the major difference between Gulf War I and Gulf War II: "Did we get 30 days of [battlefield] preparation, like in the first desert war? No, but I don't think we needed 30 days of preparation."⁴⁵ (The pure "air war" actually lasted 38 days.)

The opening strikes proved Moseley right. "Several hundred military targets will be hit over the coming hours," JCS Chairman Myers noted to reporters, and, indeed, Iraq felt the sting of more than 700 strike sorties and more than 500 cruise missile attacks.⁴⁶ This "massive air campaign" as Myers called it, differed from others that came before it. First, it was more precise than any other. From B-2 bombers with 16 Joint Direct Attack Munitions to F-15E fighters with laser-guided bombs, the campaign was heavy on precision

Heavy Hammers. A B-1B bomber (top) takes off while a B-52H prepares to follow. USAF's heavy bombers delivered a huge amount of tonnage. The strategic campaign was not an independent event but rather was used to advance the joint campaign.



USAF photo by SSgt. Charlene M. Franken



Teamwork. Tankers—such as this KC-135—were the backbone of the air operation, which was unprecedentedly “joint” and “combined.” Pictured here are fighters from USAF (F-15E, F-16CJ, F-117), the RAF (GR-4 Tornado), and RAAF (F/A-18 Hornet). Navy and Marine aircraft played key roles.

attack. “Our air forces continue to strike regime command and control and military formations virtually all over the country,” Franks said on March 24.⁴⁷

This strategic air campaign, however, generated expectations different from those of 1991. A different philosophy was apparent right from the start. Critical parts of the infrastructure hit in Gulf War I were not targeted in the same way in 2003. Electricity in Baghdad stayed on virtually throughout the war, and this was no accident. Keating noted that you don’t necessarily have to pull the plug on Iraq’s electrical grid in order to take down the integrated air defense system. “There are other ways,” said Keating.⁴⁸

The strategic air campaign grew out of the broad joint campaign objectives articulated by Rumsfeld and underscored by Franks. It was not crafted to overturn Saddam’s regime in a single night or to send political messages. Planners made no move to lace together clever patterns of air strikes in order to break the “will” of the people or deflate the regime by destroying all the “strategic” targets that it held most dear.

Indeed, American military leaders by and large refrained from joining the bizarre claims of the “shock and awe” crowd who were so prominent in the media. Rumsfeld, for one, warned that “it’s a stretch” to think that such scare tactics could work against the murderous regime in Iraq. As for Moseley, he had this to say: “The term ‘Shock and Awe’ has never been a term that I’ve used. I’m not sure where that came from.”⁴⁹

In sum, the strategic campaign was not an independent event but rather was used to advance the joint campaign. In Gulf War I, target categories were carved up by type and function—electrical power, oil, leadership, and so forth. In 2003, the CFACC’s strategy-to-task mission comprised 11 objectives and used them to allocate air strikes and build master attack plans. The mission area “UW” (unconventional warfare) was to support the needs of Combined Forces Special Operations Command Commander. Two other mission areas were focused on suppressing and neutralizing WMD delivery systems and infrastructure. Half of the air capability was allocated to a single category of counter-land support to the land component commander, McKiernan.⁵⁰

Thus, the “strategic” portions of the air campaign actually crossed the seams of various mission areas. Strikes such as those on communication nodes or airfields may have looked like classic 20th century targeteering, just executed with more precision and efficiency. In reality, the interweaving of air component objectives in the daily efforts made the “strategic” campaign simply one piece of the air-war mosaic.

The coalition’s 2003 strategic air campaign differed from the 1991 version in two other significant ways: its extreme caution about collateral damage and its innovative targeting of time-sensitive and dynamic targets.

Collateral Damage

Just as aircrews planned ingress and

47. Franks, CENTCOM news briefing, March 24, 2003.

48. Michael R. Gordon, “War Planners Would Save Enough of Iraqi Army to Rebuild It,” *International Herald Tribune*, March 11, 2003.

49. Moseley, DOD news briefing, April 5, 2003.

50. USCENTAF, Operation Iraqi Freedom: By the Numbers, April 30, 2003.

Nerve Center. It was always busy in USAF's Combined Air Operations Center, located at Prince Sultan AB, Saudi Arabia. Coalition planners needed a sophisticated process not only for coordinating strikes but also for managing or avoiding collateral damage.



USAF photo by MSgt. Michael E. Best

egress routes, initial points, release points, and defensive measures for each target, air component planners assessed each potential target in CENTCOM's database for ways to hold collateral damage to a minimum. "My objective is to create as little collateral damage effect as I have to," said Moseley.⁵¹

The Iraqis made this goal especially tough to achieve. They routinely parked fighters or air defense systems next to civilian schools and parks, daring coalition forces to attack. According to Rumsfeld, officials of the ruling Baath Party had established 123 of its offices within schools around the nation.⁵²

Faced with such tactics, coalition planners needed a sophisticated process for managing or avoiding collateral damage in Iraq. Hence, it was no surprise that air strikes in Baghdad were also subjected to rigorous analysis and evaluation at the CAOC.

"Collateral damage is really ... two separate pieces," explained a CENTCOM briefer a few weeks before the war. One piece focused on damage to infrastructure. The other centered on unintended casualties among noncombatants.⁵³ To prevent both, US planners ran every fixed target through a vetting process to evaluate the prospect of collateral damage. USAF MSgt. Douglas Frickey, who served in the CAOC throughout the war, said, "We use several types of high-tech electronic and computer program models, based on mathematical theories, to help us with the collateral damage estimation process."⁵⁴

In planning an attack on a military target, planners could vary the aim

points, the attack azimuth, or the time of day for the attack, all to spare lives and property. No one believed the process would be perfect every time, but advance evaluation could put logic into it, the planners thought. By the time OIF started, Baghdad had been examined and evaluated, and the air component had built a database of collateral damage metrics for potential targets. This was no mean feat, given that the CAOC database ultimately grew to more than 25,000 desired mean points of impact, or "DMPIs," for all types of targets.⁵⁵ Still, coalition forces were moving so quickly, Frickey said, "we were providing collateral damage estimation information around the clock."⁵⁶

The net effect was a degree of control and precision which far exceeded anything seen in previous wars. Early in the conflict, Rumsfeld grew annoyed with a reporter who was comparing the attacks to those carried out in World War II. "There is no comparison," he shot back. "The targeting capabilities and the care that goes into targeting to see that the precise targets are struck and that other targets are not struck is as impressive as anything anyone could see."⁵⁷

Careful analysis paid off. "I think you have seen time and time again military targets fall while the civilian infrastructure remains in place," Franks said a week into the campaign. "And it's the same with civilian lives."⁵⁸ Moseley, in postwar interviews, said that he and other air commanders were obliged to obtain Rumsfeld's personal approval to

51. Moseley, DOD news briefing, April 5, 2003.

52. Rumsfeld, DOD news briefing, April 11, 2003.

53. DOD background news briefing on targeting, March 5, 2003.

54. Douglas H. Stutz, "Inside the CAOC: Saving Lives with Collateral Damage Estimation," CFACC Public Affairs, Report 7, 2003.

55. USCENTAF, By the Numbers.

56. Stutz, Report 7, 2003.

57. Rumsfeld, DOD news briefing, March 21, 2003.

58. Franks, CENTCOM news briefing, March 30, 2003.

undertake any air strike that could likely result in the deaths of 30 or more Iraqi civilians. Proposals to strike such targets came up more than 50 times during the war; in all cases, Rumsfeld gave his military leaders authority to proceed.⁵⁹ Some air-delivered munitions did malfunction or go long and miss targets. However, the coalition's ability to adjust its attacks to minimize collateral damage was nothing short of remarkable. Where the war was unpopular, there were outcries about the brutality of "bombing Baghdad," but, as the war progressed, the strategic air campaign produced little to support complaints.

Time-Sensitive Targets

The Air Force and other elements of the air component worked equally hard to improve the coalition's ability to attack time-sensitive targets. New adversary tactics—such as selective use of SAM radars as practiced by Serbia's forces in the 1999 Kosovo War—put a premium on tracking elusive and fleeting targets. The Global War on Terrorism made these pop-up targets a major element of any air campaign. Rarely would ground forces be in position to chase terrorists spotted by some Intelligence-Surveillance-Reconnaissance (ISR) platform or seize a WMD site. Control over these important targets rested mainly with airpower.

CENTCOM also ironed out its own means for vetting targets. Approval delays and lack of understanding of rules of engagement (ROE) had caused immense problems in Kosovo and even in the Afghanistan war. Before combat began, one CENTCOM officer (an A-10 pilot) said the control structure for operations in Iraq was very flat, designed to push decision authority down quite far in order to match combat tempo. "I don't believe you'll see the kind of challenges that military commanders in Kosovo faced," he said. "I think the President, Secretary [of Defense], and General Franks have a very good agreement [that] only those key targets have to be elevated" and for,

other targets, "we allow the battlefield commanders to make those decisions" with pre-established rules.⁶⁰

For OIF, the air component narrowed and thus clarified its definitions. Time-sensitive targets (TSTs) included Iraqi leadership, terrorists, and WMD. There was another category called "dynamic targets," defined as those that were "highly mobile and otherwise important" but not included in any of the three TST categories. The optimum technique for striking both types was to divert airborne strike aircraft in real time.

Striking TSTs were tough. The task devoured intelligence. Fortunately, the air component had an armada of ISR assets. ISR platforms flew about 1,700 sorties during Gulf War II.⁶¹ Volume, concentration, and overlap produced more situation awareness and detailed data than was the case for any other air war in history. The Air Force ISR aircraft in the region included eight E-8 Joint STARS aircraft, nine RC-135 Rivet Joint aircraft, 15 high-flying U-2 spyplanes, and a Global Hawk. The Navy provided more than 30 P-3s. Meanwhile, 19 Air Force E-3 AWACS, 20 Navy E-2 AEW aircraft, and the E-8s fanned out in a command and control network. More than 50 satellites in space supported the air component for communications, navigation, and surveillance.⁶² Apart from these dedicated C4ISR platforms, many bombers, fighters, and gunships carried specialized target acquisition capabilities that made contributions to the overall ISR picture.

