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JOURNAL OF THE AIR FORCE ASSOCIATION

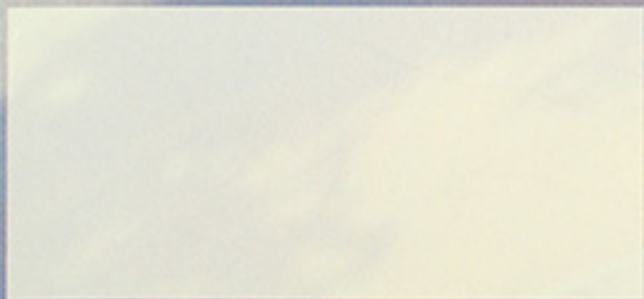
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About the cover: An F-117 from Holloman AFB, N.M., heads off to the Persian Gulf on deployment. See "Airpower in the Gulf 10 Years Later," p. 22. Photo by Erik Hildebrandt.

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By John T. Correll, Editor in Chief

In the Wake of the Storm

THE Gulf War is officially dated from Aug. 2, 1990, when Iraq invaded and occupied Kuwait, but it was 10 years ago this month that the main event, Operation Desert Storm, began.

In the early morning hours of Jan. 17, 1991, hundreds of coalition aircraft streaked across the border and struck targets all over Iraq. By daybreak, Iraq's command and control network no longer existed. Within days, the Iraqi air force, once the world's sixth largest, was out of business. The airplanes that were not destroyed had fled to sanctuary in Iran.

For 38 days, airpower hammered Iraq. By late February, the capability of dictator Saddam Hussein to make war lay in shambles. Almost half of his armor had been destroyed outright. Between 50 and 75 percent of his troops in the first two echelons were either casualties or deserters. Iraqi tanks had taken the initiative but once, at the Battle of Khafji, where they were shot to pieces by airpower.

On Feb. 24, coalition ground troops, supported by airpower, surged into Kuwait and in four days drove out the staggering Iraqis, inflicting still more damage on them in the "Mother of All Retreats."

The coalition called off the war Feb. 28, and Iraq agreed to accept the UN's terms for a cease-fire.

With the 10th anniversary of the Gulf War now upon us, all manner of analysts are looking back and asking what it all meant. There are two answers to that. One is military and the other is political.

From the military perspective, Desert Storm was a turning point.

There was none of the gradualism and lack of commitment that had marked our failed experience in Vietnam. From the first night on, the Gulf War was pursued with determination and focus.

In addition, the Gulf War brought four important changes to the way strategists must think about the conduct of war.

- It established the expectation that wars would be won quickly, decisively, and with few casualties. That may not always be the case, but in future conflicts, the nation will exhaust the possibility before resorting to the traditional clash of force on force.

It was not obvious ahead of time that the Gulf War would be a rout.

The Gulf War was a turning point in modern military history.

Up to 20,000 US casualties were anticipated. The actual total was 613. The difference was not that Iraq was a pushover, but rather in how the war was fought.

- The Gulf War told us a "revolution in military affairs" had taken place. Three factors—precision strike, stealth, and information technology—had redefined the concept of the attack.

The stealthy F-117A flew only two percent of combat sorties, but attacked more than 40 percent of the strategic targets. As the world watched on television, a fighter rolled in on the Iraqi Defense Ministry in Baghdad and put a bomb neatly down the air shaft.

Never before had such precise destruction rained from the skies. Until recently, it had not been possible.

- Desert Storm introduced "parallel warfare," in which the enemy is hit everywhere at once, making it virtually impossible for him to adjust, adapt, or mount a counteroffensive. In the Gulf War, the coalition struck 150 individual targets the first day. By contrast, Eighth Air Force in World War II hit only 50 target sets in all of 1943.

- The Gulf War changed the relationship of airpower and ground power. In previous wars, ground

power had been central with airpower in support. In the Gulf, it was airpower that was dominant and decisive.

Political judgments at the 10-year point are less clear cut. In 1991, the opportunity was open to destroy the last vestiges of Iraqi military power and impose an unconditional surrender. The coalition, however, decided that its mandate was to restore the independence of Kuwait, not to invade Iraq or topple Saddam.

