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Baghdad

The Urban Sanctuary in Desert Storm?

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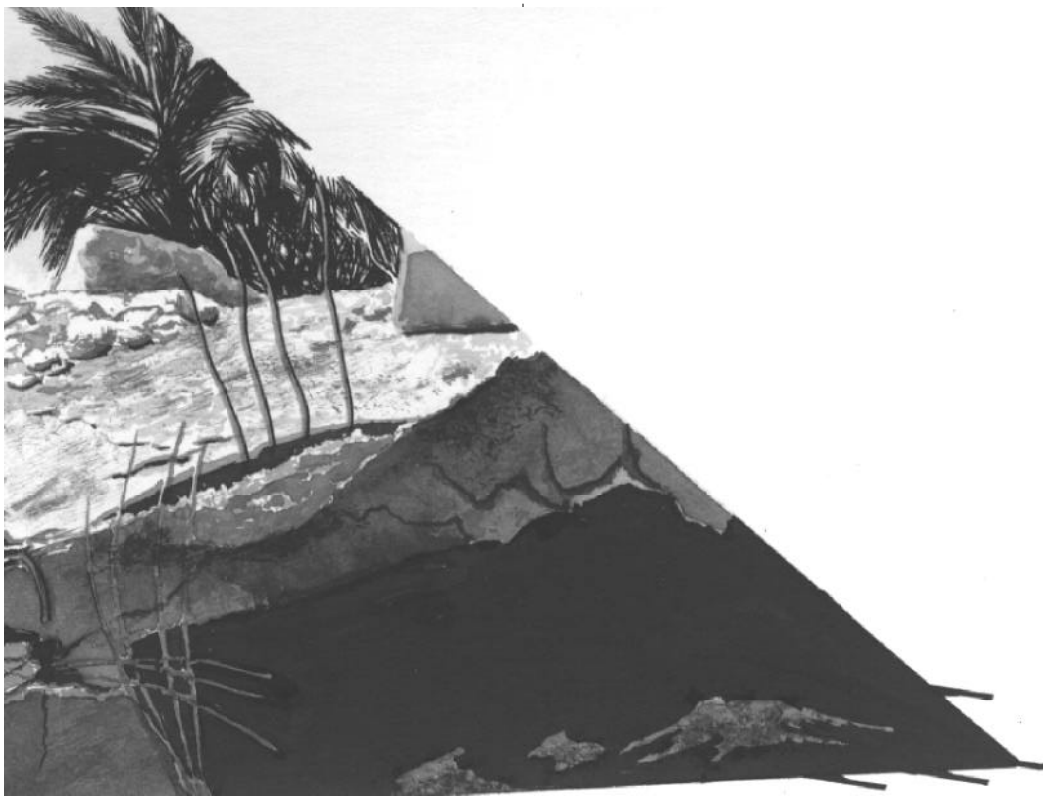
WITH THE EARLY morning attack on the Al Firdos (Amiriyah) shelter on 13 February, Gen Colin Powell thought that Baghdad bombing had run its course. What's the value of "making the rubble bounce," he told his staff. "We have got to review things to make sure we're not bombing just for the sake of indiscriminate bombing."[1]

What an odd and inaccurate image for the chairman of the Joint Chiefs of Staff to hold. If ever there was a bombing campaign that was *not* indiscriminate, it was Baghdad in Operation Desert Storm. Yet for all the visibility of the Iraqi capital, and for all the briefings—public and classified—General Powell could not see what was happening. Years later, in his autobiography, he would still



ask if airpower needed to "pound downtown Baghdad over a month into the war."[2]

Airmen might lament Powell's infantry bias, but such an institutional explanation glosses over far more important matters. If Desert Storm was the first information war, as some claim, the Air Force stumbled badly. Even the highest military and civilian decision makers evidently did not understand the bombing campaign. Moreover, disproportionate attention focused on Baghdad—an otherwise statistically minor part of the air war—bred misguided assumptions about targeting and strategy, ones that persist to this day.

Consider these facts:

•In 43 days of war, a mere 330 weapons (244 laser--guided bombs and 86 Tomahawk cruise missiles) were delivered on Baghdad targets (a mere three percent of the total of all

I don't think the danger in Berlin or Tokyo, either one, was particularly imminent as it is for Baghdad today.

—Walter Cronkite
CNN, 16 January 1991

Table 1

Bombs Delivered by F--117 "Stealth" on Baghdad Targets

	JANUARY										FEBRUARY														
	17	18	19	20	21	22	23	28	29	30	4	5	6	7	8	10	12	13	14	19	22	24	25	28	TOTAL
Leadership																									
Presidential(5)[1]	1	0	0	0	0	5	0	0	2	1	0	2	1	6	2	0	0	6	0	0	0	10	6	0	42
Government/Intelligence (5)[2]	0	1	0	0	0	1	0	2	2	2	0	1	2	0	0	3	1	12	0	0	0	4	0	21	52
Military (5)[3]	1	3	0	0	2	0	0	3	2	0	0	5	1	0	0	0	4	7	0	6	0	0	0	0	32
Air Defense (2)[4]	2	1	0	0	0	2	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	8
Airfields (1)[5]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	4	0	25
C^3																									
Telecommunications (9)[3]	5	0	1	4	0	6	2	0	0	0	2	0	2	1	2	0	0	6	8	0	0	0	0	0	39
Television/Radios(5)[7]	1	0	0	1	2	0	0	1	2	0	0	0	0	0	0	1	8	2	0	0	4	0	0	0	22
Bridges(4)[8]	0	0	0	0	0	0	0	0	2	6	1	0	4	0	0	2	0	0	0	0	0	0	0	0	15
Other																									
Storage (2)[9]	0	0	0	0	0	0	0	0	2	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	7
Refinery(1)[10]	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
TOTAL	10	5	1	5	4	14	2	4	13	9	3	10	13	9	6	6	13	33	0	29	4	14	10	21	244
Number of Targets Attacked	7	3	1	2	2	7	1	3	7	4	3	4	8	3	4	2	4	13	3	2	1	2	1	2	

Table 1 connotes bombs delivered, not necessarily hits (see table 2). Based upon information obtained by the author from AF/Checkmate, GWAPS, 37th Wing records, and the author's research and visits to Baghdad.

Most sources state that 116 Tomahawks hit Baghdad targets. However, 39 were launched on 17 January, 18 the next day, and some 29 followed on five days thereafter (19, 22, 25, and 26 January), for a total of 86 cruise missiles.[11]

Note: Baghdad--area electrical power plants—Baghdad south electrical power plant (S/GTPP) ("Rasheed" plant), Doura electrical power plant (S/GTPP), and Waziriyah electrical substation—were only targeted by Tomahawks.

1. This includes the "Amiriyah shelter" (Al Firdos C^3 bunker), VIP bomb shelter (Government Control Center South), New Presidential Palace, presidential residence and bunker, and Presidential Special Security Services compound.

2. This includes Ba'ath party headquarters, Baghdad Conference Center, Iraqi intelligence Service headquarters, Iraqi Regional Intelligence headquarters, Ministry of Industry, and Military Industrialization.

3. This includes Iraqi air force headquarters, Ministry of Defense (MOD), national computer complex, MOD headquarters, Military Intelligence headquarters and Republican Guard headquarters.

4. This includes Baghdad air defense headquarters (Wahda) and Baghdad RADREL terminal air defense headquarters.

5. This includes Muthenna airfield.

6. This includes "AT&T Building" (Rasheed Street), Baghdad automated multipurpose radio relay terminal, Baghdad telecommunications center, Baghdad transmitter station, Hurriya Square telephone exchange (Jadriya), Jenoub telephone exchange (Ma'moon in Al Karkh), Maiden Square (Bab al Muadem) telephone exchange, Saddam City exchange and radio relay, and Shemal Telecom PTT.

7. This includes Baghdad International RADCOM transmitter (AM), Baghdad International Receiver/RADREL, and Baghdad Primary TV XMTR/Antenna Center (Ahrar), "International TV/Press" center, and Ministry of Information and Culture.