The ISR assets searched for targets for both the air and land component commanders and immediately fed back images for bomb damage assessment (BDA). Every day, said Moseley on April 5, "we've had Predators over the top of Baghdad, looking for surface-to-air missile radars, looking for missile launchers that he's got up in the parks and some of the athletic areas, and looking over some of the leadership targets that we struck to help us determine whether we have to restrike it or whether we can leave it alone."⁶³

59. Bradley Graham, "US Moved Early for Air Supremacy," *Washington Post*, July 20, 2003.

60. DOD background news briefing on targeting, March 5, 2003.

61. Robert S. Dudley, "The Gulf War II Air Campaign, by the Numbers," *Air Force Magazine*, July 2003.

62. USCENTAF, *By the Numbers*, April 30, 2003.

63. Moseley, DOD news briefing, April 5, 2003.

Clear View. USAF pilots put the finishing touches on an E-8 Joint STARS aircraft. ISR aircraft such as the E-8 gave commanders and operators an unparalleled view of the battle space, which combat forces used to great advantage.



USAF photo by SSgt. Matthew Hannen

It all added up to the ability to stare at targets and track enemy activity. Ultimately, the air component would prosecute 156 true TSTs and another 686 dynamic targets.⁶⁴

Coalition Components

As the shared use of ISR assets suggested, the air and land components had a whole new type of partnership in OIF. Perhaps this was the biggest transformation of all—and it did not come easily. Understanding the nuts and bolts of this new partnership was essential to understanding the conduct of OIF.

Misunderstanding between air and ground commanders had been a major sore spot in Gulf War I. Sparks flew over the alleged inflexibility of the Air Tasking Order (ATO) process and the tally of Iraqi tanks, armored vehicles, and artillery pieces destroyed by airpower. During the four-day ground operation in February 1991, the Army's extension of the fire support coordination line gave fleeing Republican Guard forces 17 critical hours of protection from concentrated air strikes.⁶⁵

Ten years later, the problems of coordination were still there. They ran deep in the doctrines and philosophies of how to win America's wars. It took the sobering effect of enemy firepower to uncover them—and barely in time.

The setting was Operation Enduring Freedom, the 2001-02 war against terrorist infestations in Afghanistan. Initially, there was no land component in theater for OEF; American Special Operations Forces teamed up with on-

call airpower and friendly Afghan forces to dominate the battle space and take back Afghanistan from the Taliban. When the land component was in place and ready to commence operations in mid-November 2001, commanders found that land forces had little experience in dealing with the unique operational requirements, battlespace control measures, and politically-sensitive rules of engagement for airpower forces in the theater.

The confusion showed up most dramatically in Operation Anaconda, a major ground operation staged in the wilds of Afghanistan in March 2002. From the start, the forces of Operation Anaconda ran into fierce resistance when they went after al Qaeda terrorists holed up in the Shah-e-Kot Valley. After a rough start, though, persistent airpower and smart tactical decisions by engaged Army forces got the operation back on track and the Shah-e-Kot Valley was cleared of al Qaeda forces in two weeks.⁶⁶

Although the troops performed impressively, observant senior commanders, particularly within the Air Force, were shaken by the unnecessarily close call. After-action analysis made clear that the land component had missed many opportunities to coordinate with the air component prior to execution.⁶⁷

Better component coordination for the much bigger fight ahead in Iraq had to start with advance planning. The components had to build stronger working relationships and establish some shared understanding of what

64. USCENTAF, *By the Numbers*, April 30, 2003.

65. Rebecca Grant, "The Great Escape," *Air Force Magazine*, March 2003.

66. Rebecca Grant, "The Airpower of Anaconda," *Air Force Magazine*, September 2002.

67. Rebecca Grant, "The Clash About CAS," *Air Force Magazine*, January 2003.

airpower could and could not do for the land component and other elements of the joint force. As planning for Iraq accelerated, Moseley hand-picked senior colonels and dispatched them to other key headquarters, such as that of Keating's Combined Forces Maritime Component in Bahrain. Moseley sent a one-star general to be his personal representative at CENTCOM's forward headquarters, as well as sending Leaf to work in the McKiernan's headquarters. "I provided an airman's perspective, with the understanding of the CFACC priorities and intent, directly to the commander and his staff, without having to go through a phone call, a VTC, or an e-mail," Leaf said.⁶⁸

Moving Ahead

Now the components would need to call on those relationships as the two-pronged land offensive drove deeply into Iraq. By March 21, lead elements of the 7th Cavalry Regiment of the 3rd Infantry Division, were 100 miles into Iraq.⁶⁹ That advance matched that of the longest ground maneuver in Gulf War II, but the force did it in one fourth the time. Behind the spearhead, the 101st Airborne Division crossed into Iraq, while special operations forces engaged to the north and west.

On this two-pronged attack rested the main hopes for the campaign. The strategic design for defeating Iraq's armed forces took into account the disposition of those forces.

In 1991, Iraq's forces were mostly clustered on the border with Saudi Arabia. Coalition forces had to destroy tanks and knock out artillery with airpower before its land component forces could punch through the lines. In 2003, however, Iraq's forces were scattered throughout the California-sized country. In southern Iraq, one could find an armored division at Samawah, an infantry division 75 miles away near Nasirayah, and a mechanized division just north of Basra, nearly 100 miles further east. Two more infantry divisions and an armored division waited in the rear, 50 to 75 miles deeper inside Iraq.⁷⁰

These regular Iraqi divisions were too widely dispersed to be mutually supporting. Certainly, they might manage to stage a few pitched battles, but, to counter the coalition, they'd have to form up somewhere on the route of advance and counterattack in a big way. Isolating and destroying the Iraqi forces piece by piece would strip them of the power to maneuver as large formations.

68. Leaf interview, June 27, 2003.

69. Association of the US Army, "Operation Iraqi Freedom Timeline," June 2003.

70. *Washington Post* graphic, "Iraq: Setting the Stage for War," March 2, 2003.

USMC photo by Sgt. Paul L. Arstine II



Armor. Pre-war accounts credited the Republican Guard with having 900 top-of-the-line tanks, plus older systems such as this Soviet T-55 destroyed near An Numaniyah Bridge. Coalition airpower and land forces shredded Iraqi armor whenever encountered.

SOF. The air component teamed with Special Operations Forces and highly trained controllers to pinpoint targets for attack. Here, a USAF MH-53M Pave Low IV of the 21st Special Operations Squadron pulls a hard left on a mission over Iraq.



USAF photo by SSgt. Jerry Morrison

71. Lt. Gen. John Abizaid, CENTCOM Deputy Commander, news briefing, March 23, 2003.

72. Abizaid, CENTCOM news briefing, March 23.

73. Leaf interview, June 27, 2003.

74. Lt. Gen. William Wallace, V Corps Commander, DOD news briefing, May 7, 2003.

Land forces moved out. British and American Marines worked to quell resistance around Basra in the south. At the same time, the Army V Corps struck out towards Baghdad, staying to the west of the Euphrates River. On the right, the Marine Corps' 1st MEF set its own course for the capital, staying roughly parallel to the V Corps advance. At Nasiriyah, they met their first serious resistance. Marines of the 1st MEF were now swinging in from the east to link up with V Corps' advance. Regular Iraqi army units seemed to vanish as the coalition advanced. Low numbers of Iraqi prisoners indicated that the regular army units were avoiding the fight. In Kuwait in 1991, they were trapped by coalition forces and had to surrender. This time, regular Iraqi forces "have just melted away," reported CENTCOM's Deputy Commander, Army Lt. Gen. John Abizaid.⁷¹

At Nasiriyah, surprisingly strong resistance came from Iraqi irregulars within the city. These forces couldn't mass to defend the position, but they could take a toll on coalition troops. One group offered a white flag of surrender, and then opened up with artillery fire. Twelve Marines were killed in Nasiriyah on the fourth day of the war. Special Republican Guard forces had "infiltrated forward" to conduct these types of raids, Abizaid said.⁷² Most of the resistance appeared to be coming from Saddam's special security organization and the Saddam Fedayeen.

At land component headquarters, Leaf sensed that "significant pieces" of the two southern-based Republican

Guard divisions—the Baghdad and the Medina—were engaged at Nasiriyah.⁷³ The V Corps Commander, Lt. Gen. William Wallace, later spoke of his surprise at the Iraqi tactics. "He [the enemy] was willing to attack out of those towns toward our formations, when my expectation was that they would be defending those towns and not be as aggressive," said Wallace.⁷⁴

Baghdad was still 250 miles away. It was there that coalition land forces expected to encounter the main body of the Republican Guard divisions.

The Republican Guard

If any Iraqi forces could pull off a strong counterattack, it seemed likely to be the Republican Guard divisions, Iraq's best forces. The Republican Guard had been the elite of the Iraqi military since they helped turn the tide of the Iran-Iraq war in 1988. Two years later, Republican Guard forces spearheaded the Aug. 2, 1990 invasion of Kuwait. In that war, the Hammurabi and Nebuchadnezzar divisions attacked Kuwait from the north. The Medina division struck from the west. After Kuwait fell, regular Iraqi army divisions stocked with conscript troops moved forward to the Saudi border, while the Republican Guard forces pulled back to consolidate a strategic line of defense along Iraq's southern border with Kuwait.

The 1991 Gulf war proved that the Republican Guard were trained to initiate defensive maneuvers and put up a fight. As coalition ground forces attacked, brigade-size forces of the

Republican Guard were soundly defeated in encounters such as the Battle of Medina Ridge. However, these short, sharp engagements also served as delaying actions to screen the retreat of a good chunk of the main body. Much of the Medina and Hammurabi made it back to Iraq, along with other Guard divisions.⁷⁵ Throughout the 1990s, Saddam used the Republican Guard to put down uprisings and protect his rule.

A decade later, the Republican Guard divisions had not recovered their former prowess, but they remained a substantial military force. A 1998 report by US military analyst Anthony Cordesman credited the Republican Guard with having as many as 600 Soviet-made T-72 tanks and 300 Soviet-made T-62s, for a total of about 900 top-of-the-line tanks.⁷⁶ Other Soviet-export equipment such as T-55 tanks remained on Iraq's table of equipment, too. Air strikes in Operation Desert Fox in December 1998 targeted some Republican Guard caches of equipment and may have killed some of its personnel. However, there was no question that Republican Guard forces remained cohesive and comparatively well-equipped.

"They didn't have the forces they had before," said Air Force Col. Charles Westenhoff, chief of USAF's Checkmate operational assessment office, "but still, in early 2003, the Republican Guards themselves had more than twice as many tanks as coalition forces and probably about twice as many artillery pieces ... in the theater."⁷⁷

Now, the Republican Guard divisions were moving from garrison to positions outside Baghdad. They deployed to several different locations. Intelligence in early March 2003 showed one division in the north, near Mosul, and another division near Kirkuk. Two more divisions were deployed to the north of Baghdad with a fifth division positioned to the southwest, between Karbala and Hilla. The sixth division was southeast of Baghdad.

