

An aerial photograph of a desert landscape, likely a military airfield or base. The terrain is sandy and flat, with some tracks and structures visible. In the lower right, several military aircraft are parked on the tarmac. The sky is clear and blue. The title 'Statistics From the Storm' is overlaid on the top left in large, bold, black and white text.

Statistics From the Storm

Ever since it ended, the 1991 Persian Gulf War has been the focus of intense controversy.

Claims and counterclaims have obscured many fundamental facts of the air campaign—what really happened, who did what, and what airpower actually achieved. The charts on the following pages provide some of the facts about Desert Storm.

Data on these pages are drawn from several official and unofficial studies. The two principal sources are Gulf War Air Power Survey, Eliot A. Cohen, et al, USAF, Washington, 1993; and Airpower in the Gulf, James P. Coyne, the Aerospace Education Foundation, Arlington, Va., 1992. Also consulted were studies from the US Air Force, Department of Defense, and Congress.



USAF photo by Paul H. Berry



This F-15D from the 1st Tactical Fighter Wing, Langley AFB, Va., was among the first US forces to arrive in the Persian Gulf after Iraq invaded Kuwait.

Flight Operations Summary

■ USAF's in-theater fighter, bomber, and attack aircraft numbered 693 at the height of the war, or 58 percent of US in-theater air assets. They flew 38,000 wartime sorties.

■ USAF aircraft dropped nearly 160,000 munitions on Iraqi targets, 72 percent of the US forces total.

■ Air Force aircraft dropped 91 percent of all precision bombs and 96 percent of precision missiles used in the war.

■ Air Force B-52 bombers flew 1,624 combat missions and dropped 72,000 bombs, or 26,000 tons of ordnance.

■ Before the ground battle began, the USAF-led air campaign against Iraqi ground forces destroyed 1,688 battle tanks (39 percent of total), 929 armored personnel carriers (32 percent), and 1,452 artillery tubes (47 percent).

■ USAF combat support aircraft numbered 487 at the height of the war, 54 percent of the US support assets in-theater.

■ Air Force C-5, C-141, KC-10, and Civil Reserve Air Fleet lifters flew 14,000 long-range missions to the Gulf, delivering some 539,000 tons of cargo and nearly 500,000 troops and other passengers

■ KC-10 and KC-135 tankers flew 17,000 sorties and conducted 52,000 aerial refuelings, off loading 800 million pounds of fuel.

■ Air Force Special Operations Forces aircraft flew 830 missions.

■ During Desert Storm, C-130 tactical transports flew nearly 14,000 sorties, including many dedicated to the redeployment westward of Army forces.

Chronology

1990

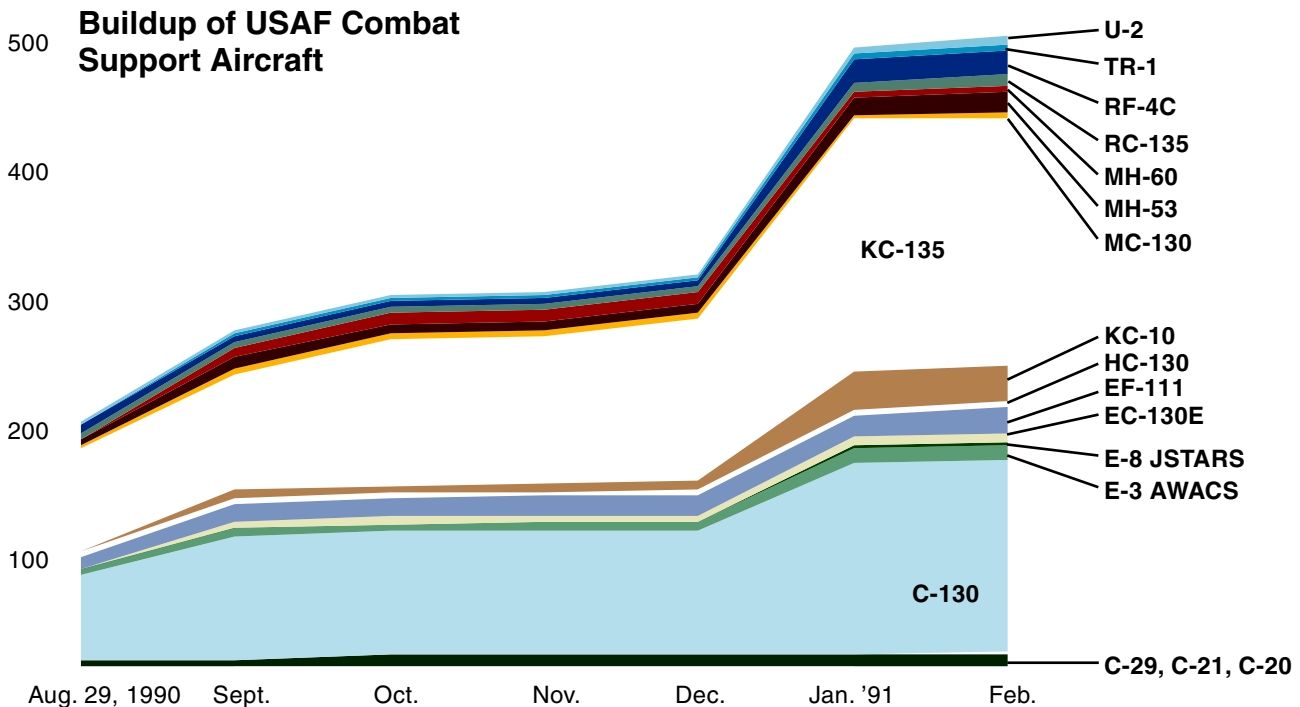
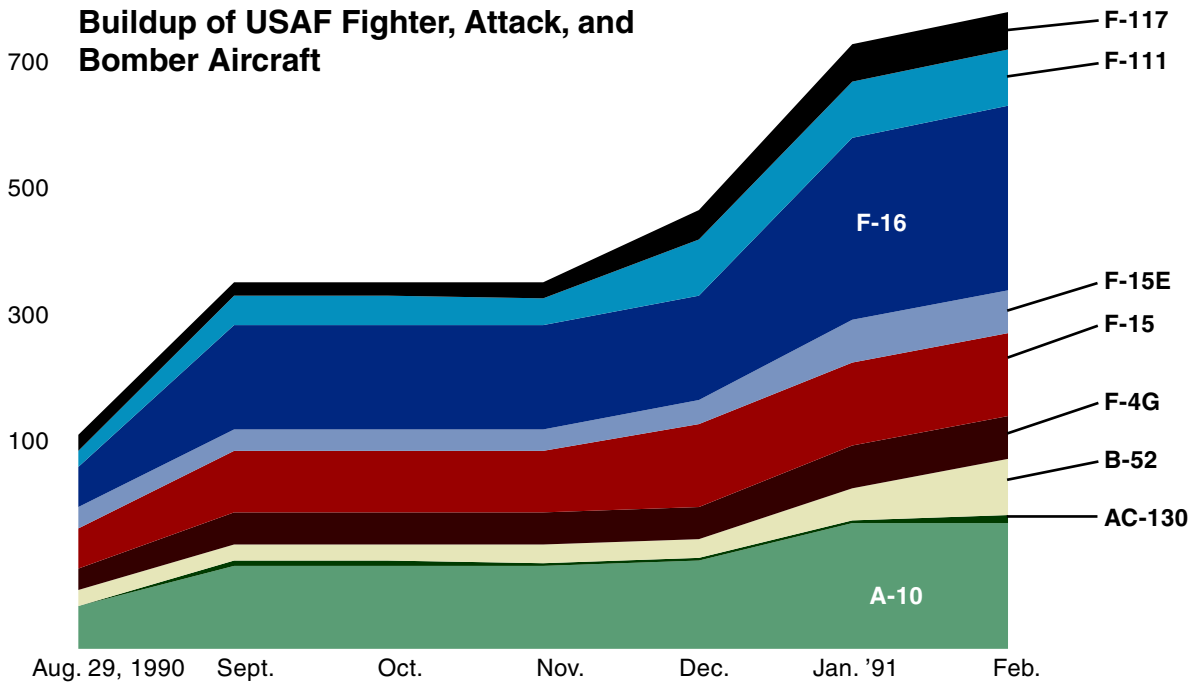
- Aug. 2.** Iraq invades Kuwait.
- Aug. 6.** King Fahd gives permission to base US forces in Saudi Arabia.
- Aug. 7.** USAF F-15 squadrons depart for Gulf. USS *Independence* battle group arrives in Gulf of Oman, south of Persian Gulf.
- Aug. 8.** F-15s from 1st TFW and elements of 82d Airborne Division arrive.
- Nov. 8.** US sends 200,000 more troops for "offensive option."
- Nov. 29.** UN authorizes force to eject Iraq from Kuwait.
- Dec. 29.** First ANG fighter unit arrives in Gulf.