8. This includes Ahrar Bridge, Al Jumhuriyah Bridge, Shuhada Bridge and 14 July (Arbataash) Bridge.

9. This includes Baghdad army storage depot and Baghdad SRBM assembly facility.

10. This includes Doura (Ad Dawra) refinery.

11. CNA, *Desert Storm Reconstruction Report,* vol. 2, pt. 1, 124, 142, 246, 340; vol. 4, pt. 1, 173, 251; and vol. 5, pt. 1, 386, 420–34; *Conduct at Persian Gulf War,* SECRET version, T--256, released under the Freedom of Information Act; Atkinson, 37; Gordon and Trainor, 216. January 17 targets included Ba'ath party headquarters, Ministry of Defense headquarters, the New Presidential Palace, Doura and Rasheed electrical power plants and Baghdad--area substations, and the Baghdad Doura refinery. January 18 targets included the Government Control Center South, MOD Computer Complex (Bab al Muadem), Doura and Rasheed electrical power plants and Baghdad--area substations, and the Doura refinery. The remaining strikes were all against leadership and C^3 targets.

Table 2

F--117 Baghdad Strikes, Hits, and Misses

	STRIKES	HITS	MISSES	NO--DROPS
January				
17	13	7	3	4
18	7	5	0	3
19	10	0	1	9
20	6	4	1	4
21	2	4	0	0
22	11	14	0	2
23	2	2	0	1
28	5	1	3	0
29	11	12	1	1
30	11	3	6	6
February				
4	10	2	1	7
5	10	9	1	0
6	16	12	1	3
7	8	8	1	1
8	6	6	0	1
10	8	5	1	3
12	13	11	2	0
13	37	29	4	4
14	10	7	1	2
19	28	25	2	1
22	2	4	0	0
24	9	12	2	0
25	8	6	0	2
26	35	0	0	35
27	2	0	0	2
28	21	25	0	5
Total	301	213	31	96

Strikes are individual bombing missions with one or two bombs designated to be dropped on targets. *Hits* are bombs delivered and scored by the 37th Wing as on or near aimpoints based upon onboard gun camera video. *Misses* are bombs obviously not delivered on designated aimpoints. *No--drops* are occasions when pilots did not deliver ordnance during their mission.

smart weapons expended) (see tables 1 and 2).[3]

• Ordnance impacting in Baghdad totaled 287 tons (not even one--tenth of one percent of the total in the air war).[4] Contrast this with Linebacker II, during which aircraft dropped 15,000 tons on Hanoi in 11 days, 50 times the bomb tonnage on Baghdad.

• There were 18 days and nights when there were no Baghdad strikes at all. In eight additional days and nights, five or fewer weapons fell. There were only 14 nights when more than two individual targets were attacked within the city.

• Three of Baghdad's 42 targets—Iraqi air force headquarters, Muthenna airfield, and Ba'ath party headquarters—absorbed 20 percent of the effort.[5]

• The most intense "leadership" attack in Baghdad occurred on the last day of the war, when 21 bombs were delivered against the empty Ba'ath party headquarters.

• Only once, on 7 February, was a suspected presidential target hit with more than two bombs during an attack.

Some argue that such statistics prove the decisiveness of a few bombs.[6] Yet, based upon an on--the--ground survey, interviews with Iraqi and American officials, and detailed new data about the F--117 campaign in the capital, a different perspective emerges. Assessing the effects of strategic bombing has never been easy and Baghdad is no exception. But a close examination of city attacks leaves the undeniable conclusion that despite hyperbole to the contrary, Baghdad bombing in itself produced little identifiable military effect.

Indeed, the core focus mostly had civilian impact. The United Nations Children's Fund (UNICEF) stated immediately after the ceasefire that Baghdad "is a city essentially unmarked, a body with its skin basically intact, with every main bone broken and with its joints and tendons cut. . . ."[7] There was little rubble, and civilians were spared, but their life support systems—electricity, water, transportation, communications—were disabled.

To some, this is the very definition of *strategic*. In the words of Lt Col Daniel Kuehl, USAF, Retired, it was "the progressive

entropic dislocation of the innards and connective tissue of the Iraqi society and infrastructure."[8] But did such conventional infrastructure ruin have the postulated effect on the Hussein regime? The answer can only come from a more candid appraisal of what really happened in the Iraqi capital.

Before proceeding further, one must explicitly define the geographic limits and the reason why Baghdad was a distinct part of the air campaign. Because Iraqi air defenses ringing the capital were highly regarded, "downtown" Baghdad was exclusively the domain of F--117 stealth fighters and cruise missiles.[9] Thirty--one targets were located within a three--mile radius extending from the Rasheed Hotel (see figure 1). In total, some 45 prospective Baghdad targets made it onto the bombing schedule (42 ended up being attacked, 39 by stealth).

With unsparing news media focus riveted on Baghdad, a hyperdiscriminate approach was chosen. Precision in weaponry and target identification facilitated pinpoint bombing to achieve "functional" as opposed to "physical" destruction. Yet the impression was always of far more intense bombing, and even these sparse attacks ended up being truncated, largely by Powell and Washington decision makers who felt civilian damage outweighed any military benefits. The end result was that there were only a few moments in 24 nights when the invisible jets were actually present above the Iraqi capital. And there were merely six days when Tomahawks made their presence felt.

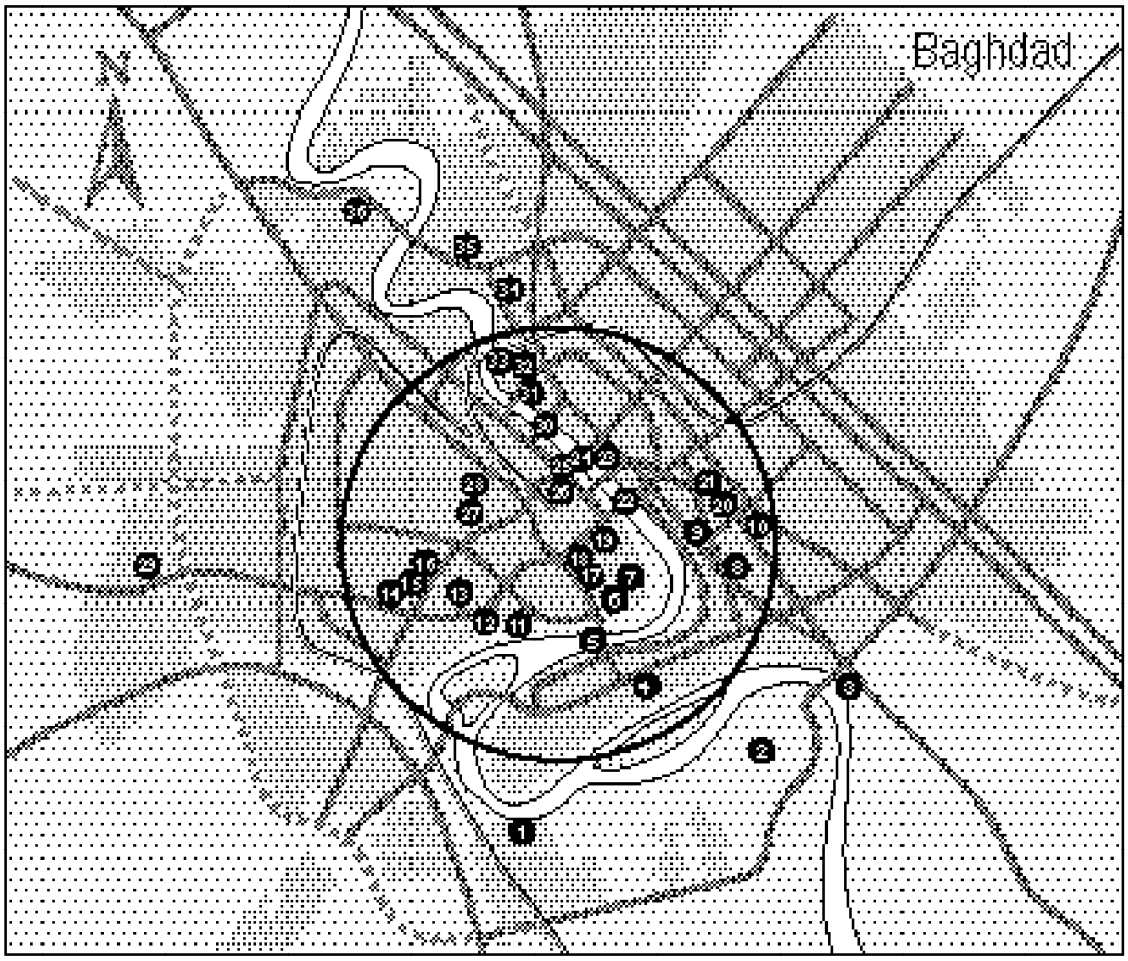
"Iraqis are real trigger pullers," one Air Force officer quipped, citing the mayhem of flak and surface--to--air missiles seen on television that gave the impression of intense bombing by coalition forces. The fireworks display, however, was a powerful image. Air Force leaders even melded the larger strategic campaign and the bombing of Baghdad together as if they were one and the same.[10] The erroneous message is that the proven strategy for any future war is to focus on a nation's capital—indeed a highly discriminate focus on its leadership. Yet, the air attacks against Baghdad do not offer the operational experience to form the basis for such postwar conventional wisdom. Nor is it proven that a combination of early attacks by stealth and precision guided weapons can defeat adversaries quickly and with a minimum of casualties.