Land component forces thought that they most likely would not encounter

the main defensive lines of the Republican Guard until they were near the outskirts of Baghdad. However, coalition airmen began their confrontation with Republican Guard long before that time. "The targeting priority for air attack in direct support of the land component was the Republican Guard," Leaf said.⁷⁸ As Abizaid noted, "It was focused initially on the Medina division. Suffice it to say, we are applying significant pressure on them from the air as our ground troops continue to close with them."⁷⁹

A Rough Patch

Just as the coalition was ramping up its attacks on Republican Guard forces, the coordination of the land and air components hit a rough patch. On March 23-24, lead elements of V Corps pressed on toward the city of Najaf, approximately 100 miles northwest of Nasiriyah and some 100 miles due south of Baghdad. The V Corps Commander, Wallace, opted to send AH-64 Apache attack helicopters against the Republican Guard. For the Apaches to attack, the land component had to move the fire support coordination line (FSCL) forward in that sector to cover Republican Guard forces positioned about 50 miles from Baghdad. (The FSCL is a line of demarcation inside of which air forces could not drop weapons except under tightest constraints, but the Army could use its own firepower.) "As the rate of initial advance of the V Corps elements was great," Leaf said, "they recommended, and the JTCCB [Joint Targeting Coordination Board] approved, a fairly long placement of the FSCL" in V Corps' sector.⁸⁰

The ground forces got their wish, and the Apaches went on the attack. Unfortunately, they ran into heavy fire from the Republican Guard and others in the area. An Iraqi general in Najaf placed a cell-phone call to warn his forces that the Apaches were on their way. "As our attack aviation approached the attack positions, they came under intense enemy fire," Wallace later said. The defenders shot down one Apache (its

75. Rebecca Grant, "The Great Escape," *Air Force Magazine*, March 2003.

76. Anthony Cordesman, "Key Targets in Iraq," CSIS Paper, February 1998.

77. Col. Charles Westenhoff, Chief of USAF's Checkmate operational assessment office, interview, May 29, 2003.

78. Leaf interview, June 27, 2003.

79. Abizaid, CENTCOM news briefing, March 23, 2003.

80. Leaf interview, June 27, 2003.

Sandstorm. When a heavy sandstorm hit, key airborne and space-based sensors kept working, and fighters and bombers were not affected. Moseley, far from waiting out the storm, ordered a dramatic escalation in air attacks on the Republican Guard.



USAF photo by MSgt. Terry L. Blevins

81. Wallace, DOD news briefing, May 7, 2003.

82. Rowan Scarborough, "General Tells How Cell Phone Foiled US Attack in Iraq," *Washington Times*, May 8, 2003.

83. Rick Atkinson, et al, "Confused Start, Swift Conclusion," *Washington Post*, April 13, 2003.

84. USCENTAF, By the Numbers.

85. Leaf interview, June 27, 2003.

86. Leaf interview, June 27, 2003.

87. Leaf interview, June 27, 2003.

88. Leaf interview, June 27, 2003.

89. Maj. Gen. Victor E. Renuart Jr., CENTCOM director of operations, news briefing, March 25, 2003.

crew members were rescued) and damaged another 30 or so. Wallace summed up, "The attack of the 11th Aviation on the Medina Division did not meet the objectives that I had set for that attack."⁸¹ The Apaches were so thoroughly ventilated that they had to break off and return to base without really attacking the Guard units.⁸² Indeed, the Apache unit afterward was not considered battle-worthy. The significance of this, according to a *Washington Post* report, was that "the Army's premier deep-attack weapon appeared to be neutered."⁸³

What foiled the Apache attack was only too apparent. As degraded as its air defenses were, Iraq still had plenty of anti-aircraft artillery, short-range SAMs, and troops ready to fire wildly but continuously into the air. Coalition airmen reported that, by the end of the war, they had faced more than 1,400 AAA attacks and 1,600 SAM attacks, plus constant automatic weapon fire.⁸⁴ It was a lethal environment for the slow, low-flying Apaches, moving far ahead of infantry columns instead of operating on their flanks, as is customary.

Leaf said of the attack: "We—the entire coalition team—had not hit our stride in achieving the command and control required to operate in volume effectively inside the fire support coordination line."⁸⁵

He went on to say that, from an airmen's perspective, "the most significant thing" about the setting of the FSCL was the command and control burden it placed on the coalition. With friendly forces—the Apaches—ranging far out in

front of the land forces, the strikes of fixed-wing aircraft had to be regulated by forward air controllers.⁸⁶ If, say, an E-8 Joint STARS aircraft spotted a column of enemy vehicles inside the FSCL, it could not just pass along the coordinates to the fast movers overhead. The FAC had to get to the scene and control the engagement, all of which took precious time. And the process is even more cumbersome at night.

Thus, the use of the attack helicopters reduced the volume of heavy air strikes on the targets arrayed in front of the coalition divisions. That decision, Leaf concluded, "cost us basically a full night of fixed target strikes inside the FSCL." He added, "We worked through that."⁸⁷ The V Corps leadership became somewhat more realistic about setting the FSCL. Also, the air and land components got better at using the "killboxes" to launch attacks on enemy forces on both sides of the line.⁸⁸

The Sandstorm

One day after the abortive Apache operation, a heavy sandstorm rolled into the area, blinding all but the most sophisticated and advanced radar sensors. This forced the coalition to rely on a few key airborne sensors and a number of satellites to keep track of the Republican Guard and enable friendly forces to press on with the attack. By March 25, the sandstorm was howling across Iraq. Maj. Gen. Victor E. Renuart Jr., CENTCOM's director of operations, summed up the situation: "It's a little bit ugly out there today."⁸⁹

Blowing sand did not hamper the

fighters and bombers airborne over Iraq. However, the particulate matter of sand and dust—just like clouds and fog—degraded infrared sensors such as those used to direct laser-guided bombs. It also played havoc with optical and infrared reconnaissance. Fortunately, the sandstorms had no effect on synthetic aperture radar, which could “see” right through the enveloping muck. The E-8 Joint STARS and high-flying Global Hawk autonomous UAV kept a close watch on the Republican Guard forces. So did radar-imaging satellites in space.

After the onset of the sandstorm, land component forces were forced to wait for a week before they could resume their advance. This period became the decisive point of the war, and it was the hour for airpower. Renuart noted that, “while we may not have helicopter pressure or ground pressure at a particular point on the battlefield,” coalition air forces and special operations forces kept up the pressure.⁹⁰ That week saw the deadly combination of aerospace sensors and aerospace striking power come close to obliterating Saddam’s premier ground forces.

Far from waiting out the sandstorm, Moseley ordered a dramatic escalation in attacks on Iraq’s fielded forces. “We’re killing the Republican Guard,” Moseley reportedly told other CAOC officers at the close of his morning briefing, “But I want you to kill them faster.”⁹¹

Coalition planners were receiving a virtually uninterrupted stream of data from Joint STARS and Global Hawk systems and from advanced satellites. They quickly saw that the large Republican Guard divisions were not fixed in place. Rather, small units moved around piecemeal, and elements of the Baghdad, Hammurabi, Nebuchadnezzar, and Medina divisions were flowing south toward the battle line. According to Leaf, the maneuver appeared to be based on a principle of “just kind of a flow south.” In Leaf’s opinion, the Republican Guard had little control at the strategic or operational levels. Iraqi

planning came down to telling small units, “If you are defending Baghdad, you head south.”⁹²

All along, though, the air component had the Republican Guard forces in their gun sights, and the Iraqis were walking right into a meat grinder. “If the Iraqis moved in a coherent formation, they were immediately detected and targeted,” said Air Force Maj. Jon Prindle, a senior Joint STARS director.⁹³ “Most of them got destroyed,” he added. Air Force Chief of Staff Jumper recalled, “We were watching these guys ... coming out of Baghdad, trying to reinforce the Medina Division, and the B-1s and the B-52s were up there pounding the heck out of them.”⁹⁴

According to Leaf, Republican Guard units near Najaf evidently believed that the sandstorm somehow shielded them from detection, and, instead of dispersing, they concentrated their forces. It was a bad move; the Guard crammed so many T-72 tanks into a small area that four precision-guided bombs destroyed 30 of them at a blow, Leaf said.⁹⁵

Elsewhere, the encounters were considerably closer. Southeast of Najaf, coalition soldiers tangled with Iraqi forces making a flank attack. One heavily engaged US Army unit had its forces stretched out in a thin line, said Leaf, and the weather was terrible. The fighting became so close, said Leaf, that Iraqi soldiers were hit by ricochets from their own rocket-propelled grenades.⁹⁶ US troops were dismounting to take up enemy AK-47 assault rifles so they could shoot back at nearby attackers.⁹⁷ The Iraqis damaged several coalition vehicles.⁹⁸

Airpower roared into this close fight. Air Force SSgt. Mike Shropshire, an enlisted terminal attack controller (ETAC) moving with the 7th Cavalry, called for help. Soon, a B-1B dropped a load of JDAMs on the Iraqis. Later, Joint STARS sensors picked up indications that an Iraqi column was moving down the road to reinforce Iraqi units at Najaf. This time, an orbiting B-52 got the call and unleashed JDAMs, cluster bombs, and Mk 117 bombs on the

90. Renuart, CENTCOM news briefing, March 25, 2003.

91. Bradley Graham and Vernon Loeb, “An Air War Of Might, Coordination And Risks,” *Washington Post*, April 27, 2003.

92. Leaf interview, June 27, 2003.

93. Graham and Loeb, April 27, 2003.

94. Jumper, “Leveraging Lessons Learned with Tactical Operations,” remarks to National Security Forum, Maxwell AFB, Ala., May 27, 2003.

95. Bradley Graham and Vernon Loeb, “An Air War Of Might, Coordination And Risks,” *Washington Post*, April 27, 2003.

96. Leaf interview, June 27, 2003.

97. Leaf interview, June 27, 2003.

98. Brig. Gen. Vincent Brooks, CENTCOM deputy chief of operations, news briefing, March 26, 2003.

Iraqis. A contingent of 150 Iraqi soldiers hit by the B-52 swiftly surrendered, said Leaf.⁹⁹

The event was recounted by CENTCOM's deputy chief of operations, Brig. Gen. Vincent Brooks, at a press briefing in Qatar. "That attack was seriously repulsed with significant damage to the attacking Iraqi forces," Brooks said.¹⁰⁰

Mobility

A truly strategic use of airpower came from mobility forces. Active, Guard and Reserve airmen joined forces to support a rapid global set-up for the campaign and keep it functioning.