The ensuing political legacy has been a decade of "containment." Through a combination of sanctions, no-fly zones, and other measures—including inspections, while they lasted—Saddam has been kept in his box. He has not yet disrupted the world's oil supply, as it was feared he might do. Nor has he been able to threaten his neighbors.

On the other hand, Saddam is still there, and once again cooking up weapons of mass destruction. Encouraged by support from Russia, France, and several Arab states, he is attempting to throw off UN controls and re-establish himself as a power in the Middle East.

For the last year or so, the White House—which had relied mostly on endless warnings and symbolic actions to deal with Saddam—has preferred to avoid the problem.

The United States, and the world, will eventually have to do something about Saddam, but he is nowhere near the threat or the problem he would have become had not Desert Storm dismantled his capability in 1991.

The military victory was as complete as politics would allow. It ended a string of setbacks that included Vietnam and the "Desert One" fiasco in Iran in 1980. It answered the critics who said the armed forces were wasting money on complicated weapons that wouldn't work. The F-15 fighter and the AWACS radar aircraft, both outstanding performers in the Gulf, had been singled out for abuse.

Properly supported and intelligently employed, the armed forces won the war in a spectacular fashion. ■

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Airlift Issues

"A Clamor for Airlift" [December, p. 24] by John A. Tirpak describes a situation that also was a cause for concern in 1959, when the major provider of airlift was Military Air Transport Service. [The issues in the article] were the same [as] 40 years ago.

In 1959, I was at MATS headquarters. MATS had no airlift jets and was moving most of the troops and equipment by C-54, C-97, C-11B, and C-121. Then, as now, there was a clamor for improved airlift capability so we could support two major wars. I made regular trips from Scott AFB in Illinois to Washington to plead for updated airlifters. I briefed members of the Air Staff and Congress. MATS personnel conducted briefings for community leaders in any city or town where there were military bases.

MATS designed an airlift exercise called Big Slam, which had two goals: One was to show the efficiency with which men and machines could be moved by air. The second and more important was to point out the need for bigger, faster, and more versatile airlifters. Aircraft from the active force and reserve units from all parts of the mainland picked up Army troops from various bases and airlifted them to Puerto Rico, where the Army conducted field exercises. We made sure each aircraft that participated carried one media representative from the town at which the aircraft or the Army troops were based.

I think Big Slam was a success. MATS was renamed Military Airlift Command. The commander was upgraded from three to four stars. MAC began to receive turboprop and pure jet aircraft. More than 40 years have passed and the story hasn't changed. We provide better equipment, with which our men must fight on foreign shores, but we still are short of the airlift to get them there.

Col. Irving H. Breslauer,
USAF (Ret.)
Santa Fe, N.M.

It is not hard to see that with a larger demand for airlift and a dimin-

ishing number of aircraft, we cannot meet the needs of all services. The pressure placed on our aircraft and aircrews is only growing as we try to meet the worldwide peacekeeping commitment which has developed over the past few years.

To add to the workload placed on our airlift force are the demands of the White House for airlift to support President Clinton's travels. The most recent trip of the President to Vietnam is an example of one of the many which Clinton has made while in office. At a cost of \$63,442,954, this trip also involved 26 C-5s, 33 C-17s, four C-141s, 10 KC-10s, one C-130, plus the usual 89th Airlift Wing aircraft. This seems to me to be an unbelievable number of aircraft required for one short trip.

Perhaps if less of our scarce airlift force were used for Presidential support, we could better meet the needs of our military.

Col. William J. Schwehm,
USAF (Ret.)
Lakewood, Wash.

The Army Ponders Its Future

The article "The Army Ponders Its Future" [November, p. 34] left me with my mouth open. I could not believe the Army is giving up the most powerful armored vehicle in the world for lightly armored vehicles.

After retiring in 1981, I joined the Cadillac Gage Corp. I served as the quality control manager at the Greenville, Ohio, facility where we manufactured the control systems for the M1 and M1A1. I took great pride in the

results achieved in Operation Desert Storm. Our reports were, we were hitting Iraqi tanks at 1,500 meters on the first round.