1991

- Jan. 12.** Congress approves offensive use of US troops.
- Jan. 15.** UN deadline for Iraqi withdrawal passes.
- Jan. 17.** D-Day. Coalition warplanes strike massive blow against numerous Iraqi targets.
- Jan. 18.** Iraq launches Scuds at Israel, Saudi Arabia.
- Jan. 25.** USAF opens attacks on Iraqi aircraft shelters.
- Jan. 26.** Iraqi aircraft begin fleeing to Iran.
- Jan. 29–31.** Airpower destroys Iraqi force in Battle of Khafji.
- Feb. 24.** G-Day. Start of 100-hour ground battle in Kuwait, Iraq.
- Feb. 26.** Fleeing Iraqi forces blown to pieces by airpower on the "Highway of Death."
- Feb. 28.** Cease-fire becomes effective at 8 a.m. (Kuwait time).

Preparation for War

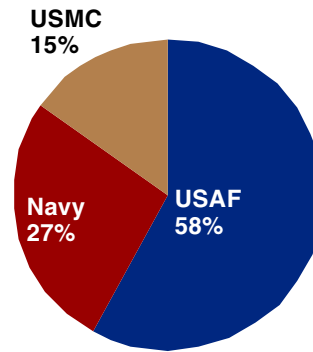
After President Bush gave the "go" order, USAF's presence in the Gulf swelled to epic proportions. USAF, at the war's height, provided 58% of US combat aircraft and 54% of support aircraft.



US Air Order of Battle: Fighter, Attack, Bomber Aircraft

As of Feb. 1, 1991

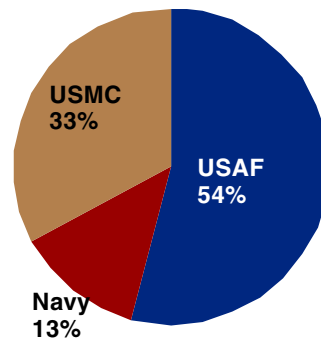
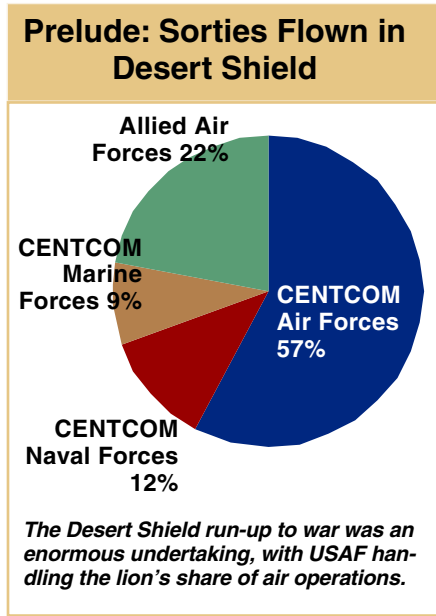
Service	Aircraft	Type	Number	Share
USAF	F-15	Fighter	96	58%
	F-16	Fighter/attack	212	
	F-4G	Fighter/attack	49	
	A-10	Attack	144	
	AC-130	Attack	2	
	F-15E	Fighter/bomber	48	
	F-111F	Fighter/bomber	64	
	F-117A	Fighter/bomber	42	
	B-52	Bomber	36	
	Total USAF			
Navy	F-14	Fighter	109	27%
	F/A-18	Fighter/attack	89	
	A-7E	Fighter/attack	24	
	A-6E	Fighter/bomber	96	
Total Navy			318	
USMC	F/A-18	Fighter/attack	78	15%
	AV-8B	Attack	84	
	A-6	Fighter/bomber	20	
Total USMC			182	
Total US Combat Aircraft			1,193	100%