Once again, early preparations paid off. Airlift put "people and supplies in place so the president could act when he wanted to, without going through a mobilization effort," said Roche.¹⁰¹ With the Coalition members shifting right up until the last moment, it was up to the Air Force's mobility troops to move cargo, weapons, and personnel to sustain the fight. "You just do your mission," said C-130 pilot Maj. Dan Keneflick of the Minnesota Air National Guard's 133rd Airlift Wing.¹⁰² "You realize you're a very small piece in a very huge puzzle."

In purely numerical terms, air mobility dominated the campaign. "We

hauled and we hauled good," said Roche.¹⁰³ Tankers and airlifters accounted for 56 percent of the Air Force's 24,196 sorties flown from March 19 through April 18, 2003.¹⁰⁴ All told, the Air Force flew 7,413 airlift sorties for Operation Iraqi Freedom. That included globe-spanning airlift missions controlled by the Tanker and Airlift Control Center at Scott AFB, Ill., plus in-theater missions, flown mainly by C-130s. When the need arose, the 332nd Air Expeditionary Wing even set up a "Red Tail Express" by leasing trucks to drive supplies to newly opened expeditionary airfields. Coalition ally Australia also contributed 263 airlift sorties during OIF.

One of the most remarkable feats was the quick funneling of airlifters into newly captured airfields. At Bashur, in northern Iraq, members of the 86th Contingency Response Group from Ramstein AB, Germany, parachuted in with the Army airborne troops who took the field on March 26. Their mission: get the airfield up and running as soon as possible. "There was no other way to get Air Force boots and eyes on the ground to assess the situation and prepare to receive aircraft, said Maj. Erik Rundquist, security forces commander for the group.¹⁰⁵ Soon, "heavies" were landing day and night—and

99. Leaf interview, June 27, 2003.

100. Brooks, CENTCOM news briefing, March 26, 2003.

101. MSgt Chuck Roberts, "C-130 Crews Keep the Supplies Coming," Air Force News Service, April 16, 2003.

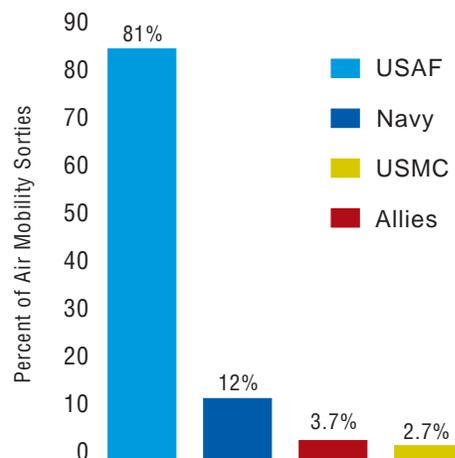
102. MSgt Chuck Roberts, "C-130 Crews Keep the Supplies Coming," AFNS, April 16, 2003.

103. Air Force Secretary James G. Roche, interview.

104. USCENTAF, By the Numbers.

105. Louis A. Arana-Barradas, "Bashur or Bust," *Airman Magazine*, July 2003.

Air Mobility Sorties



	Tanker	Airlift	Total	Percent
USAF	6,193	7,413	13,606	81.3%
Navy	2,058	0	2,058	12.3%
USMC	454	0	454	2.7%
Army	0	0	0	0
Allies	359	263	622	3.7%
Total	9,064	7,676	16,740	



Heavy Lift. USAF C-17s queue up and await their loads. The Air Force's fleet of strategic and tactical airlifters played a key role in the buildup for Gulf War II, and also kept it on track with swift and reliable resupply of ground forces.

keeping engines running during unloading in case they had to make a quick getaway.

Keeping the airlifters, ISR aircraft, and strike aircraft airborne were the tankers. "Not a single bomb gets dropped, not a single air-to-air engagement happens, or missile is fired unless tankers make it happen," said Col. Cathy Clothier, 401st Air Expeditionary Operations Group commander.¹⁰⁶

US Air Force tankers racked up 6,193 sorties during the main phase of Operation Iraqi Freedom. The pace of operations kept tanker crews busy. KC-135 pilot Capt. Richard Peterson at the 321st Air Expeditionary Wing described OIF as a nonstop series of "fly, crew rest, and time to go again."¹⁰⁷

Space

Space forces enhanced every aspect of OIF. While the 1991 Gulf war was rightly heralded as the first "space" war, the next 12 years saw explosive growth in the ability to make the most of the advantages provided by USAF space systems. "We are so dominant in space that I pity a country that would come up against us," said Maj. Gen. Franklin J. Blaisdell, USAF's Director of Space Operations and Integration, a few days before the war began.¹⁰⁸

Space and air forces were more closely integrated than ever before, with CFACC Moseley also designated the space coordination authority. That put him in charge of a substantial chunk of space assets during the campaign. Moseley's "quiver" for air and space included "in excess of 50 satel-

lites" that "have been just unbelievably capable." Defense Support Program satellites monitored infrared flashes to provide early warning of Iraqi missile attacks. Communications, weather and navigation were also space-based functions. Communications satellites "played a big role enabling joint communications and the transfer of targeting information to air, land and sea forces," said Blaisdell after the war.¹⁰⁹

GPS satellites formed the web of precision that enabled 5,500 GPS-guided JDAMs to find and hit their targets.

On the ground, the availability of GPS helped increase the speed of response and accuracy for close air support. Space forces supported "conventional surface forces, the naval forces, special operations forces" as well as air forces, Moseley attested.¹¹⁰

Naval Aviation

In Operation Iraqi Freedom, Navy and Marine aviators once again played a major role. Their contributions were notable first for the way sea-based airpower blended seamlessly with land-based airpower and, second, because both the Navy and Marines flexed new operational concepts that enhanced their effectiveness in the joint force.

For the Navy, concentration was the key. Five aircraft carriers contributed their striking power in the form of F/A-18s, new F/A-18E/Fs, and F-14s. On top of this, the air wings provided E-2 sentries, EA-6B jammers, versatile S-3s, and multi-purpose helicopters. Land-

106. MSgt. Chuck Roberts, "Operation Iraqi Freedom," *Airman Magazine*, May 2003.

107. MSgt. Chuck Roberts, "Operation Iraqi Freedom," *Airman Magazine*, May 2003.

108. Robert S. Dudney, "Space Power in the Gulf," *Air Force Magazine*, June 2003.

109. SSgt. A.J. Bosker, "Space is ultimate high ground," *Air Force News Service*, May 27, 2003.

110. Moseley, DOD news briefing, April 5, 2003.

111. Keating, "This Was a Different War," US Naval Institute *Proceedings* interview, June 2003.

112. USCENAF, *By the Numbers*.

113. Chief Journalist Aaron Strickland, "TR Planes Pound Northern Iraq," *Navy Newsstand*, April 1, 2003.

114. Keating, DOD news briefing, April 12, 2003.

115. USCENAF, *By the Numbers*.

based P-3s with highly sophisticated sensors joined in the ISR coterie. "All five carrier groups sustained a very high tempo of operations without a single day off for maintenance from the 20 days leading up to the war and the 25 days of the war—about a 45-day stretch at a high tempo," said Keating.¹¹¹

Moseley also brokered a deal to have all Marine aviation—from lift to fighters—on the ATO and thus under CFAACC control for the first time. The CAOC then pumped Marine air, along with other assets, out to Marine units for close air support. Marine Corps fighters—many serving in squadrons embedded in Navy carrier air wings—ultimately flew 3,794 sorties while Navy fighters logged 5,568 sorties.¹¹²

As with Afghanistan, the Navy and Marine fighters fit right in. All carried laser-guided bombs and JDAM, so that all joint aircraft in the CAS stack or on deep interdiction missions delivered the same effect. Strike pilots from Carrier Air Wing 8, embarked on the USS *Theodore Roosevelt*, joined in the wave of attacks on Iraqi ground forces in late March. "Lots of our targets were artillery and (other sites) to impede Iraqi ground force progress," said Cmdr. Sean Clark, an F/A-18C pilot with VFA-201. "We have a lot more ground forces to support with our strikes."¹¹³

Network of Airpower

Every weapon of the air component rained down upon the Iraqis. Moseley explained that coalition air crews were fighting several different battles simul-

taneously. In the south, the air component was staging a precision onslaught to debilitate the Republican Guard and support V Corp and 1st MEF. In the west, air crews conducted an intense Scud hunt and strategic attacks against vital targets of many varieties. In the north, the air component carried out strikes in support of SOF units and later a small contingent of conventional forces, which arrived by airdrop. Each fight was intimately related to the larger campaign, said the air boss, but each had its own distinctive character.

Compared to earlier American air operations, Gulf War II had to be—and was—far more sophisticated, its forces heavily networked and focused.

The most obvious characteristic of the war was the tremendous precision of coalition targeting and attack. It marked a dramatic advance over Gulf War I a dozen years earlier. One witness to the change was Keating, commanding the Navy's carrier-based striking forces in the Gulf. He recalled, "I was flying off the USS *Saratoga* in the Red Sea for the first Gulf War in 1991, and every piece of ordnance I delivered was ... a 'dumb' bomb."¹¹⁴ In 2003, 68 percent of the attacks—Air Force, Navy, Marine, allied—used precision guided munitions, according to CENTCOM.¹¹⁵ Such weapons were available anywhere across the battlespace.

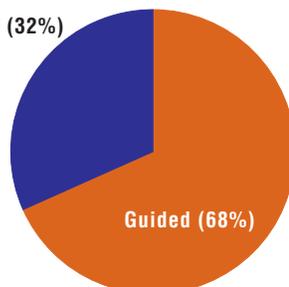
Plenty of aircraft were in place. In public, many skittish Gulf states chose to keep quiet about their willingness to provide the coalition access to bases. However, when time came for action,

Coalition aircraft dropped on Iraq a total of 29,199 bombs, rockets, and missiles of all varieties.

Gulf War II featured heavy use of guided weapons, or those directed to the target by laser beams, satellite signal, or TV image matching. Two-thirds of the expended munitions—19,948—were of the precision type.