I also took part when our company competed for the Marine version of the same vehicle that the Army purchased from Canada. That was over 12 years ago. The Army decided it did not want a lightly armored wheeled vehicle. I was also a transportation squadron commander in Vietnam, 1967-68, when we received Cadillac Gage armored cars that were wheeled and that you could put out of action with a [rocket-propelled grenade].

Guys, wake up: We have a winner, stay with it, plan better! Your future plans are absolute nonsense. If I had a son in the Army I would advise him to do an interservice transfer.

Lt. Col. Ray T. Cwikowski,
USAF (Ret.)
Pensacola, Fla.

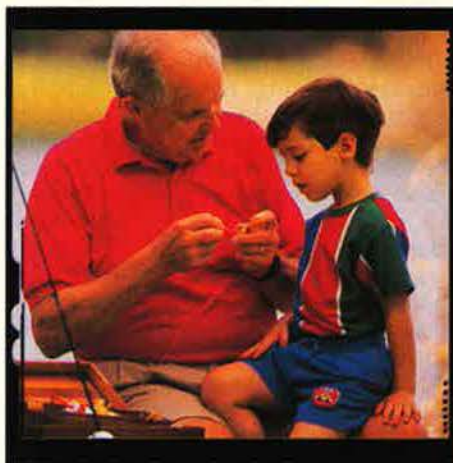
As a former soldier, now an Air Guardsman, I was interested in [this] article. I recall seeing a few other articles about this new direction the Army is taking. Like the others, this one leaves me with questions aimed at the Army and the JCS-DoD leadership. It seems that the Army is seeking a "one size fits all" force structure and plans to transition away from the heavy main battle tank-dominated armored/mechanized brigade.

A medium-weight force might be better for peacekeeping and working in underdeveloped areas like the Balkans, but a heavyweight force will always dominate in desert or plains regions. If the Army were to create a few brigades of medium-weight units, then these could be used for the missions that require their special equipment, resources, and training.

There are many advantages to a strategy of maintaining a large portion of our current force structure intact and only converting a few units to medium weight. First of all, it allows us to have a variety of tools for a variety of contingencies. Second, it allows better forecasting of airlift requirements. With USAF cooperation, we could better tailor our airlift fleet to

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meet a wide variety of contingencies, and it would clearly be in the Army's best interest to help the Air Force lobby for required aircraft. Third, having a limited number of such units would set limits on the number of [military operations other than war] missions that our politicians could drag us into. There would be a much clearer limit on how many missions we could undertake without severely impacting our ability to fight a major war.

Whatever the medium force is that the Army ends up adopting, the Air Force needs to be ready to support it. We can do this by having airlift assets that provide the right capacity per aircraft and right amount of aircraft.

We should also do this by ensuring that we have aircraft that can fly "low and slow" enough to realistically support troops on the ground—ground attack aircraft such as the A-10 and (discontinued, but still highly effective in nations where it is in use) A-37, support aircraft such as the AC-130 series of gunships, and [intelligence] platforms like Joint STARS and [unmanned aerial vehicles]. These may not be the glamorous fighters that our Air Force leaders find so sexy, but they will be lifesavers and war winners for the guys on the ground.

American soldiers deserve to have the best support that we, as an Air Force, can give them. The move to lighter, more deployable forces will almost certainly leave them even more dependent on airpower. It should be a priority of our leaders to make sure we can provide the best possible air support to meet their needs.

SR.A. Joseph Baptist,
Georgia ANG
Robins AFB, Ga.

Red Flag

I have the greatest respect for Walter J. Boyne as a historian, so it is with some reluctance that I write the following. Boyne's "Red Flag" [*November, p. 44.*] describes Red Flag as having "influenced the training of the US Army and Navy air arms." He also says that Moody Suter "knew of studies demonstrating that the majority of combat losses occur during a pilot's first 10 combat missions." While I accept the AFA's mission to promote the US Air Force, I do become concerned when such promotion seems to be at the expense of acknowledging the legitimate contributions of other branches of the military.