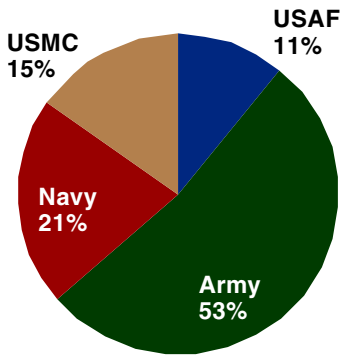
US Air Order of Battle: Combat Support Aircraft

As of Feb. 1, 1991

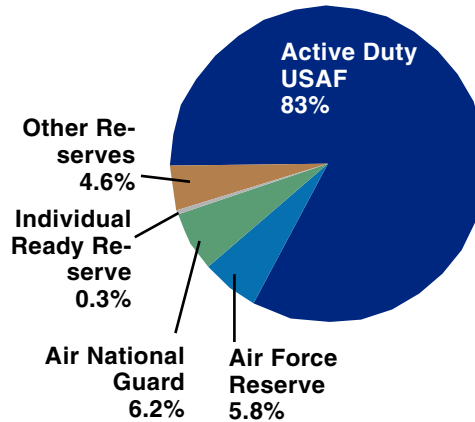
Service	Aircraft	Type	Number	Share		
USAF	TR-1A	Reconnaissance	4	54%		
	U-2	Reconnaissance	5			
	RF-4C	Reconnaissance	18			
	RC-135	Reconnaissance	7			
	E-3 AWACS	Surveillance	11			
	E-8 JSTARS	Surveillance	2			
	EC-135	Electronic warfare	2			
	EF-111	Electronic warfare	18			
	KC-10	Aerial refueling	30			
	KC-135	Aerial refueling	194			
	C-20/-21/-29	Air transport	9			
	C-130	Air transport	149			
	HC-130	Special operations	4			
	EC-130E	ABCCC	6			
	EC-130	Special operations	2			
	EC-130H	Electronic warfare	5			
	MC-130	Special operations	4			
	MH-53	Special operations	13			
	MH-60	Special operations	4			
	Total USAF				487	
	Navy	E-2	Surveillance		29	13%
		EA-6	Electronic warfare		27	
		KA-6	Aerial refueling		16	
C-2		Air transport	2			
S-3		Reconnaissance	43			
Total Navy			117			
USMC	OV-10	Surveillance	19	33%		
	EA-6	Electronic warfare	12			
	KC-130	Aerial refueling	15			
	UH-1	Utility	50			
	CH-46	Air transport	120			
	CH-53D	Air transport	29			
	CH-53E	Air transport	48			
Total USMC			293			
Total US Combat Support Aircraft			897			



US Active Duty Troops Deployed to Gulf



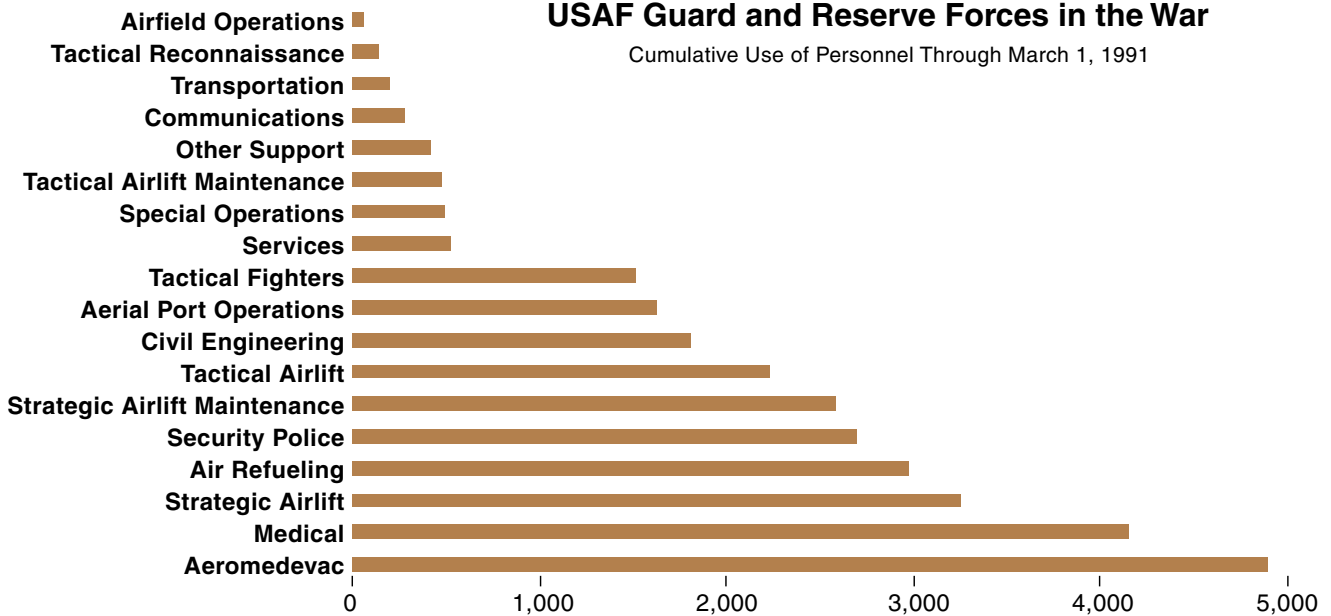
Active, Guard, Reserve Forces Deployed to Gulf



The Gulf War was the first conflict of the Total Force era. Troops from USAF's reserve components comprised 17% of its deployed wartime force, not counting many reservists who remained in the US. Some 30,000 members of the Air National Guard and Air Force Reserve handled a wide variety of critical missions at one time or another during Desert Shield and Desert Storm, as seen in the graph below.

USAF Guard and Reserve Forces in the War

Cumulative Use of Personnel Through March 1, 1991



Elements of the Strategic Airlift

USAF Long-Range Airlift Force Structure in Late 1990

Aircraft	Mission	USAF	AFR	ANG	Total
C-5	Long-range airlift	83	32	12	127
C-9	Aeromedevac	23	0	0	23
C-135	Long-range airlift	12	0	0	12
C-141	Long-range airlift	254	8	8	270
KC-10	Aerial refueling	59	0	0	59
KC-135	Aerial refueling	496	30	116	642
Total aircraft		927	70	136	1,135

Virtually all USAF airlifters and tankers got into the act, working overtime everywhere to rush forces to the Gulf and keep them supplied.