A Stealth Mirage

A postwar *New York Times* dispatch from the Iraqi capital described "a people emerging from defeat after suffering *one of the heaviest aerial bombardments in history*" (emphasis added).[11] Echoed Middle East hand Milton Viorst in *The New Yorker*, "There was no Second World War–style urban destruction, *despite the tons of explosives that had fallen*" (emphasis added).[12] A dovish eyewitness wrote in *The Nation* that there were no more than three thousand civilian deaths. "This would be the lowest number of civilian deaths from the bombing of a major city in the history of modern war: Consider the London Blitz, Dresden, Tokyo, Hiroshima, Nagasaki."[13] How had the impression become so skewed that Baghdad could be compared with the Second World War, when tens of thousands of tons were dropped and tens of thousands were killed in individual raids?

Partly the answer lies with the news media, which spoke of massive attacks and an "avalanche" of bombs, highlighting Baghdad from the first night. US military spokesmen, who chose the quick and glitzy sound bite and video clip when more balanced and detailed explanation was required, contributed to the distortion.

Finger pointing nonetheless fails to take into consideration the very strategy of air war planners and targeteers, and the employment of the stealth fighter. Forty--two F--117s flew 1,296 sorties (and 2,358 separate strikes), dropping 2,077 bombs in Desert Storm, roughly 30 percent of Air Force guided tonnage.[14] Given stealth's highly valued accuracy and survivability, most



Key

1 Doura electrical power plant
2 Doura refinery
3 Rasheed electrical power plant
4 Jadriya/Hurriya Square communications relay
5 14 July Bridge
6 Presidential palace/bunker
7 New Pesidential Palace/bunker
8 Baghdad air defense headquarters
9 Alwiya telephone exchange
10 Iraqi Intelligence Service regional headquarters
11 Ba'ath party headquarters
12 Presidential security force
13 Republican Guard headquarters
14 Ma'moon (Karkh) telephone exchange
15 Secret Police complex
16 Iraqi Intelligence Service headquarters
17 Ministry of Industry
18 Saddam Conference Center
19 Government control center south/bunker
20 Internal security headquarters
21 Nidal communications relay
22 Jumhuriyah Bridge
23 Rasheed Street telephone exchange (AT&T Building)
24 Ahrar Bridge
25 "Ministry of Propaganda"
26 State radio and television headquarters
27 Iraqi air force headquarters
28 Muthenna airfield
29 Al Firdos C^3 facility
30 Shuhada Bridge
31 Ministry of Defense headquarters
32 Maiden Square/Bab Al Muadem telephone exchange
33 Waziriyah electrical transformer station
34 Ministry of Defense computer center
35 Aadhimiya telephone exchange
36 Military intelligence headquarters

Off map: Baghdad SRBM assembly, international AM transmitter, Rasheed airfield

Unlocated: Army storage depot, Baghdad radio relay terminal air defense headquarters (near or collocated with no. 8, Saddam City communications relay).

Note: Baghdad radio relay terminal air defense headquarters and army storage depot are also located within the three--mile ring.

(Above) A city burns. Ninety percent of the Japanese city of Toyama is in flames after an attack by B-29s on 2 August 1945. (Left) Schweinfurt erupts. Military, industrial, and residential areas are the subject of a dense pattern of bombs. Yet, the bombing of Baghdad was described as "one of the heaviest aerial bombardments in history" in a post–Gulf War New York Times dispatch.

A success? After the first three days, F-117s could report back that they had successfully delivered a total of six bombs on capital leadership targets, 16 bombs overall in Baghdad.

think it was sequestered for high--threat areas where other planes might be more vulnerable or where collateral damage concerns precluded less accurate platforms. Stealth's focus "mostly against targets in the heavily defended areas of downtown Baghdad" is even cited in the Defense Department's *Conduct of the Persian Gulf War* as its decisive contribution.[15]

However, only 295 stealth strikes (12 percent of its effort) were against capital targets.[16] According to 37th Fighter Wing records, 493 of 2,358 strikes (21 percent) were against airfields located far from urban areas. And another 193 F--117 strikes (8 percent) were flown against targets in Kuwait and the Basra area.[17] Indeed, nine of the top 10 targets hit by stealth—accounting for 662 strikes (27 percent of all F--117 activity)—were targets repeatedly attacked by other air assets, even early in the war, far away from Baghdad. Only one—Ba'ath party headquarters—was located inside the ring.[18]

In terms of historic achievement, there is no question that stealth demonstrated that individual targets in defended airspace could be found amidst dense urban sprawl

A Tomahawk leaves the sea on its way to a target. Thirty-nine Tomahawks attacked targets in Baghdad in the first 24 hours.

and that traditional collateral damage could be minimized in their attack. Yet the illusion of their habitual presence over Baghdad had a definite drawback: The public—even official—impression of far greater numbers, particularly as the propaganda battle over civilian casualties heated up.[19] This led to subsequent restrictions on bombing the capital.

If Desert Storm was the first information war, as some claim, the Air Force stumbled badly.

The stealth--delivered bomb that had the single biggest impact was in the second wave on the night of 17 January. It was the object of the first publicly unveiled videotape when Lt Gen Charles Horner showed it hitting the 13--story Iraqi air force headquarters building on the southeast edge of Muthenna airfield.[20] Soon it became lore that F--117s "hit" more than 50 targets on opening night and "destroyed" 40 percent of all strategic targets.[21]

For all of the vivid reporting from Baghdad, nothing of the sort transpired. Only ten 2,000--pound bombs and 39 Tomahawk sea--launched cruise missiles attacked city targets in the first 24 hours, and only an additional five bombs and 18 missiles landed the next day and night. Though Air Force planners let out a cheer on the first night when the lights went out (all the work of Tomahawks; stealth *never* attacked an electrical power plant), the achievement obscured the fact that the feat was against one of the most fragile target groups and was achieved with attacks outside the capital.

After the first three days, F--117s could report back that they had successfully delivered a total of six bombs on capital leadership targets, 16 bombs overall in Baghdad. Though the countrywide score against leadership was better,[22] the capital assumed some degree of immunity. There was only a total of 14 stealth leadership strikes in the entire first week in Baghdad—less than 15 percent of the aircraft's overall effort. Air defenses and bad weather, as well as human factors and the "friction" of war, significantly disrupted the planned effort.

Iraq's first foray into counterbombing propaganda—the "baby milk" factory—occurred on 23 January, and soon public debate over civilian casualties escalated far out of proportion to physical reality. Tens of thousands of sorties had been flown, and television had aired less than a half dozen examples of civilian damage. Yet, each Iraqi--originating news morsel impacted with great force, and the two adversaries traded increasingly pointed parries.