Munitions Expended

Unguided (32%)



Guided (68%)

Guided	19,948
Unguided	9,251
Total	29,199



Unmanned. The intelligence “take” from UAVs such as Predator and Global Hawk was monitored by intelligence experts and others at US bases. Here, a crew at Tallil AB, Iraq, moves a Predator into position.

permission was granted by Qatar, Kuwait, Bahrain, the United Arab Emirates, and other states in the region. The Air Force opened up a total of 36 new, bare-bones “expeditionary bases” in the area.¹¹⁶ With such good access, US Air Force fighters, bombers, and attack aircraft dropped about two thirds of total munition tonnage in the air war.¹¹⁷

No one is claiming that this air war achieved perfection. In fact, a problem arose in a predictable area: allocation of tanker assets. Early in the campaign, Turkey denied the coalition the use of its air bases, including for aerial refueling operations. This led to a shortage of tanker coverage for some strike packages. This was seen most clearly in US Sixth Fleet’s naval air operations in the Mediterranean. Several flights of Navy strikes had to break off in the middle of missions, turn back, jettison bombs, and go back to their carriers. Predictably, Navy complaints quickly hit the press. Keating, however, greeted the problem with equanimity. “It didn’t affect the overall campaign,” he said. Indeed, he went on, the air component could “move gas around tactically and operationally, ... and then make some accommodations in the air tasking order.”¹¹⁸ The tankers were the backbone of the operation, and Moseley soon pushed them further north, into orbits inside Iraq, to move the fuel closer to the strikers.

The air component needed every bit of this new efficiency to prosecute the war. Iraqi forces had always been scattered, but now they were more

fanned-out than ever. Heavy Iraqi forces moved their tanks and fighting vehicles and artillery away from the Army’s avenues of approach, noted Maj. Gen. David H. Petraeus, the commander of the 101st Airborne Division.¹¹⁹ This dispersal made it hard to find concentrations of artillery and armor.

And yet they were found, with regularity and with devastating effect. Take, for example, the case of an attack on a Republican Guard surface-to-surface missile unit north of Baghdad.¹²⁰ The unit was hiding under a thick canopy of trees, late at night, and a sandstorm was blowing. In short, the soldiers thought they were safe. That is when they were hit by two massive bombs and a load of cluster munitions, an attack that killed six troops and chewed up much of the unit’s equipment. After the war, the *Washington Post*’s William Branigin heard some of the gory details from Capt. Omar Khalidi, 28, an Iraqi officer. “We were surprised when [the US pilots] discovered this place,” recalled Khalidi. “[The attack] affected the morale of the soldiers, because they were hiding and thought nobody could find them. Some soldiers left their positions and ran away. When the big bombs hit their target, some of the vehicles just melted, and the effect of the cluster bombs was even greater, because they covered a larger area.”¹²¹

Responsive ISR combined with rapid re-targeting made coalition air strikes much more effective than would otherwise have been the case. Global Hawk and other platforms were used to

116. Jumper, remarks to National Security Forum, May 27, 2003.

117. Tamar A. Mehuron, “The Chart Page: Gulf War II Air Campaign,” *Air Force Magazine*, May 2003.

118. Keating, DOD news briefing, April 12, 2003.

119. Maj. Gen. David H. Petraeus, Commander, 101st Airborne Division, DOD news briefing, May 13, 2003.

120. William Branigin, “A Brief, Bitter War for Iraq’s Military Officers,” *Washington Post*, April 27, 2003.

121. Branigin, “A Brief, Bitter War for Iraq’s Military Officers,” *Washington Post*, April 27, 2003.

122. Maj. Bill Cahill, USAF Global Hawk liaison officer, interview, May 30, 2003.

123. Lt. Gen. Ronald E. Keys, USAF Deputy Chief of Staff for Air and Space Operations, interview, July 7, 2003.

124. Amy Butler, "Datalinks a Solid Weapon Against Scuds, Friendly Fire, Jumper Says," *Inside the Air Force*, April 11, 2003.

re-check specific target aim points prior to a strike. For example, Global Hawk roamed over areas where mission planners believed the UAV would spot major concentrations of Republican Guard forces. Global Hawk then fed either wide-area or smaller "spot" images to analysts at Beale AFB, Calif., for rapid processing. Experts (resident in the Nevada Air National Guard) quickly interpreted the data and instantly sent it forward to the in-theater CAOC via e-mail or picture transfer. At the CAOC, Global Hawk liaison officers such as Maj. Bill Cahill passed the information on to the operations floor where it was forwarded to airborne strike aircraft.¹²²

Whenever ISR platforms reeled in hot intelligence, strike aircraft could attack new targets. Most fighters and bombers in OIF had some type of data link. The specific technologies varied.

Link 16—the Joint Tactical Information Display System (JTIDS)—was the gold standard. The Navy had incorporated its own links in its strike fighters. Bombers had platform-unique systems. Air National Guard aircraft equipped links also could take on real-time data. "Smart" tankers had a communications package that allowed them to pass on time-critical information to strike

aircraft taking on fuel. The effect of datalinks was enormous.

Lt. Gen. Ronald E. Keys, USAF deputy chief of staff for air and space operations, reported that they created a series of "neighborhood networks."¹²³ It wasn't a perfect, integrated network, he said, but it was a step forward in communication and it changed the tactics of air warfare. Near-impossible tasks such as Scud-hunting got a complete overhaul and became workable. Jumper noted, "You'd be surprised how many people think that the way you find Scuds is to send lots of airplanes out there and look." The better way, he contended, was to "get your sensors that can find moving things, identify them quickly, and have your shooters set up so that they can respond quickly once identification is made."¹²⁴

Networked sensors cued each other. A Joint STARS aircraft track of moving vehicles might be passed to Global Hawk for imagery collection. In turn, Global Hawk's high-altitude and wide area surveillance equipment might identify an area of interest, then cue operators to move Predator in for tight-focus video.

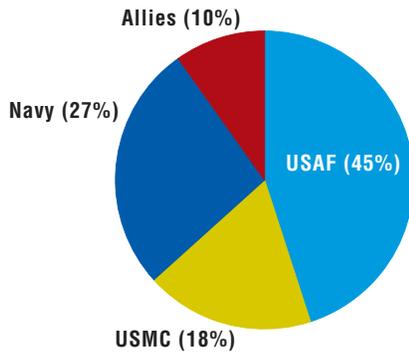
At the heart of the network lay the CAOC. It was "fed" its data through massive T-1 lines. A T-1 line is a high-

Space. Space power acted as a critical force multiplier for coalition forces. Here, SrA. Neyibe Ramos, 2nd Space Operations Squadron, runs through a checklist of GPS satellite operations while on duty at Schriever AFB, Colo.



USAF photo by A1C Mike Mearns

Strike Sorties



	Fighter	Bomber	Total	Percent
USAF	8,828	505	9,333	45.0%
Navy	5,568	0	5,568	26.9%
USMC	3,794	0	3,794	18.3%
Army	0	0	0	0
Allies	2,038	0	2,038	9.8%
Total	20,228	505	20,733	

capacity, fiber-optic cable capable of carrying more than 1.5 billion bits of data per second.¹²⁵ The CAOC was linked to the outside world through more than 100 of these enormous data pipes. They provided the channels needed to effect fast and reliable flow of text messages and digitized information. Commanders therefore had a constant, real-time picture of aircraft locations, which allowed them to redirect strikers and support aircraft as needed. The information architecture also made it possible to handle the digital “take” from ISR platforms or strike aircraft and pursue new targets in near-real time.

None of this would have mattered unless the people manning the CAOC knew what to do with fresh information. The Air Force pulled off a combat culture change that took joint and coalition air war to a new level of power and competence. This change registered on the CAOC floor—not in the wizardry of the computer consoles but rather in the skill of the warriors assigned there.

The new style of combat stemmed from the Air Force’s deliberate effort over recent years to squeeze much more capability from the existing technologies by changing how operations and intelligence specialists interact in combat operations. In four years—between the end of Operation Allied Force in 1999 the start of OIF in 2003, airmen learned to handle larger

numbers of time-sensitive and dynamic targets. The biggest change could be seen in the way that CAOC officers approached the task. What had once been a slow and methodical process crackled with the urgency.

“ISR ... was just a microcosm of this change that was going on, big-picture, within the Air Force in how we target stuff,” said Cahill, the Global Hawk liaison officer. He called it part of “a revolution of how you employ air-power.”¹²⁶

The impact of this CAOC culture change was felt most powerfully by members of the Republican Guard. On one occasion, Global Hawk imagery reconfirmed the locations of Medina division targets. The CAOC then directed a B-2 that was already airborne to switch some of its JDAM targets to new strike coordinates. Having done so, it released its weapons, which were guided home by signals emanating from the Global Positioning System satellite constellation. The practice of spreading up-to-the-minute ISR data to strikers also played a big role in Suppression of Enemy Air Defenses (SEAD) operations—particularly as the air war came to focus on killing Iraq’s integrated air defense system around Tikrit, Saddam’s home town and center of his political support.

Multiple Fights

The combination of precision, data links, and continuously-available ISR

125. “How Does a T-1 Line Work?,” www.howstuffworks.com.

126. Cahill, interview, May 30, 2003.

Hercules. At a forward deployed base, SrA. Dan Briscoe, a member of a tactical airlift control element, marshals a C-130 into a parking space. Air Force tactical airlifters were in heavy use, supplying fast-moving forces across Iraq.



USAF photo by SSgt. Quimton T. Burris

127. Moseley, DOD news briefing, April 5, 2003.

128. Elaine Grossman, "Coalition Control over Western Iraq may have been news to regime," *Inside the Army*, March 31, 2003.

129. Franks, CENTCOM news briefing, March 22, 2003.

130. Grossman, *Inside the Army*, March 31, 2003.

updates made airpower more responsive than it ever had been. That was the case whether the task was hitting a leadership target or putting bombs where a ground controller needed them.

It also allowed Moseley to phase different types of operations within each separate fight. The "south fight" being conducted by the V Corps and 1st MEF, the air boss said, followed a course of "strategic attack, to interdiction, to close air support, to re-supply."¹²⁷ The "north fight" unfolded after March 26, when a flight of 15 Air Force C-17 transports air-dropped 1,000 members of the Army's 173rd Airborne Brigade into northern Iraq to capture and open an airfield near Bashur. The "west fight" in the huge desert expanse of western Iraq had been underway since Night 1.

