

President George H. W. Bush instructed Gen. H. Norman Schwarzkopf, commander of United States Central Command, to start the war as soon as possible after Jan. 15, 1991. The countdown to Operation Desert Storm began. Americans were apprehensive and Congress was reluctant. The world waited.

Twenty years ago, the idea of a decisive air campaign setting up quick operations on the ground with little loss of life was a far-fetched notion. Stealth, precision, and the advantages of intensive surveillance from air and space were unfamiliar concepts in the ranks of the US military.

The most recent forays of US forces into the Middle East had not been encouraging. In 1980, a special mission failed to rescue US hostages from Iran. The 1983 terrorist bombings of the US Embassy compound in Beirut

and US Marine Corps barracks were also painful memories—nor had the United States committed the full might of its forces in minor engagements in Grenada and Panama.

Operation Desert Storm wiped the slate clean. A new chapter in US military dominance opened on the night of Jan. 17, 1991.

A Historic First

The six-week air war reversed expectations of high casualties and cleared the way for a four-day rout of Iraq's Air Force and Army.

Stealth became a household word. A handful of F-111s, F-117s, and F-15Es permanently raised the bar for precision attack through the routine and effective use of laser guided bombs on targets ranging from hardened communications sites to tanks in the Kuwaiti desert. An armada of A-10s, F-16s, B-52s, and other aircraft flew

more than 43,000 strike sorties attacking Iraqi ground forces. The impact on Iraqi ground forces day after day led Air Force Chief of Staff Gen. Merrill A. McPeak to conclude, "My private conviction is that this is the first time in history that a field army has been defeated by airpower."

Few believed Desert Storm would turn out to be a model air campaign when it started. Although the coalition had spent five months preparing, the largest unknown was how many casualties would result.

"Basically, this is a fairly strong opponent—the world's fourth-largest armed forces and the world's sixth-largest air force," McPeak said. Analysts ranked Iraq's fighting prowess as second only to Israel in the region. The

Two USAF F-15s and a Saudi F-5 form up during a mission in Operation Desert Storm. The aircraft are armed with air-to-air missiles.

DESERT STORM



USAF photo



USAF photo by TSgt. Joe Coleman

The Air Force led the way when Kuwait was freed from its Iraqi occupiers.

By Rebecca Grant

Iraqis had spent plenty of time on the battlefield, too. In eight years of war with Iran, from 1980 to 1988, the Iraqis inflicted upward of 300,000 casualties, bombed Tehran, used chemical weapons, and chased nuclear technology.

Would Iraq use chemical or even biological weapons against the coalition?

“The possibility of mass casualties from chemical weapons was the main reason we had 63 hospitals, two hospital ships, and 18,000 beds ready in the war zone,” according to Schwarzkopf’s count.

Airpower was the main tool for lowering this risk. Air Force leaders successfully argued for airpower to work over Iraq’s military forces before any ground troops attacked. Schwarzkopf ultimately approved a campaign with four phases: three for air alone, one for land forces with air working in support. After gaining air superiority and destroying strategic targets, the air campaign would pick off Iraqi tanks and artillery and hammer frontline divisions, so ground forces could move fast when the attack order came.

Deciding when to start the war was up to Air Force Lt. Gen. Charles A. Horner, the joint force air component commander. Horner organized forces and plans, and now the call on timing to start Operation Desert Storm was his, too. Horner thought first of the F-117s that would be attacking Baghdad and other targets in the heart of Iraq’s air defenses.

“The darker the night, the more survivable they are, so we picked the

Top: Demolished vehicles line Highway 80—the Highway of Death—that leads from Kuwait City to Basra, Iraq. Many Iraqi military personnel commandeered civilian vehicles to flee Kuwait. Left: A hardened aircraft shelter shows heavy damage caused by US and coalition forces during Desert Storm.



USAF photo



time based on when the least amount of moonlight was present, and that's how we picked the 17th," Horner said in a PBS "Frontline" interview. The early morning hours of Jan. 17, 1991, would have the lowest moon phase, and as a result, would be forever linked to the beginning of airpower's most spectacular campaign.

Warning orders went out to flying units before H-Hour. Five months of training in the desert left aircrews on a knife's edge. Airmen assigned missions on the first daily air tasking orders would be facing Iraq's defenses alone in their cockpits or as part of small, tightly knit crews. Only a few senior commanders had combat experience, gained years earlier in Vietnam.

"The wing commander came around and talked to the boys," recalled then-Capt. Michael Isherwood of the countdown to war. "He said there was nothing to be ashamed of if you had the jitters. He said before his first couple of combat missions, he threw up."