A few days after the baby milk spat, the first news reports emerged of attacks on the Amman highway during Scud hunting. Even UN Secretary General Javier Perez de Cuellar spoke up for the first time, labeling strikes on oil tankers and refugee traffic "inadmissible."[23] The Soviet Union—ostensible partner in the international coalition—intensely complained to the Bush administration about the "savagery" of the air war.[24] The president assured in his State of the Union address that "Iraq's capacity to sustain war is being destroyed. . . . We do not seek the destruction of Iraq, its culture or its people."[25]

With Scuds and crises du jour intruding, Baghdad faded. During the entire second week of the war, a total of 32 bombs fell on capital targets; by the end of January, about 60 Baghdad strikes had been carried out, less than one--third the number originally planned.[26]

When news from Basra in early February suggested carpet bombing, Pentagon spokesmen seemed increasingly exasperated.[27] "We never said there would be no collateral damage," Lt Gen Thomas Kelly complained at one of his afternoon briefings:

> What we did say is that our pilots scrupulously adhered to good targeting . . .

> and in fact flew that target profile to the best of their ability. We go to great lengths . . . to avoid collateral damage. But war is a dirty business, and unfortunately, there will be collateral damage. There's no way one can prohibit it.[28]

Iraq wasn't claiming even five hundred civilian casualties,[29] yet military spokesmen were practically admitting hidden damage. One might have thought Dresden or Tokyo had occurred.

By the time the Al Firdos shelter was attacked on 13 February, there was widespread confusion regarding the capital campaign. Amiriyah was the worst single incident of civilian carnage—more or less equaling all Iraqi deaths in the past month—yet, that very fact did not seem to demonstrate how successful airpower had been in limiting collateral damage.

Did Iraq win the propaganda war, or did the United States lose it? After Ramsey Clark, former US attorney general, released a video-- tape of war--ravaged Basra, Rear Adm Mike McConnell, JCS intelligence chief, stated:

> There have been some instances of collateral damage, but in the grander scale of things . . . it's very, very small. What we've been able to monitor is that precision weapons have done exactly as they were intended to do.

McConnell defended accuracy by pointing out an unpopular fact no one wanted to hear: Iraqi propaganda was essentially truthful; there was little "hidden" damage. "Every time that I'm aware of civilian casualties, it's been [aired] on television," the admiral said. "If I think back, it was maybe two or three times."[30]

An Empty Center

From the first August 1990 Instant Thunder briefing, Baghdad *was* the air war's symbolic heart in a campaign to "incapacitate, discredit and isolate [the] Hussein regime, eliminate Iraqi offensive/defensive capability . . . [and] create conditions leading to Iraqi withdrawal from Kuwait."[31]

Whether Saddam Hussein was the true focus is not the subject of this article. Official Washington disassociated itself from any personal decapitation effort, while the Black Hole planners in the air component of Central Command (CENTCOM) came to agree that core attacks had the purpose of isolating Saddam and the Ba'ath regime. This would "disrupt" the "leadership's ability to communicate with [the] populace,"[32] create a "communications vacuum" to incapacitate leadership, and result in civil unrest or even overthrow.[33] Precision bombing in Baghdad would "communicate" to the Iraqi people the vulnerability of the regime, while attacks against leadership and communications would sever physical links.

Targeteers and planners interviewed US and foreign contractors and diplomats, Iraqi defectors, and emigrés, all with the hope of locating important aimpoints in the capital. Standing in front of a satellite photo, Col John Warden, chief of the Checkmate group in Headquarters USAF, said:

> They would say, for example, "There was a military command center on the second floor of that building. I drove by it on the way to work." We'd check the information against other sources, and if it checked out, we'd put it on our list of targets.[34]

Countrywide, a total of 33 leadership targets were found, a category second in number only to air defenses and general military support on the eve of the war.[35] Twenty--five potential command centers,[36] many with "state--of--the--art bunker construction,"[37] were identified. In Baghdad, five presidential--associated targets (including two bunkers) were pinpointed, with another half dozen in nearby Abu Ghraib and Taji (outside the three--mile ring). By far, however, the largest number of Baghdad targets were 18 in the command, control, and communications (C^3) category, including telephone exchanges, television and

radio stations, and suspected fiber--optic cable--carrying bridges.

Brig Gen Buster Glosson, chief of the Black Hole group, feared, and General Schwarzkopf tended to agree, that the air war might not be allowed for more than a few days. "All of a sudden the war was going to stop and . . . we [would] have a hell of a lot more stuff to do," Glosson said.[38] Hence, the plan was to spread out the attacks as widely as possible over the entire target base. "Standard" bombing practice of concentrating on one target group after another in sequence was rejected, and the number of bombs to be used at each individual target was reduced.[39] Stealth became the main instrument of this "veneer" strategy, and the Black Hole planners changed the assumption of eight F--117s dropping eight bombs on a typical target in a single attack to just one or two bombs per target.[40]

Indeed, nine of the top 10 targets hit by stealth . . . were targets repeatedly attacked by other air assets, even early in the war, far away from Baghdad.

Believing that only a small window of opportunity existed for surprise, strikes on leadership were also "front ended" with the hope of achieving an early blow.[41] Eighteen capital targets were earmarked to be bombed in the first three days,[42] ten in the leadership and national C^3 categories.[43] However, each target, no matter how large or important, received the same degree of attention. Military, party, intelligence targets, even Saddam's residences, were attacked with a single 2,000--pound bomb or three to six 1,000--pound Tomahawk cruise missiles.

There was considerable prewar attention to potential collateral damage. The administration was fully briefed on the plan for the first 48 hours, and Secretary of Defense Dick Cheney and Secretary of State James Baker reviewed the target list in some detail.[44] An urban map was prepared along with annotations describing the area around each target—"isolated," "sparsely populated," "residential," or "industrial"—and special flags designated whether targets contained chemical weapons, or were near hospitals or mosques.[45] Stealth pilots carried maps annotated with "sensitive" installations such as foreign embassies.[46]

When the Black Hole group started to target four downtown bridges at the end of January, suspecting that they provided fiber--optic conduits used for Scud missile launch commands,[47] micromanagement intruded. A deadly bridge attack in the southern town of Nasiriyah on 4 February had proven yet another Iraqi propaganda success,[48] and though no adverse stories had yet emerged from similar Baghdad bridge strikes (including the mistaken bombing of the Central Bank on 30 January),[49] General Powell equated bridges with added danger. He told Schwarzkopf that Baghdad bridge attacks were not worth the risks, and more than a week before Amiriyah, Schwarzkopf told Glosson to hold off bombing them.[50]

At about the time of Powell's initial order to rein in capital attacks, the Central Intelligence Agency (CIA) concluded that Baghdad's ability to communicate with the Kuwaiti theater of operations (KTO) by secure means was only "moderately degraded" and that alternate routing was still available.[51] Networks proved more redundant and more able to be reconstituted than targeteers anticipated. Underground coaxial cables, fiber optics and computerized switching systems in particular "proved particularly tough to put out of action."[52]

With bridges and a suspected communications node under the Rasheed Hotel off the target list, the Black Hole planners refocused on other C^3 links, flying 37 stealth strikes over Baghdad on 13 February, the highest total of the war (see table 2). One of those targets was the Al Firdos C^3 bunker.

After the attack, Washington insisted on approving all city targets.[53] A variety of "senior Pentagon" and "administration" officials went off the record, claiming that Amiriyah was an important back--up "leadership" hideout activated because of the success of the air campaign.[54] But by the time of Amiriyah, the Iraqi leadership had assimilated a far simpler message: Stay away from visible facilities, sit tight for the Americans will soon be finished and then they will be gone. General Kelly himself inadvertently communicated this immunity: "I would say to the people of Iraq the safest place for them at night is home in their beds, because we're not bombing neighborhoods."[55]

Home in Their Beds

When Peter Arnett interviewed Saddam Hussein on 27 January, it was in a modest residential house in northwest Baghdad, far from the downtown presidential compound.[56] As Soviet envoy Yevgeny M. Primakov began his shuttle diplomacy, he also met the Iraqi leader in normal private homes, not in government facilities.[57]

Before the war, the Iraqi leadership debated where Saddam and the inner circle should operate from. The office of the president and Saddam's personal guard, well known for their impenetrable security screen, had multiple buildings and residences to choose from. Though the presidential grounds, a five--square--mile enclave in the elbow of a twist in the Tigris River, contained numerous obvious targets—including underground command centers[58]—it also contained dozens of VIP residences and innocuous "safe houses." And there were scores of additional government and Ba'ath party offices and homes dotted elsewhere throughout the city.