In 1968, the US Navy, equally alarmed at the 1-to-1 exchange ratio

during Vietnam aerial combat, tasked Capt. Frank Ault to investigate and come up with some answers for resolving the problem. Ault's report led directly to the formation of the US Navy's Fighter Weapons School, popularly known as Top Gun, in 1972. Navy kill ratios in Vietnam climbed to 12-to-2 in 1972, while Air Force numbers remained disappointingly low.

The unnamed "studies" which Suter consulted undoubtedly included the Navy's Ault report that led to the formation of Top Gun. The Navy's dramatic increase in kill ratio, using the same basic aircraft, the F-4, certainly did not escape the notice of Air Force planners. Three years later in 1975, the Air Force established Red Flag. Certainly given the impressive scope and genuine successes of Red Flag exercises in the past 25 years, there is indeed much to be proud of. But please, give credit where credit is due. The plain fact is that Top Gun created the mold and Red Flag learned the lesson. Leaving all mention of the Navy's foresight and initiative out of the article is wrong. The not-invented-here tone of the article is a slap in the face to naval aviation and hurts the credibility of your outstanding publication.

Hank Caruso,
California, Md.

Unless I missed something in the article, there was no mention of the [Pacific Air Forces'] equivalent of Red Flag, namely the numerous Cope Thunder exercises held at Clark AB, Philippines. The 3rd Tactical Fighter Wing had its own aggressor squadron composed of T-38, and later, F-5E aircraft.

Thomas J. Nees
Tampa, Fla.

I'd like to add a sidebar to the birth of this forward-looking innovation. At the time, I was the director of operational intelligence at [Tactical Air Command] headquarters, with offices just down the hall from [TAC Commander Gen. Robert J.] Dixon. After many intelligence briefings over a period of time elaborating the mammoth size of the Warsaw Pact ground threat in Central Europe, at Dixon's direction we constructed "Big Bertha."

Bertha was a map, approximately 8 feet high and 7 feet across! It was made up of sectional charts of Central Europe, focusing on the Fulda Gap and the areas north, south, and east. Working with our intel analysts, my graphics people literally, by hand, painted on the ground order of battle

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of the Soviet–Warsaw Pact threat: tanks, self-propelled artillery, etc.—all color coded by type and unit of assignment. It took what we called “the mushroom factory” about three months to complete the job.

When they were done, we coated Bertha with a clear preservative and mounted it on a roller to be recessed behind the screen in the general’s command briefing room. To say it was dramatic the first time you saw it would be an understatement. Dixon had wanted something which would spectacularly graphically display the size of the problem faced by allied air-to-ground operations in Europe. He used it to great effect to make his points with visitors and from sitting in on many daily intelligence briefings, I can say it helped formulate his germinating idea for a Red Flag operation and scenario.

In his article, Boyne points out that Red Flag was “initially oriented primarily to air-to-surface training.” I firmly believe Big Bertha played some small part in those early operations. As my analysts and graphics guys wrote on my going-away picture: “They also serve who only live in the mushroom factory.”

Col. Jerry Hughes,
USAF (Ret.)
Kansas City, Mo.

It was wonderful to see the very deserving and well-written tribute to Col. Moody Suter and all his fighter pilot comrades. I was privileged to attend the Air War College Class of 1979 and really lucky to have Moody in my section. Knowing there are many Suterisms—especially among his flying buddies—I have a couple I would like to share.

Many of Moody’s concepts and ideas were developed at the officers clubs wherever fighter pilots would gather, complete with all the hand maneuvers to demonstrate how, as Moody would say, “to cut off their heads and poop down their necks.” Several times at the bar, napkins became briefing aids, and the napkins would eventually make their way home onto Moody’s dresser in his bedroom, with strict instructions to his wife, “Never, under any circumstances, Gail, do we destroy any of these napkins. I will probably need them later.”

Then, after closing time, Moody and his buddies would head for Moody’s house. The napkins would all be brought out and scattered in irregular patterns onto the floor for the many “aha–eureka” solutions about how to fight the enemy in the sky. Some of Moody’s compatriots would swear Red Flag was a grass-

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roots operation, straight out of Moody’s bedroom, off his living room floor, getting polished up and formalized, then taken into Dixon’s offices for final briefing and approval.