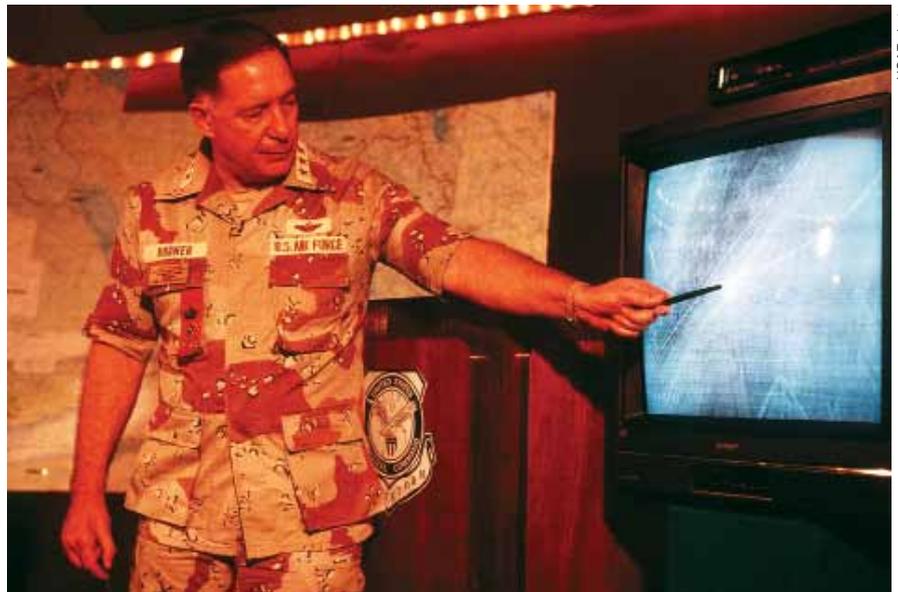
"The first night of the war, we wanted to seize control of the air first and foremost, and we also wanted to introduce shock into their entire system. ... That's why we hit the communications buildings, the sector operation centers, the radars in the airfields," said Horner.

Disabling Iraq's highly modern integrated air defense system was step one. Planners met with executives from the French and Swedish companies that had installed the system. The idea was to saturate and attack it in the right places to overwhelm it. "We knew so much about the Iraqi air defense system, we could have built it ourselves," USAF Brig. Gen. Buster

An F-4G Wild Weasel armed with air-to-surface AGM-88 HARMs heads out on a mission during Desert Storm.

C. Glosson, who commanded fighter forces, later wrote.

Saturation came from an armada of 12-foot-long BQM-74C target drones that flew 300 miles to Baghdad and orbited for 20 minutes. The drones looked so much like aircraft to the



Lt. Gen. Charles Horner, joint force air component commander, points out an image during a media briefing during Desert Storm.



A refueling specialist on a KC-10 transfers fuel to an F-117 during Desert Shield. The F-117 was among the first aircraft to strike targets in Iraq when combat began.

early warning radars that Iraqi air defenders flipped on tracking radars to engage. High-speed anti-radiation missiles fired in barrages by Navy carrier airplanes or targeted at specific radars by USAF F-4Gs picked off active sites. That night, more than 66 HARMs were launched in an hour.

In front of the drone wave, F-117s targeted specific control nodes on the network and other locations, including downtown Baghdad. Some F-117s found their target areas relatively quiet. Others saw dense anti-aircraft fire. “You try to block the [anti-aircraft artillery] out of your mind for a moment and hit the target,” F-117 pilot Maj. Joe Salata later told *Airman Magazine*. “You don’t want to get hit by anti-aircraft flak or by a SAM, but at the same time, you don’t want to go back to the squadron with a miss because you were looking out the window.”

Within hours, it was clear the coalition had the upper hand. “We’d feared losses as high as 75 the first day,” Schwarzkopf remembered. Instead, the tally was just four US aircraft lost, and all F-117s returned safely.

“We wanted them to feel completely overwhelmed,” said Horner, “and I think we achieved that.”

Ahead lay a careful sequence of intensive strikes on air defenses and strategic targets such as suspected nuclear, chemical, or biological weapons sites. Attacks on ground forces had begun and would escalate in Phase 3 as air defenses dwindled and strategic target objectives could be crossed off the master list.

Like most air campaigns, it didn’t all go according to plan. After the initial attack, Iraq fired back with Scud attacks on Israel and Saudi Arabia. Army Patriot batteries defended Saudi Arabian ports and airfields. Patriot batteries were soon sent to Israel, but pressure mounted to shut down Scud launches. “We reacted to the pressure by diverting fully one-third of the more than 2,000 combat and support missions scheduled each day for the strategic air campaign to the Scud hunt,” said Schwarzkopf.

Launches trailed off, until the final salvos at the end of the war. It was a sobering lesson in the difficulty of tracking high-priority mobile targets.



An A-10 shows heavy damage caused by an Iraqi surface-to-air missile during Desert Storm.