Western Iraq was particular sensitive, because it was the arena for possible Scud missile launches. In Gulf War I, Iraq's forces had used the western sites to mount Scud attacks on Israel and Saudi Arabia. Iraq had "hide sites" for Scud missiles, said one military official. At certain military facilities, one could see lines painted on roadways and other surfaces to simplify the alignment of a missile transporter for launch.¹²⁸ Before the start of the war, Franks himself had said, "We do know that more than two dozen Scud missile launchers remain unaccounted for since the days of the Gulf war."¹²⁹

In coalition planning, the task of preventing Scud attacks was given to the air component and special operations forces. These forces got to work

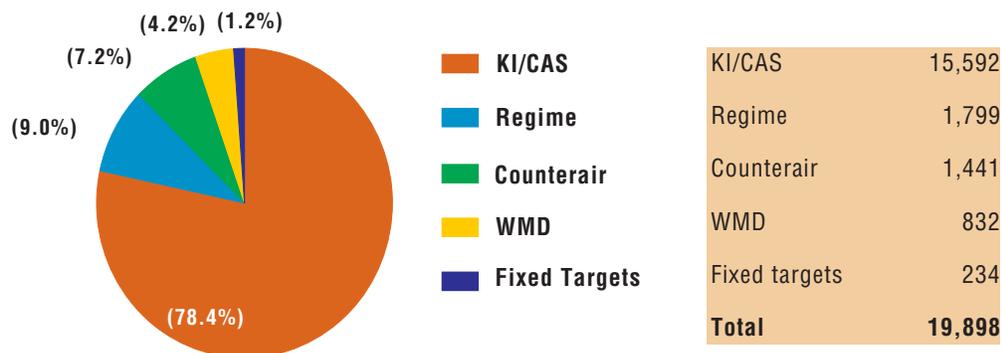
right away. "If you control the major installations and major lines of communication, you basically control western Iraq," said an officer.¹³⁰ Only a few days after war commenced, he was able to state, "We've extended that control over a significant portion of Iraq."

For this "western fight," the air component teamed with SOF forces much as it had in Afghanistan in 2001. Special Operations Forces from the US, Britain, and Australia again employed tactics honed in Afghanistan, where highly trained air controllers traveling with SOF forces pinpointed locations for air strikes. These same combined teams were at work in Iraq, actively hunting for weapons of mass destruction and ballistic missile systems. In the "north fight," SOF members assisted Kurdish Peshmerga forces.

Readily available airpower was a great asset for the SOF teams. However, making all of this work properly took an unprecedented level of coordination with the special operations component. Blue force tracking was a difficult problem. Though trained to infiltrate in secret and operate independently, the coalition SOF forces and CIA elements nonetheless had to be part of the air component's battlespace picture.

American forces shook hands over several unusual arrangements that helped to cement cooperation. For example, coalition air planners agreed to put a certain number of aircraft more or less "on call" for use by SOF. The highly specialized Task Force 20, doing its clandestine work around Baghdad, actually nominated some 1,800 targets

Strikes by Category



The air component devoted an overwhelming amount of its effort—some 78 percent—to support of ground forces. These were called “kill box interdiction/close air support,” or KI/CAS missions.

for strikes.¹³¹ The provision of dedicated airpower for SOF assets was a new but highly effective feature of the operation. As a result of this arrangement and others like it, SOF in high-threat areas had unusual ability to summon airpower on demand—for strikes or for rescue. When an isolated reconnaissance patrol got trapped behind enemy lines early in the fighting, USAF MH-53 “Jollys” pulled them out unscathed.¹³² Air Force Col. James Dobbins of the 392nd Air Expeditionary Group said air commanders “stacked the recon elements like cordwood to get them out.”¹³³

Building Blocks

Day after day, coalition aircraft flew hundreds of sorties against Republican Guard targets. This was having an impact, but it was not easy to measure. Assessing the effect got harder and harder as the attacks mixed, mangled, and pulverized these Guard formations.

Before the start of the war, each of the Guard divisions had received a combat-strength rating of at least 80 percent, with some divisions pegged at 90 percent.¹³⁴ As coalition aircraft struck tanks, artillery, and other vehicles, the losses in equipment began to mount. How much this had diminished the Iraqi combat capability was the crucial question as the land component—still engaged with pockets of Republican Guard around An Najaf—got ready to move forward on April 1.

CENTCOM briefers routinely showed gun camera video of blown-up Iraqi tanks. The number of tank kills was a prime building block for measuring progress first in each killbox and then, in larger areas on the land component’s route of advance. As Franks said on March 30, “I pay very close attention to ... the amount of force in aggregate in any particular piece of geography inside Iraq.”¹³⁵

The land component “wanted to ensure that specific units that were key to the Iraqi forces were properly prioritized [to be hit with heavy air strikes] and then were rendered ineffective or at least reduced in their effectiveness,” Leaf explained.¹³⁶ “That was pretty difficult to do in the fog and speed of war” and given the hodge-podge character of the Iraqi forces. Analysts struggled to match reports of air strike damage with the equipment of specific Republican Guard units.

To help the land component gain perspective, Leaf monitored mission reports from returning aircrews. As the mission reports filtered in 12 to 24 hours after a day’s strikes, Leaf and his staff would put together a Falcon View three-dimensional terrain map marking the locations of the most recent bomb hits. Leaf conceded that “it wasn’t full-blown BDA,” but the information was useful in meetings with McKiernan and his top staff members. As he put it: “When they’d say ‘Well what are you guys doing?’ I could say ‘This is where

131. USCENTAF, By the Numbers.

132. Col. James Dobbins, 392nd Air Expeditionary Group Commander, DOD news briefing from Tallil Forward Air Base, April 17, 2003.

133. Dobbins, DOD news briefing from Tallil, April 17, 2003.

134. Westenhoff, interview, June 26, 2003.

135. Franks, CENTCOM news briefing, March 30, 2003.

136. Leaf, interview, June 27, 2003.

137. Leaf, interview, June 27, 2003.

138. Brooks, CENTCOM news briefing, March 28, 2003.

139. Rick Atkinson, Peter Baker, and Thomas E. Ricks, "Confused Start, Swift Conclusion," *Washington Post*, April 13, 2003.

140. Franks, CENTCOM news briefing, March 30, 2003.

141. Lt. Gen. James Conway, Commander, 1st MEF, DOD news briefing from Iraq, May 30, 2003.

142. Jumper, remarks to National Security Forum, May 27, 2003.

143. Myers, DOD news briefing, April 1, 2003.

144. Brooks, CENTCOM news briefing, March 26, 2003.

145. Renuart, CENTCOM news briefing, April 2, 2003.

146. Renuart, CENTCOM news briefing, April 2, 2003.

147. Leaf, interview, June 27, 2003.

we've attacked targets, these are the kinds, these are the weapons we've used in those attacks, and when available, here are some of the comments from crews brought in from the misreps.'¹³⁷ Leaf's quick-turn operational picture helped give the land component an overview of where air strikes were doing the most damage to Iraqi forces.

Under the weight of the attacks, Republican Guard units were ceasing to exist or trying to stay alive by moving in mostly random ways. Brooks, the CENTCOM briefer, said on March 28, "What we see in many formations of the Republican Guard is some effort to try to reposition internally within their defenses."¹³⁸ He added that such maneuvers looked more like "survival tactics" than organized changes in defensive posture. "Right after the sandstorm ended," said one senior military officer, "we started getting indications that they were getting pounded."¹³⁹

The arrival of March 30 found coalition ground forces about 60 miles from Baghdad. Franks rejected the notion that his forces were now in a classic "operational pause," catching their breath before renewing the assault. True, the lead elements of the land component were taking on new supplies and consolidating their grip on cities they'd encircled, but the joint campaign as a whole was not on "pause." As Franks explained it, the fighting forces passed the ball so that "sometimes air, sometimes ground, sometimes special forces, sometimes a combination of two of the above, sometimes all three" were engaged.¹⁴⁰

Marine Lt. Gen. James Conway, the commander of the 1st MEF, agreed with this description of the situation. He was leading a supporting attack, converging on Baghdad by moving on the capital from the southeast and staying on the right of V Corps. There were times in which Conway held his forces in place, but it did not mean a cessation of combat. "While we were stationary, we were, in fact, attacking with our air," he said, "taking maximum advantage of

intelligence, surveillance, and reconnaissance capabilities to determine what the enemy was that we faced."¹⁴¹

Jumper said simply, "I'd like to ask the commander of the Medina Division when he thought the pause was."¹⁴²

To Baghdad

For the Saddam regime, Tuesday, April 1, marked the beginning of the end. Air strikes again targeted the presumed locations of the Republican Guard divisions and other units in the path of the coalition's advance. JCS Chairman Myers said the purpose of the attacks was not only to clear a path for the ground forces but also to prevent the Iraqi forces from fleeing into Baghdad, where digging them out could cause immense damage and bloodshed.¹⁴³ From the beginning, CENTCOM had made it clear that it was in no mood for get bogged down in a siege of the capital.¹⁴⁴ Plans called for a swift taking of Baghdad.

Late on the night of April 1, coalition land forces began their final, two-pronged attack toward Baghdad. The 3rd Infantry troops engaged the Medina and Nebuchadnezzar divisions enroute and, on April 2, they bypassed Karbala and continued north. On the right, the 1st MEF moved out from Kut toward Baghdad. Marines blew through the Baghdad Division and, after a brief delay caused by destruction of a bridge, crossed the Tigris River. "The Baghdad division has been destroyed," announced Renuart.¹⁴⁵

The coalition's prisoner count totaled only about 4,500.¹⁴⁶ Where had the self-styled defenders of Baghdad gone? All signs pointed to significant destruction of forces—and to mass desertions. Advancing land forces found "a tremendous amount of destroyed equipment and a significant number of enemy casualties as they moved toward Baghdad," Leaf noted.¹⁴⁷ However, they also found areas where there was a great deal more abandoned equipment than there were casualties.