Just before the UN deadline, the Iraqi government informed the foreign diplomatic corps that it would move all functions out of the capital,[59] and civil defense exercises were held to practice civilian evacuation. When the bombing started, many people flooded from the capital to stay with relatives and friends in the countryside and avoid what they perceived to be the impending cataclysm in the center.

But the inner circle soon realized that much of its formal contingency planning didn't need to be implemented. Both the Soviet and French governments, officials claim, assured them that the coalition would not destroy the capital, not pursue its capture, nor attempt the occupation of Iraq. Bombing did not contradict this assurance.

Iraqi officials state without exception that after the first few days, they recognized what types of targets were going to be hit and how circumscribed the damage would be. Though Iraqi public bluster is that Saddam was in Kuwait with the troops when the bombing started, sources close to the president state that he was actually in Baghdad, in a residence specifically chosen for its innocence. After the first few days, however, he moved back to his compound. A national--level "tactical" command center set up in Babylon near Hillah, less than 45 minutes south of the capital by car, was only occasionally used.

Though Warden opines that through C^3 attacks, Saddam was "reduced" to running the war with a command system "not much more sophisticated than that used by Wellington and Blücher at Waterloo in 1815,"[60] this is mirror imaging of American electronic dependence. US intelligence was well aware that Saddam made use of face--to--face meetings and special couriers to deliver "official" messages to subordinates. During the Iran--Iraq war, he would visit the front unannounced, or summon leaders to Baghdad (this was only a few hours' drive or a 30--minute helicopter ride) in order to assert his personal control and intimidation.[61] Numerous military actions (e.g., authorization of Scud missile firings, escape of aircraft to Iran, the Khafji incursion) required Baghdad's approval, but bombing of leadership targets and disruption of communications

did not seem to have much effect. Instructions normally would have been written and transmitted via courier, Iraqi officials say. And most targets hit were not occupied anyhow.

When asked to describe the impact of Baghdad bombing on either government decision--making or military capability, knowledgeable officials state that given their assumption of a short war (at least a short air war), they could think of only minor effect, particularly given emergency generators used to handle the most important needs. In terms of work habits or daily lives, officials could not give any examples of adverse impact other than the expected "inconveniences" of war.

Though the psychological impact of strategic bombing is one of its cardinal qualities, and attacks of specific targets were meant to convey discreet messages,[62] Iraqi officials gloat that the precision was soothing rather than disconcerting. In a city the size of metropolitan New York with a population of over four million, scattered and occasional strikes seemed to validate their decision not to give in to the coalition. In early February, people evidently agreed, for they started returning to the capital, and normal basic commerce resumed.

Pinpoint bombing of leadership might have been meant to "send a message" to the Iraqi people, but most Baghdadis knew little of what went on within Saddam's complex. Ironically, then, there were few visible signs that Saddam or the Ba'ath were in fact seriously threatened.[63] The limited bombing effort was its own messenger. "If you are asking about the effect in Baghdad, clearly more intense bombing would have made a greater impression on the people," a Foreign Ministry official said in 1993.

Quick and accurate destruction of many targets across Iraq's strategic depth is the main evidence airpower advocates use to prove the air war's success. Postwar surveys confirm precise destruction of C^3 facilities,[64] but from this, it is difficult to conclude that physical damage cut the leadership off. "When command communications suffer extreme damage, as they did in Iraq," Warden asserts, "the leadership has great difficulty in directing war efforts." He goes on to state that "the lack of communications not only inhibits the bolstering of national morale but also facilitates rebellion on the part of dissident elements."[65] Granted the war made communications with the south difficult if not impossible, but there is little evidence as to the effect on directing war efforts. American postulations are merely of what effect precision bombing *should* signal and achieve.[66]

Similarly, the RAND Corporation's study *A League of Airmen* states that Baghdad bridge attacks "downed fiber--optics communications cables. . . ."[67] There is no evidence that the mission was successful; RAND merely repeats the presumed result. Indeed, at the end of the war, the Defense Intelligence Agency (DIA) concluded that the coalition's

> inability to permanently degrade SRBM command and control is . . . significant, despite determined efforts to incapacitate Iraqi military and civilian national networks. Even in the last days of the war, Baghdad retained a sufficient capability to initiate firings from new launch areas and to retarget SRBMs from urban to military and high--value targets, such as the Dimona nuclear reactor.[68]

Long before the 28 February cease--fire, Iraqi cleverness and resource were apparent, both in the use of decoys and deceptions and in preparations for pinpoint bombing. Throughout the country, a massive effort was undertaken to strip manufacturing and control facilities of valuable production equipment, computers, records, and materials. At telephone exchanges, electrical power plants, oil refineries, and other installations, even at Baghdad museums, valuables, sensitive equipment, and spare and repair parts were removed and taken to places thought less likely to be bombed.[69]

After spending more than six weeks in postwar Baghdad in two trips in 1991 and 1993 inspecting virtually every target at-

tacked, what seemed clear to me was that the *jihad* against Saddam was never more than a clash with Saddam's buildings.[70] Visits to ministries, headquarters, and communications sites exposed one of the ironic weaknesses of precision bombing. Attacks indeed did little damage to surrounding areas. And buildings were indeed rendered unusable. But Iraqi officials prepared themselves by evacuating their normal places of business. And alternate communications were able to be established, facilitated by a pinpoint strategy that never threatened the entire communications fabric during any single focused period.

"Veneer" bombing and precision secured the safety of military and civilian leadership. The Defense Ministry, for instance, moved into a Ministry of Youth building. The office of the president operated from the Central Planning Ministry building inside the Tigris complex, a mere two hundred feet from the bombed Jumhuriyah bridge.

There is no concrete evidence that any Baghdad leadership target was actually in use at the time of attack. Ministers and key staff evacuated buildings before 17 January, removing with them equipment and files. In the case of some targets—telephone exchanges and radio relays, bridges, and electrical plants—a well--placed bomb or two was indeed enough to achieve the sought--after functional kill. But there is a lack of proof from these examples that small numbers of bombs can defeat "leadership" or the core of any society in a short war.

Further, while there is no evidence of adverse psychological impact on the civilian population as a result of Baghdad bombing, the very modesty of the campaign had a disastrous countereffect. In areas where bombing was more "traditional" and far more intense—such as in Basra and the south and in northern cities—civil unrest was far greater and the grip of the central government was indeed undermined. Granted these are Kurdish and Shi'ite areas prone to hostility towards Baghdad anyhow. But the civil war at the periphery was neither planned nor anticipated.

In Baghdad, where bombing was circumscribed, Saddam Hussein retained firm control. Immediately after the cease--fire, people cautiously awaited coalition pressure or military action to facilitate the regime's downfall. When nothing occurred, most quickly resumed their prewar existences. The regime used the "massacre" at Amiriyah and the bombing of the baby milk factory to demonstrate Iraq's unjust victimization. The sparseness of Baghdad attacks made such propaganda claims seem more credible, for what else could the explanations be other than intentional pain when so many other government targets went unbombed?