USAF photo

Royal Saudi Air Force C-130 transports (foreground) and USAF B-52s share the ramp at an airfield during Desert Storm. Even the elite Republican Guard was ground down by the unrelenting air campaign before the ground war began.

so they could hit bioweapons bunkers. The Iraqis saw the gargantuan radar signature of the tankers and waited. Twenty-seven minutes after refueling ended, they unleashed a barrage of anti-aircraft guns and surface-to-air missiles over Baghdad. Fortunately, the F-117s were nowhere near the capital. They were far north, as the bioweapons bunkers were near Mosul.

Another sortie had a package of 48 F-16s flying in to level the Baghdad nuclear research center, in dangerous airspace. Planners assigned F-4G Wild Weasels to fend off SAMs, but the plan unraveled. Tanker match-ups ran late, commanders made split decisions, and 12 of the F-16s ended up flying to the target alone. Two were lost to SAMs.

Strategic strikes would ultimately consume 23,455 sorties—and still account for only 34 percent of strike sorties in Desert Storm. The culminating goal of the air campaign as structured by Schwarzkopf was to destroy 50 percent of Iraqi tanks, armored personnel carriers, and artillery lined up on the Kuwait border before the coalition attacked on the ground. Schwarzkopf knew on paper his coalition was outgunned. Some 4,700 Iraqi tanks faced 3,500 coalition tanks. “We were outnumbered as a minimum three-to-two as far as troops were concerned,” he added. The Iraqis also had more artillery pieces. “We had to come up with some way to make up the difference,” he later wrote.

“It was imperative that air knock out as much of this armor as possible, ...

as the alternative was to let 20-year-olds in tanks go head-to-head,” said Isherwood, an A-10 pilot and weapons officer.

A grid based on the Saudi Arabian air defense sectors was slapped over the Iraqi units in Kuwait. Each grid square became known as a kill box. Aircrews were assigned the same box over and over again. As the A-10 pilots knew, Iraqi forces still had air defense weapons. To cope with them, Horner layered SAM-killing F-4G Wild Weasels along with active electronic suppression aircraft and USAF’s whole suite of signals intelligence.

A Walkover Promise

A surprise first test of airpower against maneuvering forces came when Iraq launched an attack on the evacuated Saudi border town of Khafji. JSTARS was still a prototype aircraft, but its powerful radar spotted the movement of divisions from Iraq’s III Corps. Air planners diverted the first aircraft within 20 minutes. “Every time Iraqi vehicles began to march south, A-10s, F/A-18s, or even the odd Pave Tack F-111 or F-15E would show up, and all hell would break loose,” Horner wrote later. Airpower stopped Iraqi forces at Khafji with just 267 sorties across the six Khafji kill boxes.

Still, the effort was an intense one. An AC-130 gunship struck targets through the night of Jan. 30 to 31. Dawn approached and the AWACS controller suggested the gunship break off and head home. “I can’t go right

now, I have too many targets left on the road,” the pilot responded. Thirty seconds later, the Iraqis “fired a heat-seeking anti-aircraft missile into the AC-130’s port engine,” said Horner. It crashed into the gulf, killing the crew of 14.

Phase 4—the ground war—was due to begin between Feb. 10 and Feb. 20, 1991, and Schwarzkopf was waiting for damage assessments to move closer to the 50 percent attrition goal. Ascertaining the impact of battlefield strikes was one of the most tangled issues in Desert Storm. On Feb. 9, Horner briefed Schwarzkopf, Chairman of the Joint Chiefs of Staff Gen. Colin L. Powell, and others, saying the air campaign would achieve projected Iraqi ground force destruction levels in about 10 more days.

Overhead imagery fixated on strategic strikes in Iraq and often didn’t yield the detail necessary to confirm equipment kills in Kuwait unless parts were strewn widely, prompting second guessing. On Feb. 15, the Defense Intelligence Agency rolled in to demand A-10s henceforth receive only one-third credit for each tank kill. The CIA popped up with its own objections. However, Rear Adm. John M. McConnell, J-2 on the Joint Staff, and Defense Secretary Cheney had seen gun camera tapes of aircraft killing tanks. They accepted CENTCOM’s damage assessment—as did Schwarzkopf.

On the eve of the ground war, CENTCOM reported Iraq’s units were beat down to an average of just 66 percent of their prewar strength. Two days before ground operations, intelligence estimates showed most of the front-line infantry units at below 50 percent capability, while all of the Republican Guard units were between 50 and 75 percent, said *Certain Victory*, a report authored for the US Army by then-Brig. Gen. Robert H. Scales Jr.