After a week of air attacks, Leaf reported, "it became pretty clear to

them there wasn't much future in sticking with your T-72."¹⁴⁸

Iraq's defense simply crumbled. According to Brooks, CENTCOM officers knew Iraqi forces planned "to gradually pull back into Baghdad with forces and lines of force that we would encounter over time."¹⁴⁹ Some Republican Guard units had managed to carry out one phase of the plan by moving south, but now, their ability to mount organized resistance fell apart. Leaf said: "It appears to me that the air component made that movement to the time and place of Iraqi choosing impossible, and so the engagement came on our terms."¹⁵⁰

The much-anticipated tank battle between American armor and the Republican Guard simply never happened. "In some cases," Brooks said, "we bypassed those forces. In other cases we prevented their withdrawal. In other cases we destroyed them as they tried to reposition."¹⁵¹ Leaf also noted that airpower alone did not do all of the damage. "Clearly," he maintained, "there were times when the combined effect ... of the land component and the air component was absolutely devastating."¹⁵²

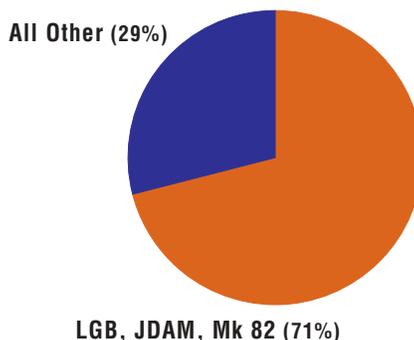
Nonetheless, the battlefield effect of airpower was only too apparent. As Moseley said on April 5, "As far as large fighting formations, we haven't seen any of that lately, because we've been attacking steady for about six or seven days now."¹⁵³ The land component saw the same thing. Leaf noted: "They weren't meeting organized unit-level resistance. They were hitting pockets."¹⁵⁴

Urban CAS Unveiled

With the climactic phase of the battle at hand, the coalition's air component implemented in Baghdad a new concept of operations for urban close air support.

In some ways, urban CAS relied on proven techniques. Moseley declared that CAS was a challenge "whether it's in the desert or whether it's in a city, because you're dealing with delivering weapons in the close proximity of

Most Popular Munitions



In heaviest use were the laser guided bomb, Joint Direct Attack Munition, and Mk 82 iron bomb. These three types accounted for 71 percent of all munitions expended. The rest was divided among 16 other types.

Munitions Use By Type

LGB	8,618	29.51%
GPS-JDAM	6,542	22.40%
Mk 82	5,504	18.85%
Mk 83	1,692	5.79%
M117	1,625	5.57%
Maverick	918	3.14%
GPS-WCMD	908	3.11%
TLAM	802	2.75%
Allied guided	679	2.33%
Hellfire	562	1.92%
HARM	408	1.40%
JSOW	253	0.87%
CBU-99	182	0.62%
CALCM	153	0.52%
Allied unguided	124	0.42%
CBU-87	118	0.40%
GPS-LGB	98	0.34%
Other guided	7	0.025%
Mk 84	6	0.021%
Total	29,199	

148. Leaf, interview, June 27, 2003.

149. Renuart, CENTCOM news briefing, April 2, 2003.

150. Leaf, interview, June 27, 2003.

151. Renuart, CENTCOM news briefing, April 2, 2003.

152. Leaf, interview, June 27, 2003.

153. Moseley, DOD news briefing, April 5, 2003.

154. Leaf, interview, June 27, 2003.

Warthog. A-10 attack aircraft had a field day against Iraqi forces, pulverizing enemy armor and suppressing ground mobility. Sometimes, the enemy scored, and some tough Warthogs returned to base thoroughly shot up but still ticking.



USAF photo by SSgt. Shane A. Cuomo

friendly troops.”¹⁵⁵ US exercises in recent years underlined what had already been shown in other experiences such as the Russian disaster in Grozny, capital of the rebellious province of Chechnya. It was there that urban combat could bring devastating casualties and demoralization. The US soldiers and Marines probing the defenses of Baghdad were better trained for urban fighting than anyone ever had been. That, plus innovative gear such as body armor and enhanced ISR, gave them a significant edge over their opponents. However, close air support would be an insurance policy against the day when some troops would fall into a trap.

Moseley explained how it would all work.¹⁵⁶ There “will be a 24-hour presence of forward air controllers, both on the ground and in the air, plus a 24-hour presence of a mix of aircraft and ordnance,” he said. Munitions options—from guns to Mavericks to 500-pound laser-guided bombs—would permit operators to select just the right weapon for the situation.

Moseley’s urban CAS plan had been in the works for more than a year. It was in part the handiwork of a Marine major at the CAOC. For the first time ever, all Marine airpower was placed under control of someone other than Marine commanders—in this case, Moseley. There was no holding back of assets for exclusive Marine Air/Ground Task Force use, as happened in Desert Storm. Marine aviators were acknowledged experts in close air support, and that experience helped the CAOC do its

work. The result, Moseley said, was “a wonderful, effective plan” in which the air component would provide airborne FACs over the Baghdad, around the clock, and would also provide multiple sets of fighters, with multiple munitions options, “stacked up” over the city 24 hours a day, ready to respond on a moment’s notice.¹⁵⁷

With the luxury of uncontested air superiority, the coalition placed strike sorties in pre-designated orbits so that CAS could be delivered, on demand, in any sector of Baghdad. Planners had diagrammed and catalogued every city block in Baghdad, creating a common reference system so that calls for air support could be processed in quick time. Moseley then kept “a mix of assets” from the Air Force, Marine Corps, Navy, Royal Air Force, and Royal Australian Air Force over top of the battle area. He didn’t mind that strike aircraft had to bring home bombs that weren’t needed in a particular sortie. “Now that appears wasteful, but that’s okay,” Moseley asserted. “What we’re looking for here is combat effectiveness, not necessarily combat efficiency.”¹⁵⁸

When the coalition opened up new forward bases at Tallil and elsewhere in Iraq, the intensity of the air attacks ratcheted up once more. A-10s flying from Tallil could stay aloft for an additional hour per sortie, said Dobbins.¹⁵⁹

Flying CAS sorties was no cakewalk. Air Force Capt. Kim Campbell, an A-10 pilot, came back to base in a Warthog so thoroughly shot up that its hydraulic systems had ceased functioning.¹⁶⁰ Maj.

155. Moseley, DOD news briefing, April 5, 2003.

156. Moseley, DOD news briefing, April 5, 2003.

157. Moseley, DOD news briefing, April 5, 2003.

158. Moseley, DOD news briefing, April 5, 2003.

159. Dobbins, DOD news briefing from Tallil Forward Air Base, April 17, 2003.

160. SSgt. Jason Haag, “Pilot Brings Battle-Damaged A-10 Home Safely,” ACC News Service, April 16, 2003.

Jim Ewald, another A-10 driver, was not so lucky. During an April 8 sortie over Baghdad, his aircraft was struck by a SAM. "I could see a reddish glow on my cockpit instruments [caused by] the fire behind me," Ewald said.¹⁶¹ He manhandled the Warthog away from Baghdad and ejected. US soldiers saw Ewald eject and rushed to find him. Hiding in a dry canal moments after he hit the ground, Ewald heard a youthful voice call to him: "Hey, pilot dude. Come out. We're Americans."

In Baghdad itself, the Iraqis set ablaze some 50 oil trenches, hoping to create enough smoke to obscure the aerial view of the city. However, it was a forlorn effort. Without the Republican Guard forces to hold up or even slow the coalition advance, Baghdad was open and vulnerable.

On Thursday, April 3, elements of the 3rd Infantry moved beyond Karbala to within 30 miles of Baghdad. The right pincer of the 1st MEF was about 60 miles south of city. It was just a matter of time before Iraq fell. Army Maj. Gen. Stanley A. McChrystal, the Joint Staff's vice director for operations, said at a DOD news briefing that the Republican Guard were "no longer credible forces."¹⁶² On April 4, soldiers started probing the environs of Saddam Inter-

national Airpower in Baghdad. Meeting only light resistance, they moved forward and seized it. By Sunday, April 6, it had become a center of C-130 transport operations.¹⁶³

In between those two days came a memorable event. On April 5, just before 9 a.m. (Baghdad time), elements of the 3rd Infantry made a "thunder run" into the center of Baghdad itself. The show of force resulted in at least 1,000 Iraqi military casualties¹⁶⁴ and demonstrated beyond doubt that Baghdad was done for. The idea for the raid came from work done before the war on how to conduct urban combat with armored formations. That, Wallace said, had "planted the seed for the idea of heavy armor in an urban raid-type configuration."¹⁶⁵ Earlier battles around Najaf had shown US planners the importance of using urban raids to thwart the Iraqi penchant for mounting unexpected attacks out of urban areas.

Two days after the thunder run, the 1st MEF was making its way through the eastern outskirts of Baghdad and V Corps was in position to close the pincer. Tanks moved out early that morning and were soon entering a downtown presidential palace.

The night of April 7 brought another remarkable airstrike. Lt. Col. Fred Swan,

161. Jim Garamone, "Pilot Describes Baghdad Crash," American Forces Press Service, July 17, 2003.

162. Maj. Gen. Stanley A. McChrystal, JCS Vice Director of Operations, DOD news briefing, April 3, 2003.

163. Association of the United States Army, Operation Iraqi Freedom Chronology, May 2003.

164. Patrick E. Tyler, "US Tanks Make Quick Strike Into Baghdad," *New York Times*, April 6, 2003.

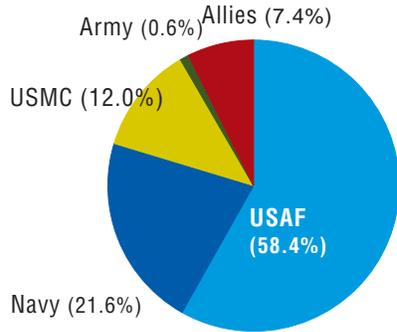
165. Wallace, DOD news briefing, May 7, 2003.

USAF photo by SSGT. Cherie A. Thurlby



Precision. Weapons loaders equip a B-1B bomber with a dozen 2,000-pound Joint Direct Attack Munitions and 1,000-pound "bunker buster" munitions. Two-thirds of all expended munitions were of the guided variety.

Total Air Sorties



Air Force aircraft turned in nearly 60 percent of the coalition's 41,404 sorties. USAF notably dominated the strike and mobility categories of sorties. Data does not include Special Operations Forces, Army helicopter, and coalition sovereignty flights.