Air war bravado over bombs dropped down elevator shafts and through doorways of Saddam's palaces and ministries notwithstanding,[71] the true fabric of governmental control—internal security and Ba'ath party elements at the local level, government offices, urban military camps—emerged unscathed. Target selection and the veneer strategy is to blame; the silly debate about bombing statues and the futile attack on the empty Ba'ath party headquarters building on the last day of the war demonstrates the depletion of Air Force "strategic" thinking as Desert Storm continued. Saddam could not control the air over his own capital, and the US could bomb pretty much anything it wanted. What a great achievement for airpower. Baghdad, however, ended up as a symbol, an effigy for adherents of the leadership cult. The primary contributor to Saddam's decision to withdraw—attacks on leadership, traditional strategic bombing, tactical strikes, the ground war—remains utterly mysterious. □

Notes

1. Rick Atkinson, *Crusade* (Boston: Houghton Mifflin, 1993), 288–89.

2. Colin Powell with Joseph E. Persico, *My American Journey* (New York: Random House, 1995), 513.

3. Of more than 215,000 individual weapons dropped, 10,500 were laser guided. Of these, fewer than 8,000 were used against "strategic targets." See Thomas A. Keaney and Eliot A. Cohen, *Gulf War Air Power Survey* (hereafter *GWAPS*), vol. 5, pt. 1, 549–54.

4. A total of 84,200 tons were dropped by US aircraft. Department of the Air Force, *Reaching Globally, Reaching Powerfully: The United States Air Force in the Gulf War: A Report* (Washington, D.C.: Department of the Air Force, September 1991), 28; Department of Defense, *Conduct of the Persian Gulf War: Final Report to Congress*, vol. 2 (Washington, D.C.: Department of Defense, 1992), T--78.

5. The Ba'ath party headquarters took 28 bombs, Iraqi air force headquarters took 17, and Muthenna airfield took 25. Information taken from an informal F--117 strategic target list and "scorecard," 37th Fighter Wing, obtained by the author. Six Tomahawks were also fired against Ba'ath party headquarters on 17 January. *GWAPS*, vol. 4, pt. 1, 173; and vol. 2, pt. 1, 124, 246.

6. See for example John A. Warden III, "Employing Air Power in the Twenty--first Century," in *The Future of Air Power in the Aftermath of the Gulf War*, ed. Richard H. Schultz Jr., and Robert L. Pfaltzgraff Jr. (Maxwell AFB, Ala.: Air University Press, 1992), 81; John R. Pardo Jr., "Parallel Warfare: Its Nature and Application," in *Challenge and Response: Anticipating US Military Security Concerns*, ed. Karl Magyar et al. (Washington, D.C.: Government Printing Office, 1994), 283; Casey Anderson, "`Hyperwar' success may alter AF doctrine," *Air Force Times*, 22 April 1991, 24; idem, "Air Force looks at going deep quickly in future wars," *Navy Times*, 29 April 1991, 27; "Catching up with doctrine," *Jane's Defence Weekly*, 29 June 1991, 1174.

7. Quoted in Samir al--Khahl, "Iraq and Its Future," *New York Review of Books*, 11 April 1991, 10.

8. Private written communications with the author.

9. This excludes Rasheed airfield and targets in the suburbs of Abu Ghraib and Taji.

10. "We did not carpet bomb downtown Baghdad," said Gen Merrill McPeak, Air Force chief of staff, in his end of the war briefing. "It's obvious to anyone who has been watching on television, the pictures of *Baghdad* neighborhoods untouched, people driving around, walking around on the sidewalks and so forth . . ." (emphasis added). Gen "Tony" McPeak, USAF, DOD news briefing, Friday, 15 March 1991, 2 P.M. EST. "To do the things that we did *in Baghdad* in the old days would have taken large numbers of bombs with a lot of damage to surrounding areas," added Lt Gen Charles Horner. "These guys went out there night after night and took out individual *buildings*" (emphasis added). Eric Schmitt with Michael R. Gordon, "Unforeseen Problems in Air War Forced Allies to Improvise Tactics," *New York Times*, 10 March 1991, A1.

11. Paul Lewis, "Iraq's Scars of War: Scarce and Precise," *New York Times*, 22 April 1991, A1.

12. Milton Viorst, "Report from Baghdad," *The New Yorker*, 24 June 1991, 58.

13. Erika Munk, "The New Face of Techno--War," *The Nation*, 6 May 1991, 583.

14. There were actually 2,592 potential opportunities to drop bombs, but many strikes were aborted. See *Conduct of the Persian Gulf War*, vol. 2, T--75; USAF *Fact Sheet*, "37th Fighter Wing, Operation Desert Shield/Operation Desert Storm," current as of November 1991. A strike is to be distinguished from a sortie by the fact that most F--117 sorties included two distinct strikes with one weapon earmarked to be dropped on one aimpoint and a second bomb earmarked to be dropped on a second aimpoint. Occasionally, the aimpoints were at the same target, but far more often, they were at different ones, sometimes at great distances apart. Information on ordnance expenditures was provided by CENTAF in response to a Freedom of Information Act request: 1,316 GBU--10, 33 GBU--12, 718 GBU--27, and four Mk84LD. The slightly different 2,077 figure is contained in letter, 37th Fighter Wing (37 OSS) to the author, subject: Freedom of Information Act (FOIA) Request #92--01, 11 February 1992.

15. *Conduct of the Persian Gulf War*, vol. 2, T--75.

16. Informal F--117 strategic target list and "scorecard," 37th Fighter Wing. These aircraft dropped 244 bombs (11 percent of stealth's total). A total of 96 Baghdad sorties were aborted and weapons were not dropped due to weather, air defenses, the inability of the pilots to acquire the target, or equipment malfunctions (see table 2).

17. Ibid.

18. The ten top stealth targets include the Samarra chemical weapons plant (149 missions), Salman Pak biological and chemical weapons development facility (72 missions), Ubaydah bin Al Jarrah airfield in Kut (72 missions), Balad airfield (60 missions), Tallil airfield (57 missions), Tuwaitha nuclear research center (56 missions), Ba'ath party headquarters (55 missions), Al Asad airfield (48 missions), H2 airfield (47 missions), and Qayyarah airfield (39 missions).

19. Perhaps the White House's pressure on news media executives to remove their reporters from Baghdad prior to the bombing had other purposes, but the news media understood Marlin Fitzwater's personal entreaties as a warning that people in Baghdad were "in grave danger" given the intensity of bombing that would occur. Peter Arnett, *Live from the Battlefield* (New York: Simon & Schuster, 1994), 363--64. See also John R. MacArthur, *Second Front: Censorship and Propaganda in the Gulf War* (New York: Hill and Wang, 1992), 185–87.

20. Gen H. Norman Schwarzkopf and Lt Gen Charles A. Horner, CENTCOM news briefing, Riyadh, Friday, January 18, 1991, 7 P.M. EST.

21. Air Force Posture 1995, *Joint Statement of Secretary of the Air Force Sheila E. Widnall and Chief of Staff General Ronald R. Fogleman: Testimony before the House National Security Committee*, 22 February 1995, 18; *Conduct of the Persian Gulf War*, 156, 222. See also Lt Gen Charles A. Horner, *Stealth and Desert Storm, Testimony before the House Defense Appropriations Committee*, 30 April 1991, 2; "The Value of Stealth," *Testimony by General John M. Loh before the House Defense Appropriations Subcommittee*, 30 April 1991, 3.

22. By the end of the first week, a total of 51 stealth and 36 Tomahawk missile strikes, supplemented by eight F--16s and four F--111Fs, were scored as having been flown against leadership targets. *GWAPS*, vol. 5, pt. 1, 419--25. F--16 sorties were flown against 3d Corps headquarters in Kuwait, formally part of the leadership category. Four F--111Fs were tasked to hit Saddam's "Tikrit summer house" on the first night, and one strike was reported as successful. F--111F target list and "scorecard" obtained by the author.

23. On 30 January, Jordan's Foreign Ministry said that four of its nationals and one Egyptian were killed in deliberate and brutal allied air attacks on the Baghdad--Amman highway. BBC World Service, *Gulf Crisis Chronology* (London: Longman Current Affairs, 1991), 209. See also UPI (United Nations), "UN Leader Condemns Reported Bombing of Jordanian Drivers by Allied Forces," 4 February 1991; Rick Atkinson and Dan Balz, "US: Iraq Exploiting Civilians," *Washington Post*, 5 February 1991, A1. The President of Tunisia, Zini El Abadine Ben Ali,

told the UN on 30 January that the destruction of Iraq was "intolerable."

24. James A. Baker III with Thomas M. DeFrank, *The Politics of Diplomacy* (New York: G.P. Putnam's Sons, 1995), 402, 404.