Among the Republican Guard divisions, the Tawakalna stood at 57 percent of its prewar combat effectiveness, the Army found. The Medina was at 65 percent and the Hammurabi at 72 percent. The three Republican Guard infantry divisions were around 60 percent combat effectiveness. “The fighting force that invaded Kuwait was not the same as the one facing our troops on the eve of the ground campaign,” Glosson summed up.

Schwarzkopf started the ground attack on Feb. 24, 1991. Rain, drizzle, fog, and mud did not hamper the offensive.

“The Air Force did deliver on its promise to make any ground offensive a walkover,” Michael R. Gordon and Bernard E. Trainor later wrote. “The ground war was won in four days, but it was preceded by five weeks of bombing.”

Schwarzkopf still hoped to destroy the Republican Guard, but then came an error allowing many to escape. Horner walked into the command post after a few hours’ sleep late on the morning of Feb. 27. He noticed the fire support coordination lines for XVIII Airborne Corps were set far ahead of the advance of those units. “To this day, I don’t know why anyone wanted the FSCL so far north,” said Horner.

For 17 hours, air strikes on the Republican Guard slowed to a crawl as pilots operated under tight restrictions. Instead of making room for a fast advance, the premature move limited the air component to strikes under direct control of forward air controllers. Suddenly the Republican Guard got a break from the kill box tempo. Horner swiftly brought this to Schwarzkopf’s attention and got the lines moved.

Within hours of removing the FSCL restriction, there was pressure from Washington to wrap up Operation Desert Storm. Iraq’s forces were out of Kuwait. Powell told the President they were “within the window of success” and counseled against being seen to be “killing for the sake of killing.” Bush ultimately decided to announce a cease-fire to take effect at 5:00 a.m. Riyadh time on Feb. 28.

The cease-fire sealed Kuwait’s liberation. It also restricted Iraq’s military to operations north of the 33rd parallel and set up zones where the Iraqi Air Force could not fly. US and coalition fighters would patrol the no-fly zones to enforce a UN mandate.

The coalition achieved a military victory of stunning proportions. It outperformed all prewar hopes for swiftness and low casualties. Unity of command for airpower was now a proven point.

Air planners lamented the incomplete destruction of strategic target sets, especially those linked to weapons of mass destruction. But the campaign damaged the most threatening of Iraq’s capabilities. “Had the Persian Gulf War not occurred, Iraq could have produced its first nuclear weapon in early 1993,” estimated a postwar DIA report.

Desert Storm left USAF with a new set of priorities.



Gen. Norman Schwarzkopf (center) congratulates members of the 24th Infantry Division on a job well done. Maj. Gen. Barry McCaffrey (right) was the division commander.

“Every major turn in the history of warfare has come from the introduction of shock and surprise” in some new manner or form, Gen. Ronald R. Fogleman later said of Operation Desert Storm.

Lessons Learned

Precision became the new minimum standard for airpower. The authors of the *Gulf War Airpower Survey* later compared 12 sorties flown by F-117s and F-111Fs with laser guided bombs to 12 sorties flown by F-111Es delivering ordinary, unguided Mk 82 500-pound bombs. The nonprecision attackers delivered 168 bombs against just two targets: a radio transmitter and an air defense sector operations center. In contrast, the precision attacks used 28 bombs against 26 targets. The differential of 13-to-one was “better than an order of magnitude difference,” said the survey. Hundreds of older aircraft—including the tank-plinking F-111s—were retired to make way for precision fighters and investments in stealth.

Space operations earned a place in integrated combat operations. Horner, in fact, earned a fourth star and went on to lead Air Force Space Command.

Mobility proved critical, too. A year after Desert Storm, the stand-up of Air Mobility Command put tankers and airlifters together for the first time, to fine-tune global operations. The Air Force redoubled its commitment to the

new C-17 and nursed it through final developmental problems, all to ensure rapid deployment capability.

In time, a whole generation of airmen learned expeditionary operations and no-fly zone enforcement as a way of life.

They would call on this experience 12 years later, at the onset of Operation Iraqi Freedom, for Iraq still belonged to Saddam. The unstated hope that Desert Storm might push Saddam out of power never materialized.

One Middle East expert, Zalmay Khalilzad, wrote in a Pentagon memo, “Iraqi nationalists in the armed forces might see the fate of their country at risk because of his reckless ambition and might move against Saddam.”

“We were all convinced the Kurds and Shiites would overthrow Saddam the day this was over, if the coalition made him weak enough,” Glosson acknowledged. “I bought into that ... and we were all wrong.”

The Iraqi dictator never fell within coalition crosshairs. The air commanders never felt they had good intelligence on the Iraqi dictator’s location.

A few days after Desert Storm ended, President Bush told an interviewer: “To be very honest with you, I haven’t yet felt this wonderfully euphoric feeling that many of the American people feel. ... You mentioned World War II. There was a definitive end to that conflict. And now we have Saddam Hussein still there.” ■

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