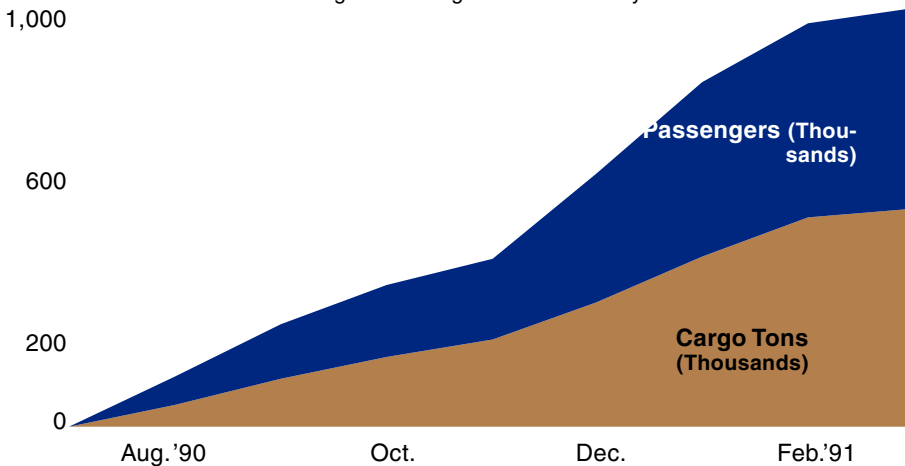
Upwards of 80% of each type committed to Desert Shield and Desert Storm
Does not include Civil Reserve Air Fleet aircraft

Air Mobility Effort

By mid-August 1990, 93% of USAF's C-5s, 73% of its C-141s, and many Civil Reserve Air Fleet aircraft were "flying the pipeline" from the US to the Gulf, supported by KC-10 and KC-135 tankers. All told, the long-range air mobility team delivered about 539,000 tons of cargo and nearly 500,000 passengers.

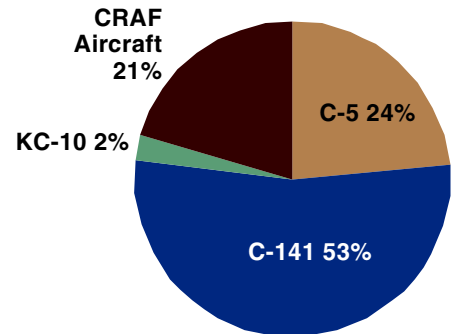
The Aluminum Bridge

Strategic Airlift: August 1990–February 1991



Dividing Up Strategic Airlift

Percent of Missions



Tankers Deployed at Peak of the War

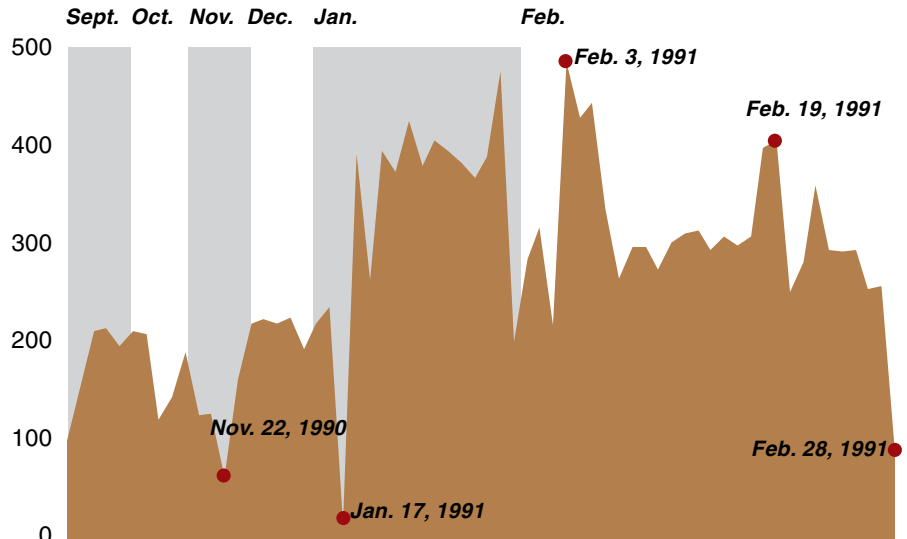
Type	In the AOR	In Support	Total	% of Type
KC-10	29	17	46	81
KC-135A	36	25	61	34
KC-135Q	26	3	29	54
KC-135E	66	15	81	48
KC-135R	65	26	91	45
Total	222	86	308	45

The Tankers of Desert Storm

Aircraft Type	Sorties	Hours	Refuelings	Pounds
KC-10	3,278	16,717	10,915	283.6 million
KC-135A/R/Q	9,897	34,635	27,390	353.0 million
KC-135E	3,690	14,886	13,391	164.1 million
Total	16,865	66,238	51,696	800.7 million

USAF Theater Airlift

C-130s and other tactical lifters played a critical role in the war, with daily sorties spiking after D-Day as a result of resupply and redeployment efforts.



The Air Campaign

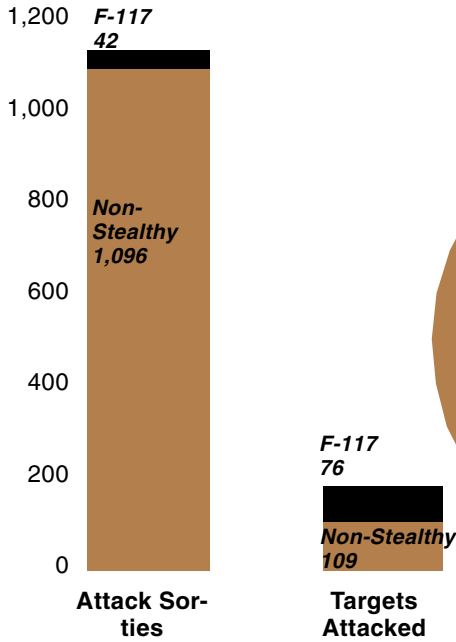
During the first 24 hours of the war, USAF and other coalition aircraft struck critical targets in heavily defended Baghdad and elsewhere. These initial attacks destroyed Iraq's command-and-control system and were so overwhelming that Iraq was unable to mount a coherent response thereafter. Star of opening night was the F-117 fighter, the only stealth aircraft in the US inventory, which struck a disproportionately large number of these key targets.