	Fighter	Bomber	Tanker	Airlift	C2	ISR	Rescue	Other	Total
USAF	8,828	505	6,193	7,413	432	452	191	182	24,196
Navy	5,568	0	2,058	0	442	357	0	520	8,945
USMC	3,794	0	454	0	75	305	0	320	4,948
Army	0	0	0	0	0	269	0	0	269
Allies	2,038	0	359	263	112	273	0	1	3,046
Total	20,228	505	9,064	7,676	1,061	1,656	191	1,023	41,404

a B-1B crew member, was at his weapon systems station aft of the cockpit when the crew got the call to strike a specific downtown building. CENTCOM intelligence had “credible information” on a “regime leadership meeting” taking place.¹⁶⁶ The B-1 was orbiting with weapons available. It was just coming off a tanker in western Iraq and setting a course for another target area when the aircraft received the coordinates for a new “priority leadership target” in Baghdad. “You get kind of an adrenaline rush,” Swan said. The B-1 headed for the target, which was in the Mansour neighborhood of Baghdad. With SAM-killing F-16CJs patrolling nearby and EA-6B Prowlers along to jam air defenses, the bomber moved in. The crew cross-checked the coordinates with the airborne controller three times. Twelve minutes after they got the call, the B-1 dropped two hard-target penetrator JDAMs and two other JDAMs—each with fuses set for a 25-millisecond burst

delay—that would follow the initial bombs and plunge deep into the substructure of the building. The building was destroyed, but it appears that Saddam left it only minutes before the strike. For the B-1 crew, the mission was not over; it flew on to strike 17 more targets before landing again.¹⁶⁷

Joint Staff spokesman McChrystal revealed that a mere 45 minutes had elapsed between receipt of the intelligence and the blast of the bombs.¹⁶⁸

Only Saddam’s twitchy instincts saved him from the B-1 strike, a bodyguard later claimed. Saddam did indeed make a stop at the Mansour district safe-house but left by the back door almost immediately. “Ten minutes after they went out the door, it was bombed,” the bodyguard told the *Times* of London.¹⁶⁹

Baghdad Falls

The land component’s task was to destroy all pockets of resistance within

166. Brooks, CENTCOM news briefing, April 8, 2003.

167. Lt. Col. Fred Swan, B-1B weapon systems officer, and Capt. Chris Wachter, B-1B pilot, DOD news briefing, April 8, 2003.

168. McChrystal, DOD news briefing, April 8, 2003.

169. Catherine Philip, “Secrets of Saddam’s Family at War,” *London Times*, July 25, 2003.

the city and link up V Corps and the 1st MEF for occupation duty. The two pincers inexorably closed. First, Army soldiers pushed into the center of Baghdad from the west. Next, Marines moved in from the east. At the same time, other soldiers and marines broke off and moved along the outskirts of Baghdad to capture major road intersections and encircle the city by closing up escape routes to the north. On April 8, Army soldiers fought off a counterattack on the bridges. Marines crossed the Diyala river and headed for the east bank of the Tigris. On April 9, the two coalition ground forces linked up. A group of Marines with an M-88 tank recovery vehicle, in what is now a world-famous event, helped joyous Iraqis pull down a giant statue of Saddam Hussein. The end of the notorious regime was a done deal.

Major combat was over, but the fighting continued. On that very day, April 9, Marine FACs called for close air support in a particular firefight. Several aircraft armed with bombs were stacked in the queue but the controller wanted strafing on the Iraqis. Maj. Scott Cuel, an A-10 pilot from the Michigan Air National Guard, got the call and “put about 600 rounds into them.”¹⁷⁰ The “north fight” continued, too. Ten regular

army divisions and perhaps a brigade of Republican Guard forces were still believed to be in the northern area.¹⁷¹ However, there was no need to launch a new land offensive. SOF forces were quelling resistance around Kirkuk. “We have been targeting them aggressively, both from the air and then with the Special Operations Forces, for the last days,” said McChrystal, “and we judge their capability to have dropped significantly, both from casualties and also from people just simply leaving the battlefield.”¹⁷² Myers said those forces had been “subjected to bombing by airpower and will continue to be dealt with in that way for some time.”¹⁷³

For all that, Iraq had been conquered. The job took just three weeks. Moseley, declining to claim credit, said only, “The reason we were able to push ahead to the center of Baghdad is because the land component commander has been able to shape that [battle] along with interdiction and close air support, and with incredibly brave US Army and US Marine Corps troops, who have been able to capitalize on the effect that we’ve had on the Republican Guard and the fielded forces.”¹⁷⁴

One could agree with Moseley and still state that the whole design of the campaign—with its geographically

170. Jim Garamone, “Air Guardsmen Detail Iraqi Freedom Close Air Support,” American Forces Press Service, July 16, 2003.

171. McChrystal, DOD news briefing, April 10, 2003.

172. McChrystal, DOD news briefing, April 10, 2003.

173. Myers, DOD news briefing, April 9, 2003.

174. Moseley, DOD news briefing, April 5, 2003.

USAF photo by MSgt. Terry L. Blevins



Eagle. AIC William Gilmer, a crew chief, gives a “go-ahead” signal to an F-15E. Coalition fighter air crews worked before and during the war to establish and hold clear dominance of the skies over Iraq and destroy Iraq’s integrated air defense system.

The Edge. On the eve of the formal outbreak of war, Lt. Col. Matt Meloy prepares for a mission. The combination of advanced air and space systems and highly trained airmen gave the coalition its decisive advantage and a strong framework for victory.



USAF photo by SSgt. Myles Cullen

175. Jumper, remarks to National Security Forum, May 27, 2003.

176. Roche, "The Future is Now....," remarks at the Command Chief Master Sergeant Conference, Gunter Annex, Maxwell AFB, Ala., April 25, 2003

177. President Bush, remarks from the USS *Abraham Lincoln*, May 1, 2003, White House transcript.

separated fights and swift execution—owed its existence to airpower. The air component set the strategic conditions for the simultaneous operations taking place across Iraq, from SOF actions to the main effort of the V Corps-1st MEF drive on Baghdad. Airpower made it possible to wage simultaneous attacks. It kept the joint campaign on the offensive during needed pauses for logistics support or unexpected ones due to weather. It protected those same supply lines by making it all but impossible for the Iraqis to mass their forces. The air component drained the Republican Guard of its combat effectiveness and set up favorable conditions for the final assault on Baghdad. Throughout the campaign, meticulous and always-available close air support backed up soldiers and marines who faced fierce Iraqi counterattacks on the ground.

Air dominance made possible a whole new chapter of the American way of war.

Jumper said, "It's this ... dominance that allows us ... to get into the place we're trying to go to, to kick down the door or be a part of kicking down the door, and allows us to operate at the times and places of our choosing. We saw a little bit of this when, for the first time, ... our ground forces maneuvered past large enemy formations without first destroying them, allowing airpower in all of its forms to protect [their] flanks."¹⁷⁵

Air Force Secretary Roche, also saw the broad effects of the war. "The American way of war," he said, "has

undergone a remarkable evolution in terms of how we command and control warfare, with respect to the speed and range with which we can deliver decisive effects, and with respect to the global information dominance that enables our nation to see first, understand first, and act first."¹⁷⁶

On May 1, 2003, President Bush declared an end to OIF's major combat operations, telling America's armed forces: "Because of you, the tyrant has fallen, and Iraq is free."¹⁷⁷

Aftermath

Terminating Saddam's dictatorship and decades of Baath Party misrule certainly did not solve all of Iraq's problems. Far from it. Danger and violence continued.

Baath loyalists and irregular forces carried out a disorganized but dangerous series of attacks on individual US troops who were attempting to keep the peace and provide security during a period of occupation. In June and July, new reports of American deaths became a daily occurrence. The quick victory did not dispel all doubts about the need for a war in Iraq or quiet concerns about the future course of the Global War on Terrorism. Coalition forces, meanwhile, continued the unglamorous but vital task of rounding up senior Baath officials who were still at large and conducting searches for unexpectedly elusive caches of WMD. The post-war effort got a big boost on July 21 when coalition ground and air forces found, cornered, and killed

Saddam's two sons—Uday and Qusay.¹⁷⁸ The very public demise of the psychopathic Hussein Brothers had a major effect on a public still fearful of Saddam and the thugs who had been running the country for decades.

The coalition had met its goals and done so with unparalleled skill. The coalition operated upwards of 1,800 aircraft in the theater. The US lost only two to enemy fire: an A-10 over Baghdad and an F-15E fighter near Tikrit. Both F-15E crew members died—the only combat deaths among airmen.¹⁷⁹

Equally striking is the fact that not a single Iraqi warplane took to the air to contest the coalition fighters. For some, this was a mystery, but not for Moseley. He believed members of the Iraqi Air Force, mauled a dozen years ago by Air Force fighters, made a simple calculation of cost and possible benefit. "We hit him pretty hard up front," Moseley told Pentagon reports on April 5. "I believe that he has not flown because ... they've made a calculation that they will not survive."¹⁸⁰

Central to the campaign's success was the effort to keep the components in synch, not only at the tactical level but also at the operational level. "Having commanders think in a more integrated way about how they employ the force—that's been our goal," Myers said.¹⁸¹ Several factors made it possible. Improved situation awareness gave commanders a real-time view of air, sea and land forces. Recent negative experiences such as that of Operation Anaconda in Afghanistan instilled in Army and Air Force officers alike a new resolve to better coordinate their service efforts. Strong relationships among the component commanders set a powerful example.

There can be no denying, though, that the combined arms team flourished in an environment created by airpower before the first tank rolled into Iraq. Air dominance allowed CENTCOM to maintain tactical surprise until the last moment and to start the ground operations early when the oil fields were threatened. Air dominance

made it possible for CENTCOM to drive V Corps and 1st MEF northward at top speed, bypassing towns in the process. And, most importantly, air attacks decimated the Republican Guard.

Three weeks elapsed between that first dawn strike of the F-117s and the fall of the statue of Saddam. During that period, there unfolded a major Middle East conflict offering incontrovertible proof of this proposition: Modern airpower has permanently re-defined and re-shaped warfare. The power of air and space forces, clearing the way for lean and well-trained ground forces, achieved victory against a larger (if dispirited) adversary in record time and with startlingly few casualties on either side. It severed the regime's command and control, unraveled its air defenses, destroyed many of its most important and elusive targets, and absolutely obliterated its premier ground force.

Operation Iraqi Freedom will stand out as a military success story for the United States Air Force and a triumph of joint and coalition operations. Where the Global War on Terrorism goes next cannot be foreseen. The United States and the rest of the world has entered a new security era in which global threats and global partnerships will change rapidly. Yet the impact of the war will be great. As Rumsfeld said, "You've got to be reminded of Churchill's quote: ... 'This is not the end, it is not even the beginning of the end, but it's perhaps the end of the beginning.'"¹⁸² ■

178. Lt. Gen. Ricardo Sanchez, Commander JTF-7, DOD news briefing on Uday and Qusay Hussein, July 22, 2003.

179. Bradley Graham and Vernon Loeb, "An Air War Of Might, Coordination And Risks," *Washington Post*, April 27, 2003.

180. Moseley, DOD news briefing, April 5, 2003.

181. William Matthews, "Triumph of Jointness," *Defense News*, April 14, 2003.

182. Rumsfeld, DOD news briefing, April 11, 2003.

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Association**
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Arlington, VA 22209
703-247-5800
www.afa.org