25. The president's address before a joint session of Congress on the State of the Union, 29 January 1991, contained in *Foreign Policy Bulletin*, January–April 1991, 58.

26. Michael R. Gordon and Bernard E. Trainor, *The Generals' War*: *The Inside Story of the Conflict in the Gulf* (Boston: Little, Brown, 1991), 312–13. Gordon and Trainor state that about a hundred strikes had occurred in Baghdad by the two--week mark, but they overestimate (see table 1).

27. Mark Fineman, "Smoke Blots Out Sun in Bomb--blasted Basra," *Los Angeles Times*, 5 February 1991, 7; Nora Boustany, "Iraq Waits `Impatiently' for Ground War to Start," W*ashington Post*, 8 February 1991, A16; Carol Rosenberg, "Scenes of war's havoc," *Philadelphia Inquirer*, 10 February 1991, 1A. Brig Gen Richard Neal responded to the claims with a lengthy explanation that substantiated hidden damage: "It's important to understand that Basra is a military town in the true sense. . . . As a result of all of these different targets that are close to radio transmission stations, communications places, POL [petroleum, oil, and lubricants] storage, chemical plants, significant warehousing capabilities . . . it's very difficult for us to separate these. But even having said that, I think our targeters and the guys that deliver the ordnance have taken extraordinary steps to try and limit collateral damage. But I will be quite frank and honest with you, that there is going to be collateral damage because of the proximity of these targets close to, abutting civilian sites." (CENTCOM news briefing, 11 February 1991, 10 P.M. EST)

28. Lt Gen Thomas Kelly, DOD news briefing, 7 February 1991, 11:30 P.M. EST.

29. On 5 February, Foreign Minister Tariq Aziz said that 428 Iraqi civilians had been killed and 650 wounded in bombing attacks since the war began. On 6 February, the *New York Times* reported that 108 Iraqi civilians had been killed and 249 wounded in attacks on residential neighborhoods. Alan Cowell, "Iraq Suspending Fuel Sales, As Raid Widens Shortages," *New York Times*, 6 February 1991, A11. On 8 February, some 600 civilian fatalities were quoted. Nora Boustany, "Iraq Waits `Impatiently' For Ground War to Start," *Washington Post*, 8 February 1991, A16. The Iraqi Minister of Religious Affairs claimed on 11 February that "thousands" of civilians had been killed or wounded in bombing, a significantly higher figure than the previous 650 dead and 750 wounded given out by the Information Ministry. "Iraqi Lifts Estimate of Civilian Loss to Thousands," *New York Times*, 12 February 1991, A13. The statement was obviously intended for Arab audiences.

30. Rear Adm Mike McConnell, DOD news briefing, 22 February 1991, 3:30 P.M. EST.

31. Air Force/Checkmate briefing (TS/LIMDIS), "Instant Thunder: Proposed Strategic Air Campaign," 14 August 1990, declassified and released under the Freedom of Information Act (FOIA).

32. GWAPS, vol. 1, pt. 1, 109. Given Iraq's highly centralized decision making, "isolation and incapacitation" was labeled a bombing objective of "overriding importance." *Conduct of the Persian Gulf War*, 199. See also *GWAPS*, vol. 2, pt. 1, 22. "The intent was to fragment and disrupt Iraqi political and military leadership by attacking its C^2 [command and control] of Iraqi military forces, internal security elements, and key nodes within the government. . . . The target set's primary objective was incapacitating and isolating Iraq's senior decision--making authorities," the report went on to say. *Conduct of the Persian Gulf War*, 126–27.

33. *GWAPS*, vol. 1, pt. 1, 157.

34. *Airpower in the Gulf*, 45.

35. *GWAPS*, vol. 1, pt. 1, 10, 115; vol. 2, pt. 2, 280.

36. *GWAPS*, vol. 2, pt. 1, 206.

37. Air Force/Checkmate briefing, "Desert Storm," n.d. (postwar circa 1992), released under the FOIA.

38. *GWAPS*, vol. 1, pt. 1, 164. At Warden's briefing on 17 August, Schwarzkopf said that "by the end of the first week we'll have all kinds of pressure to get out! The [United Nations] Security Council will scream. If we can be done in six days, we can say we're sorry and get out. [It] may not be pretty, but we're gonna get this." Richard T. Reynolds, *Heart of the Storm: The Genesis of the Air Campaign against Iraq* (Maxwell AFB, Ala.: Air University Press, 1995), 109.

39. *GWAPS*, vol. 1, pt. 1, 165.

40. *GWAPS*, vol. 1, pt 1, 123; vol. 1, pt 2, 173.

41. *GWAPS*, vol. 2, pt. 2, 282.

42. These targets included the Rasheed street communications center (the so--called AT&T Building), Baghdad international RADCOM transmitter, Jenoub (Ma'moon) communications facility, Baghdad international receiver/radio relay station (north of Al Firdos), Baghdad military intelligence headquarters, Baghdad RADREL terminal air defense headquarters (Wahda), Ba'ath party headquarters, Doura electrical power plant, Iraqi air force headquarters, Baghdad TV center, Iraqi Intelligence Service headquarters, Maiden Square telephone exchange (Bab al Muadem), Ministry of Defense headquarters, Ministry of Information/Culture, the MOD/National Computer Center, New Presidential Palace, the Baghdad presidential residence and bunker, and the Shemal telecommunications exchange.

43. These included Baghdad internal security headquarters, Baghdad military intelligence headquarters, Ba'ath party headquarters, Iraqi air force headquarters, Iraqi Intelligence Service headquarters, Ministry of Defense headquarters, Ministry of Information/Culture, the MOD/National Computer Center, New Presidential Palace, and the presidential bunker.

44. *GWAPS*, vol. 1, pt. 1, 90; vol. 2, pt. 2, 78; Gordon and Trainor, 365.

45. *GWAPS*, vol. 1, pt. 1, 89.

46. *Conduct of the Persian Gulf War*, 133.

47. *GWAPS*, vol. 2, pt. 2, 285–87; *Conduct of the Persian Gulf War*, 238; Atkinson, 295.

48. The announcement by Iraq was made on 6 February. "Iraqis Sever Ties with Six Nations," *New York Times*, 7 February 1991, A1; Nora Boustany, "Iraq Charges High Civilian Toll in Air Raids," *Washington Post*, 7 February 1991, A1; Alfonso Rojas, "A bridge too near for civilians as bombers strike," *Guardian* (London), 8 February 1991.

49. On 30 January, an attack against the downtown Ahrar bridge, near the Mansour Melia Hotel, mistakenly hit the Central Bank in the old market area; there were no casualties. Baghdad bridge attacks were reported in R.W. Apple Jr., "Heaviest Shelling by the Allies Yet Rips South Kuwait," *New York Times*, 13 February 1991, 1; "Two Government Departments Hit in Allied Air Strikes on Baghdad," *New York Times*, 13 February 1991, A14; "Iraqi Lifts Estimate of Civilian Loss to Thousands," *New York Times*, 12 February 1991, A13. During a visit to the Marines, Schwarzkopf was asked about the bombing of the Baghdad bridges on 13 February. He stated that there was "a very, very, very good reason for bombing that bridge in Baghdad," which he wrongly said was part of a key supply route that was being used to support Iraqi troops in Kuwait. UPI (Northern Saudi Arabia), "Schwarzkopf Defends US Bombings," 14 February 1991. The bombing of the Central Bank was first reported in Lee Hockstader, "Battered Baghdad Struggles On: Citizens of Iraqi Capital Bemoan Reversal of Fortunes," *Washington Post*, 28 February 1991, A1.