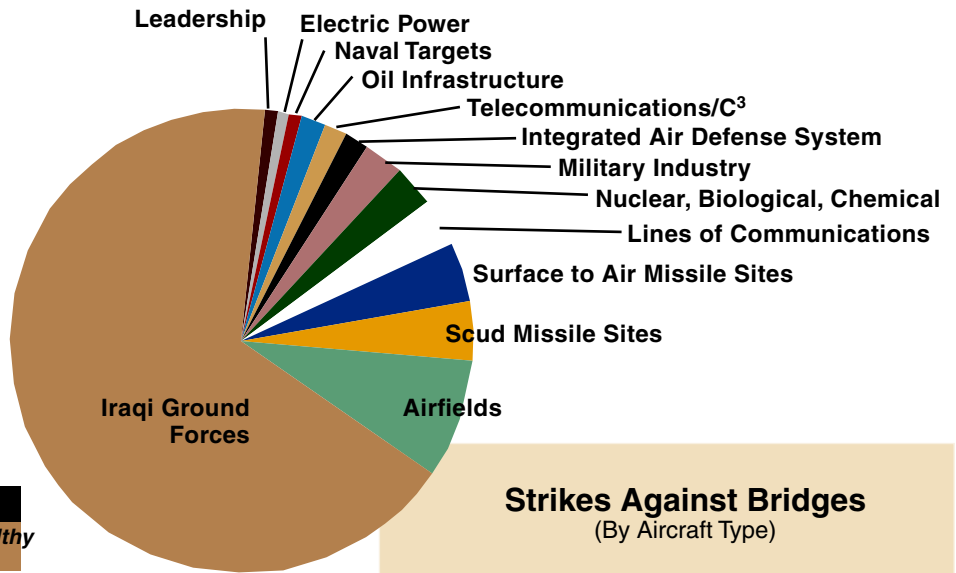
1. Directorate of Military Intelligence
- 2, 5, 8, 13, 34. Telephone switching stations
3. Ministry of Defense national computer complex
4. Electrical transfer station
6. Ministry of Defense headquarters
7. Ashudad highway bridge
9. Railroad yard
10. Muthena airfield (military section)
11. Air Force headquarters
12. Iraqi Intelligence Service
14. Secret Police complex
15. Army storage depot
16. Republican Guard headquarters
17. New presidential palace
18. Electrical power station
19. SRBM assembly factory (Scud)
20. Baath Party headquarters
21. Government conference center
22. Ministry of Industry and Military Production
23. Ministry of Propaganda
24. TV transmitter
- 25, 31. Communications relay stations
26. Jumhuriya highway bridge
27. Government Control Center South
28. Karada highway bridge (14th July Bridge)
29. Presidential palace command center
30. Presidential palace command bunker
32. Secret Police headquarters
33. Iraqi Intelligence Service regional headquarters
35. National Air Defense Operations Center
36. Ad Dawrah oil refinery
37. Electrical power plant

The Key Role of Stealth

(First 24 Hours)

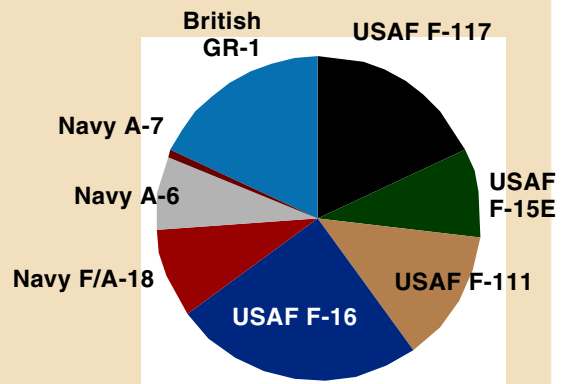


Specific Targets and Strikes



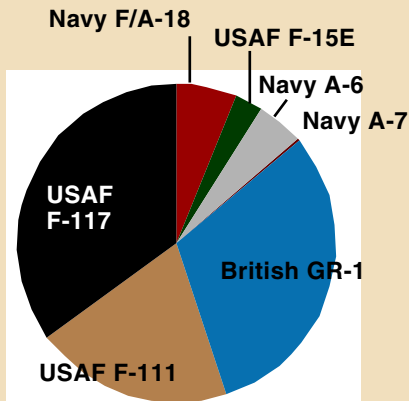
Strikes Against Bridges

(By Aircraft Type)