A second story I know is true concerned the final briefing to Dixon, when the Red Flag proposal became a reality. Moody had conspired with Mrs. Dixon to secretly go through her scrapbook and obtain an old black-and-white photo of a bellied-in P-38 the good general had survived but seldom spoke about. At the end of the briefing, Moody flashed the incredibly enlarged slide of the beat-up P-38 Lightning on the screen.

Moody said, “If you don’t approve this program, this is likely what our Tactical Air Forces will look like.” Seeing this, Dixon was reported to have shouted, “Your proposed program is

approved, but if I ever see that [expletive] photograph again” If you knew the good general or some of his Dixonisms, you may just get the picture.

Following AWC, I was again pleased to have Suter as my neighbor at Hickam AFB [Hawaii]. Moody spent many evenings in his home teaching my aviation enthusiast son, Mark, all about aircraft. When Mark came home, he was starry-eyed from all the evening excitement of “flying” all those missions with Suter. Moody was Mark’s advisor on how to build an F-15 model with Thunderbird markings, long before they actually flew them in aerial demonstrations.

God bless Moody Suter and his family. I implore all of Moody’s many friends and his family to keep his wonderful spirit alive. As a nonrated guy



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Letters

who always wanted to "be like Moody," I will do my part. Many thanks to Walter J. Boyne for his great article about one of our really superb Air Force officers and fighter pilot heroes.

Col. Ed Johnson,
USAF (Ret.)
Granbury, Tex.

the refueling probe on the A-37Bs, it could have been my last A-37A flight. Steve, unfortunately, was killed in an F-4 midair at Nellis in the early 1970s.

Lt. Col. Vic Grahn,
USAF (Ret.)
Freeport, Fla.

The Other Osprey

I found it interesting that your November article "Edwards Gets Air Force Osprey" [*World*, p. 17] focused solely on the CV-22's role as a special operations platform, rather than pointing out the Osprey's characteristics that make it a possible successor to the Air Force's current Combat Search-and-Rescue aircraft.

The V-22 flies twice as far and twice as fast as a conventional [helicopter]. It also carries twice as much. It's much quieter, more reliable, and more flexible. The one drawback is that the Osprey is more expensive than some of the other options.

The Air Force's Air Combat Command is conducting an analysis of alternatives to determine the best successor to current CSAR aircraft, and there are several options, including a service life extension program to the H-60G SAR helicopter. The analysis of alternatives is designed to decide whether the added capabilities justify the costs.

The overriding issue in the analysis should be whether it still makes sense to use conventional helicopters for CSAR when a much more capable alternative is available. The V-22 is much more compatible with the Air Force's emerging strategy than Cold War helicopters are.

Phillip Thompson
Lexington Institute
Arlington, Va.

Celebration

I sure enjoyed your "Flashback: Something to Celebrate" [*November*, p. 60]. I would like to add a little history to the "RAP" Mobile (call sign of the 604th ACS/SOS).

The idea of the RM was conceived by 1st Lt. Steve Deichelmann, who with a little help from his squadron buddies, built it in late 1968-early 1969. A "surplus" Mule utility vehicle supplied power to a fuselage made of plywood and scrap metal. Smoke canisters popped in the tip tanks generated the colored smoke. I can verify these facts, as I was a classmate of Steve's at [Williams AFB, Ariz.] and one of his 604th's buddies.

While it's over 30 years ago, the memories are still fresh. Except for

More on Air War in Korea

[The entry] dated April 14, 1952, states that the 403rd TCW (Medium) was the first Air Force Reserve wing ordered to active duty. [See "Air War Korea, 1950-53," *October*, p. 36.]

For the record, the 437th TCW, commanded by Col. John Henebry (now retired major general) from Chicago, was called to active duty August 1950 and [became] operational in Japan and Korea in October 1950. [It was] based at Brady Field, Japan.

SMSgt. Winton O. Sanson,
USAF (Ret.)
Dana Point, Calif.