50. The *GWAPS* speculated that television's publicizing of the Nasiriyah bridge strike on 4 February may have influenced Powell. "Civilian deaths at that site may have increased Powell's reaction to F--117 night strikes against bridges in downtown Baghdad." *GWAPS,* vol. 2, pt. 1, 221. "Decision makers in Washington appear to have concluded that these effects [from severing the bridges] were not worth the adverse media publicity that a systematic attack on Baghdad's bridges would, in all likelihood, have produced. . . . *GWAPS* could find no unequivocal documentary record of bombing restrictions emanating from Washington." *GWAPS,* vol. 2, pt. 2, 287. See also Eric Schmitt, "Iraq Said to Hide Key War Center in a Baghdad Hotel For Foreigners," *New York Times*, 14 February 1991, A1; and R.W. Apple Jr., "Allies to Review Air Target Plans to Avoid Civilians," *New York Times*, 15 February 1991, A1.

51. Department of the Army, Operation Desert Shield/Storm, MI [Military Intelligence] History, vol. 2, n.d. (1991), 8--113, partially declassified and released under the FOIA. On 6 February, CENTCOM reported that "Iraqi leadership appears to remain in control of its military forces." CENTCOM SITREP for 6 February 1991, released under the FOIA.

52. *GWAPS Summary Report*, 70. Since communications were reestablished, the targets "required persistent restrikes." *Conduct of the Persian Gulf War*, 127. National--level capability could be repaired, "and thus needed to be attacked repeatedly." Ibid., 201.

53. In the words of the *Gulf War Air Power Survey*, "To all intents and purposes the civilian losses ended the strategic air campaign against targets in Baghdad." *GWAPS,* vol. 2, pt. 1, 206. See also Gordon and Trainor, 326–27.

54. See for example Rick Atkinson and Dan Balz, "Bomb Strike Kills Scores of Civilians in Building Called Military Bunker by U.S., Shelter by Iraq," *Washington Post*, 14 February 1991, A1; R. Jeffrey Smith, "Building Was Targeted Months Ago as Shelter for Leaders," *Washington Post*, 14 February 1991, A25; Michael R. Gordon, "U.S. Calls Target a Command Center," *New York Times*, 14 February 1991, A17.

55. Lt Gen Thomas Kelly, USA, and Capt David Herrington, USN, DOD news briefing, Wednesday, 13 February 1991, 3:30 P.M. EST.

56. Arnett, 399–400.

57. *Literaturnaya Gazeta*, 27 February 1991, quoted in *GWAPS*, vol. 1, pt. 1, 68.

58. Targets identified by the US in this area included the Baghdad Conference Center, the Rasheed Hotel, the Ministry of Industry, Government Control Center South (a communications/command center northwest of the New Presidential Palace), the New Presidential Palace and command center, a presidential residence and command center, Ba'ath party headquarters, Republican Guards headquarters, and the Presidential Security Service compound.

59. *Conduct of the Persian Gulf War*, 95.

60. Atkinson, 274. By the end of the second week, the Air Force wrote, "With even back--up communications systems disrupted, Saddam Hussein was *reduced to* sending orders from Baghdad to Kuwait by messenger; the trip took at least 48 hours" (emphasis added). *Reaching Globally, Reaching Powerfully: The United States Air Force in the Gulf War*, 23. Schwarzkopf also stated that "Saddam Hussein and the Iraqis have been forced to switch to backup systems, and those systems are far less effective and more easily targeted." Gen Norman Schwarzkopf, Brig Gen Buster Glosson, CENTCOM news briefing, Riyadh, Saudi Arabia, 30 January 1991. "The bombing campaign seriously degraded Iraq's national communications network by destroying Saddam Hussein's preferred secure system for communicating with his fielded forces." *Conduct of the Persian Gulf War*, 200.

61. *GWAPS*, vol. 1, pt. 1, 69. Iraqi deserters in Desert Storm indicated high reliance on couriers. Interrogations of captured sailors after the Battle of Bubiyan revealed that secret orders were hand delivered from Iraqi naval headquarters in Basra to the captains of the Polnocnyy LSMs ordering them to sail their ships to the Bandar Khomeini port in Iran. CNA, Desert Storm Reconstruction Report, vol. 6, 4–7, partially declassified and released under the FOIA.

62. Destruction of central C^3, Glosson thought, would "put every household in an autonomous mode and make them feel they were isolated. I didn't want them to listen to radio stations and know what was happening. I wanted to play with their psyche." *GWAPS*, vol. 1, pt. 1, 93.

63. Though a large dose of "strategic psychological operations" was meant to influence the people of Baghdad, for a variety of reasons, the PSYOP campaign was never implemented.

64. A UN postwar survey stated that at least 400,000 telephone lines "were damaged beyond repair" that "the main microwave links connecting most of the cities were also damaged," with additional C^3 targets damaged to various degrees. International and regional communications, consisting of the two satellite earth stations at Dujail and Latifiyah, two international exchanges in Baghdad, and microwave and coaxial cable links to Turkey, Syria, Jordan, and Kuwait, were destroyed. Sadruddin Aga Kahn Report, 15 July 1991, 3, 7, annex 10. Also based upon the author's observations in Iraq in August–September 1991 and February 1993.

65. John A. Warden III, "Employing Air Power in the Twenty--first Century," in Schultz and Pfalzgraff, 65.

66. Even postwar analysis seems to accept without question that the bombing was having a psychological impact in Baghdad. "Undoubtedly," one postwar report states, "the impact of six Tomahawks hitting the Iraqi Ministry of Defense between 1010 and 1017 [on 17 January] did little to improve morale of those in the building or neighborhood." *GWAPS*, vol. 2, pt. 1, 143. "The destruction of several of the Iraqi government's larger buildings in Baghdad would obviously have had psychological effects on both government and people" (167).

67. *A League of Airmen*, 130.

68. Defense Intelligence Agency, "Iraqi Short--Range Ballistic Missiles in the Persian Gulf War: Lessons and Prospects," defense intelligence memorandum, March 1991, obtained by the author, and also quoted in Gordon and Trainor, 498. The General Accounting Office also falls into the trap of crediting physical destruction with functional effect, stating in a report on the performance of the Tomahawk missile that its use during daytime "had the added benefit of maintaining psychological pressure on the Iraqis in and around Baghdad." US General Accounting Office, "Cruise Missiles: Proven Capability Should Affect Aircraft and Force Structure Requirements," NSIAD--95--116, April 1995, 25. Tomahawk was only an occasional visitor in the sparse campaign and psychological pressure was merely the alleged impact.

69. Author's observations in Iraq in August–September 1991 and February 1993, and interview with Ministry of Oil, Telecommunications, and Defense officials. UNSCOM concluded that "virtually the entire computer capacity" at Tuwaitha, as well as elements like electromagnetic isotope separation components and nuclear materials, had been removed before the war began. The materials had been moved to "emergency storage" in pits located in a farmland area a few miles from the nuclear facility. *GWAPS*, vol. 2, pt. 2, 365–66. UN inspection teams discovered that "most production equipment, components, and documents had been removed before the beginning of the air campaign." *Conduct of the Persian Gulf War*, 208. See also US Congress, House Foreign Affairs Committee, *Iraq Rebuilds Its Military Industries*, staff report, 29 June 1993, 9; and

John Simpson, *From the House of War* (London: Arrow Books, 1991), 159.

70. John Warden wrote as much after the war, stating that "first--day attacks did considerable damage to headquarters *buildings* (and presumably to files, computers, and communications)" (emphasis added), never with a hint of irony. John A. Warden III, "Employing Air Power in the Twenty--first Century," in *The Future of Air Power in the Aftermath of the Gulf War*, 70.

71. *Reaching Globally, Reaching Powerfully: The United States Air Force in the Gulf War*, 21. Lockheed, in its promotional brochure about stealth, states that "pilots were informed in advance of certain key rooms within these buildings that should be hit, and the videotape records demonstrate that they did so with astonishing precision." "Stealth: Our Role in the Gulf," *Lockheed Horizons* 3, no. 1 (June 1991): 5. See also "War's New Science," *Newsweek*, 18 February 1991, 38; Philip Caputo, "War Torn," *New York Times Magazine*, 24 February 1991, 34; Michael A. Dornheim, "F--117A Pilots Conduct Precision Bombing in High Threat Environment," *Aviation Week & Space Technology*, 22 April 1991, 51; and *Triumph Without Victory*: *The Unreported History of the Persian Gulf Conflict* (New York: *Times* Books, 1992), 217.