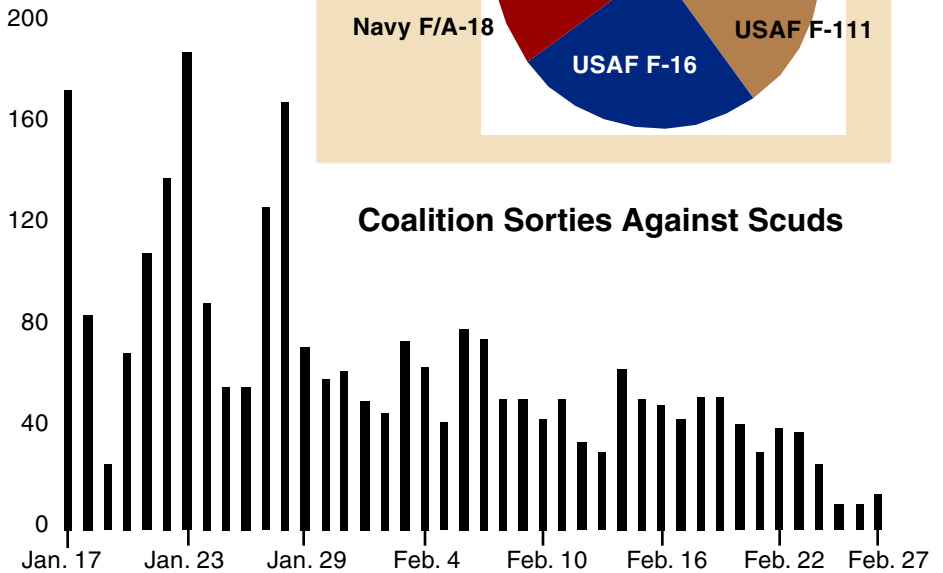


PGM Strikes Against Bridges

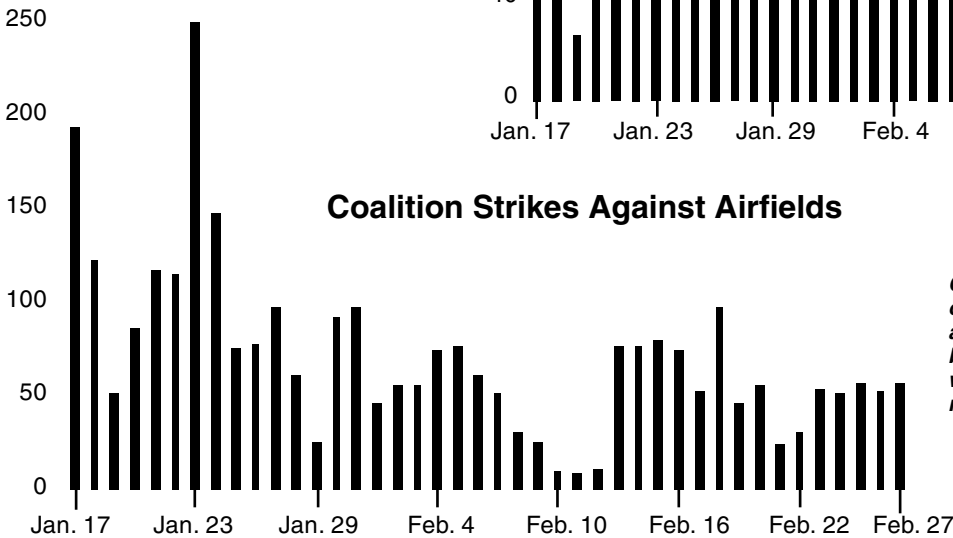
(By Aircraft Type)



Coalition Sorties Against Scuds



Coalition Strikes Against Airfields



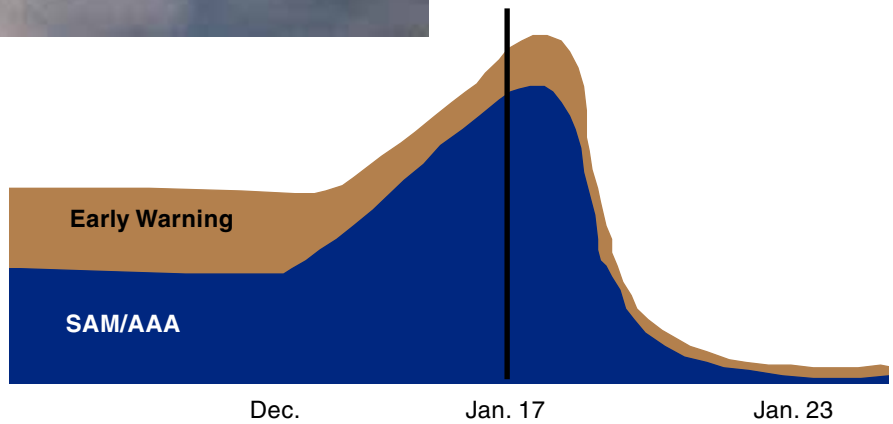
Coalition aircraft flew thousands of missions against Scud missiles, airfields, and bridges—especially bridges on Baghdad-to-Kuwait highways and railways, which were vital to resupplying the Iraqi field army.

Results



F-4G Wild Weasels, like this one from Spangdahlem AB, Germany, zeroed in on SAM guidance radars, and other aircraft hit early warning systems. Iraqis quickly learned to turn off radars, which virtually blinded the enemy force.

Iraqi Radar Activity



At left is the result of a USAF Wild Weasel attack against an Iraqi SA-2 SAM launcher.



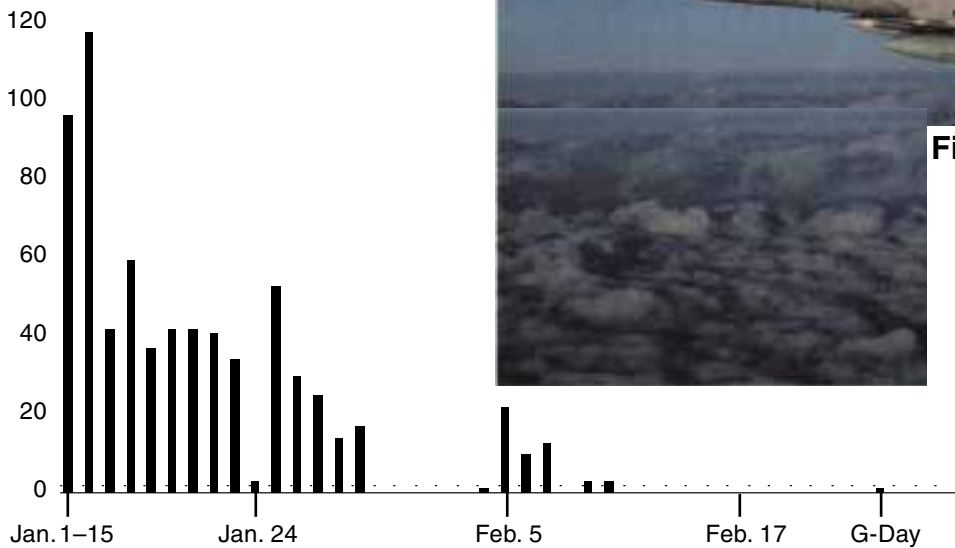
This SU-25 "Frogfoot" ground attack aircraft apparently was "dropped" just as it was taxiing.

The Destruction of Iraqi Airpower

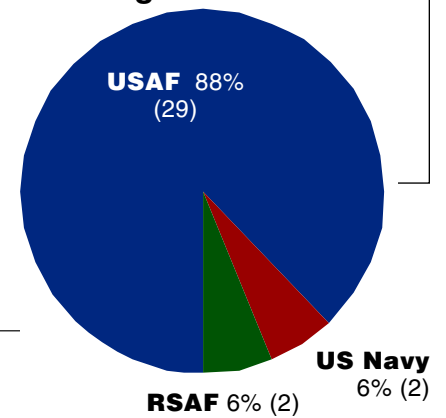
Iraqi Fixed-Wing Inventory as of Jan. 10, 1991	724
Iraqi Aircraft Lost or Destroyed by Feb. 28, 1991	408
Shot down.....	33
Destroyed in the open.....	113
Destroyed in shelters/bunkers.....	141
Fled to Iran.....	121
Iraqi Fixed-Wing Aircraft Left at War's End	316

The Iraqi air force never really got off the ground after the first day of battle, when it took heavy losses. It tried to ride out the war in hardened shelters, but coalition aircraft began attacking Iraqis in their bunkers. Soon, the Iraqi air force "flushed" to Iran and ceased to be a factor.

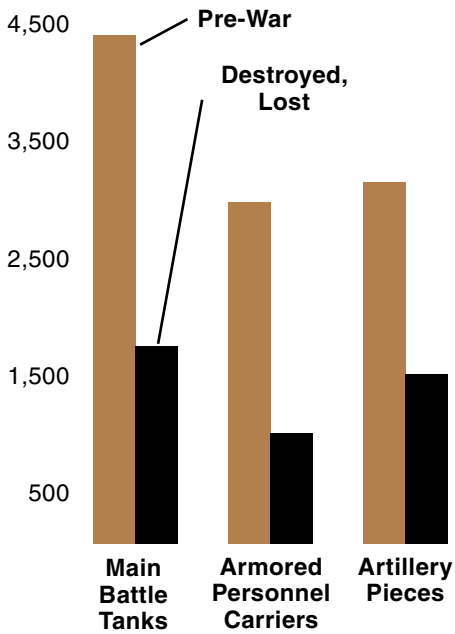
Iraqi Flight Activity



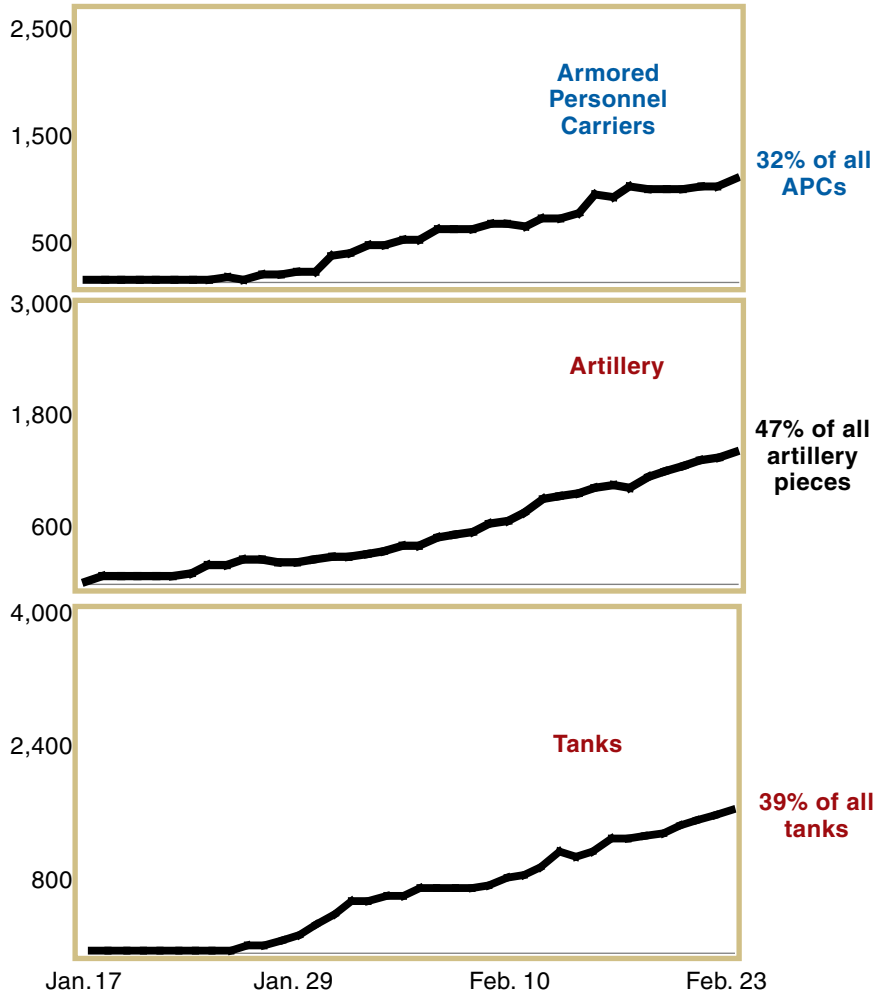
Fixed Wing Aerial Victories



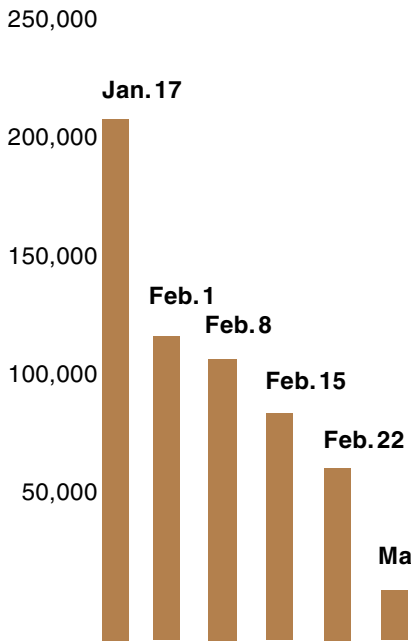
Destruction of Iraqi Ground Forces From the Air



Steady Attrition of Iraqi Land Power



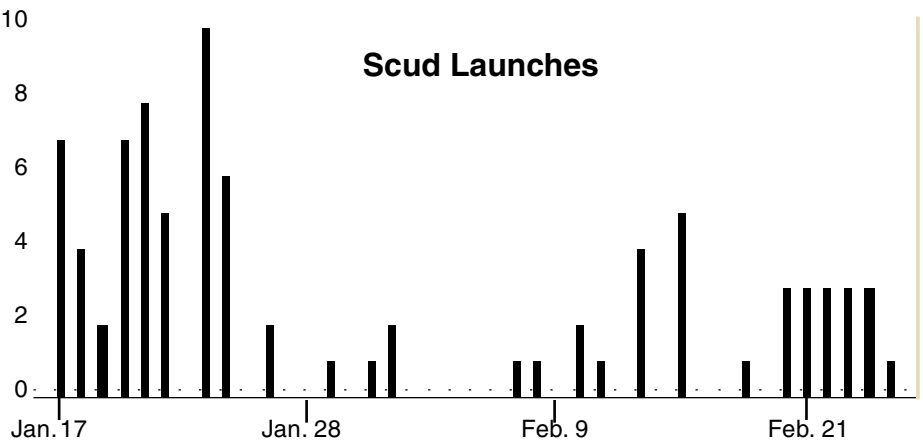
Choking Off Highways (Metric Tons per Day)



Attacks from the air steadily constricted the capacity of the main supply route to Iraq's field army in Kuwait.

Around the clock, USAF-led coalition air forces pounded Iraqi armor, artillery, infantry vehicles, the Republican Guard, logistics installations, command posts, and command-and-control facilities. Before the ground battle began on Feb. 24, casualties and desertions had reduced Iraqi troop strength by at least half. F-111Fs and F-15Es using laser-guided bombs made smoking ruins of Iraqi tanks, as did F-16s and A-10s, using Maverick missiles.

Scud Launches

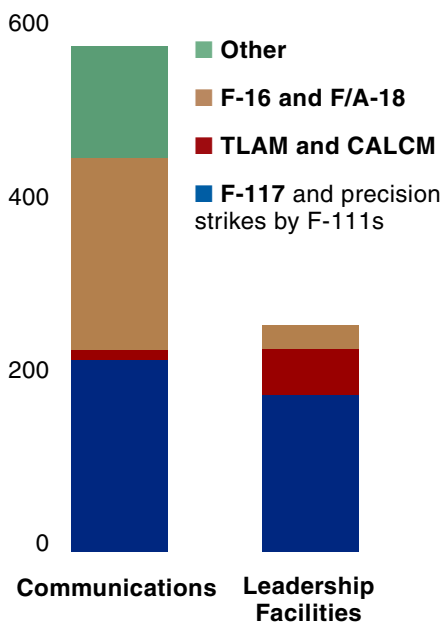


Scud hunting did not eliminate the problem, but it reduced, suppressed, and degraded Iraq's terror weapon. As the war wore on, harried Iraqi missile forces launched fewer missiles, with less accuracy.

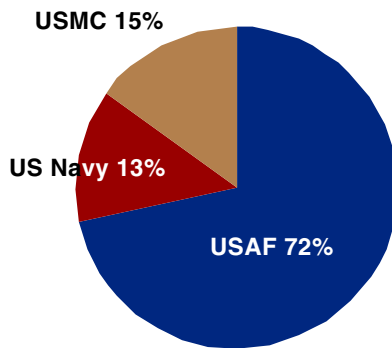
Some Comparisons

Desert Storm's 38-day air campaign and the four-day ground-and-air campaign that followed it showcased the capabilities of USAF. Its crews flew the majority of sorties, dropped nearly three-quarters of all air-to-ground munitions (and more than 90 percent of precision weapons), and played the major role in decapitating the Iraqi war machine with attacks on leadership and communications targets.

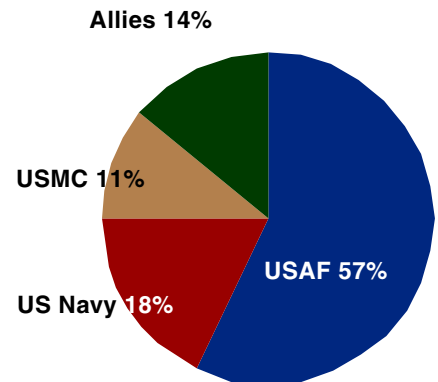
Decapitation Strikes



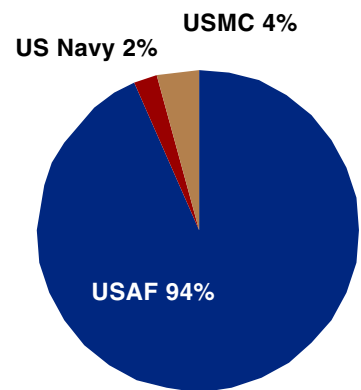
Total Munitions Dropped



Sorties Flown

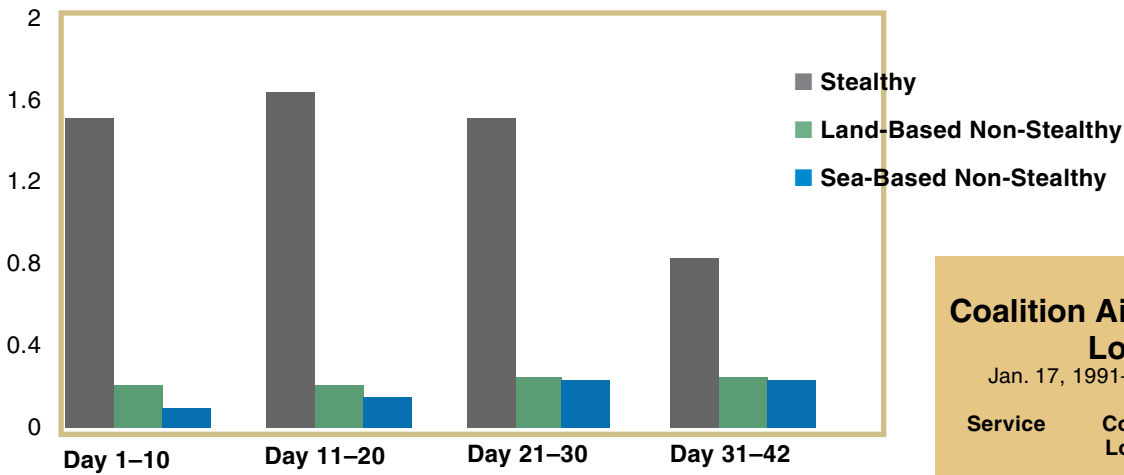


Total PGMs Dropped



An Iraqi command bunker hit by a precision guided munition.

Ratio of Targets Per Aircraft Sortie



F-117 stealth aircraft, the key to the opening moves of the war, played a major role throughout the conflict.

Coalition Aircraft Combat Losses

Jan. 17, 1991–Feb. 28, 1991

Service	Combat Losses	% of Losses
USAF	14	36.8%
US Navy	6	15.8%
USMC	7	18.4%
Saudi Arabia	2	5.3%
Britain	7	18.4%
Italy	1	2.6%
Kuwait	1	2.6%
Total Forces	38	100%

Although it was a short war, 21 US personnel were briefly held as Prisoners of War. At left, USAF Col. David W. Eberly, the ranking POW, is greeted by well wishers on his release. He and Maj. Thomas E. Griffith were captured when their F-15E was shot down on Jan. 19.



A1C Emett Hamilton directs F-117 pilot Lt. Col. Doug Stewart as he taxis the stealth fighter in Southwest Asia during a deployment for Southern Watch, in which US and coalition forces have patrolled southern Iraq since the end of Desert Storm. Both men are from the 49th Fighter Wing at Holloman AFB, N.M.



USAF photo by TSgt. G.M. Kobashigawa