Since there are still letters coming in about the airplanes that were not included, I thought I might as well add another one. A number of my navigator classmates and I flew with the 6166th Weather Flight at Kimpo [AB, South Korea], assigned to the 67th [Tactical Reconnaissance Wing].

Our WB-26s had five distinctive things. We had permanent wing tanks, no guns, a small streamlined tube on the right side of the nose to take wet-dry temperatures, a weather observer, and a radio operator in back to send back the weather reports on [high frequency]. The picture on p. 66 may well be one of our birds. We had about five or six planes of which I only recall one tail number, "Triple Nickel." We flew missions during the day along the bomb line, another up the Yellow Sea at night, and a five- or six-hour one down to the area off Shanghai. We continued to fly the latter after the armistice, probably one of few to do the same thing we did before the war ended.

Maj. Robert L. Etter,
USAF (Ret.)
Pittsburgh

On NATO Again

I want to thank Bill Barry for his comments and wish to add my support to returning our forces from NATO and letting Europe solve its own problems. [See "Letters: On NATO," *November*, p. 9.] I was proud to have served NATO from 1954 to 1956 at Chambley AB, France, and I served in Germany and Spain during Desert Storm. We did our job in NATO. The only danger I see in Europe is the

Europeans themselves. In June 1999, the *Air Force Magazine* article [about] NATO's new strategic concept and challenges [stated] one of what NATO considers a new challenge is the disruption of the flow of natural resources. [See "Aerospace World: NATO Embraces Broad New Security View," p. 20.]

What does that mean? If someone does not like somebody's politics and won't sell them oil or other natural resources, we are going to start bombing some country? In case no one has noticed since election night, this country has enough problems of its own to solve. Humanitarian problems—fine. Send cargo planes with supplies. Peacekeeping—no.

MSgt. B.W. Olds,
USAF (Ret.)
Edmond, Okla.

Misty FACs

It was a nice reminiscence to read "The Misty FACs Return" [p. 64] in the October issue. However, I want to point out a factual error. On p. 68 [the author, Richard] Newman, says that the Misty FACs "shot pictures of the bridge near the village of Cam Lo, near the DMZ, where North Vietnamese tanks streamed into the south in 1972. US commanders wanted to destroy the bridge but couldn't because a downed pilot was hiding nearby."

In fact the "downed pilot" was Lt. Col. Icel "Gene" Hambleton, the navigator and sole survivor of the six-man crew of Bat 21, an EB-66C. He was shot down April 2, 1972. Hambleton was shortly joined by Nail 38 Alpha and Nail 38 Bravo, the crew of an OV-10 Pave Nail. Nail 38 Alpha, the pilot, had the bad luck to be hiding right where the [North Vietnamese Army] gunners wanted to dig a gun pit. He was captured. Nail 38 Bravo, the navigator, evaded capture and was later rescued along with Hambleton. Covey 282 Alpha joined the downed group during the numerous rescue attempts, but he was killed while [trying to] evade [capture].

In addition to those losses, the US Army lost the crew of Blueghost 39, a UH-1 that tried to snatch Hambleton on the afternoon he was shot down. Jolly Green 67 and its crew were also lost during the [search and rescue].

I was in Hambleton's squadron at the time, and I thought I knew a bit about what happened that April. Darrel D. Whitcomb's book, *The Rescue of Bat 21*, told me how much I didn't know, and it gives a pretty good account of the whys and wherefores surrounding the Cam Lo bridge. That was an unforgettable couple of weeks

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for anyone who participated in it. By the way, according to Whitcomb, the bridge was hit on April 14, 12 days after the initial [search and rescue] began.

Lt. Col. Gerald P. Hanner,
USAF (Ret.)
Papillion, Neb.

More on Ranch Hand

I rarely write letters to the editor, but when the courageous Ranch Hands were mentioned in your August issue, p. 84, and the ensuing letters in the October issue ["Letters: Ranch Hand," p. 4] came out, I decided to write about some experiences.

I was stationed at Bien Hoa [AB, South Vietnam] in 1966 as a member of the 531st Tactical Fighter Wing (F-100s) when the Ranch Hands were reassigned from Saigon to Bien Hoa. The fighter pilots at Bien Hoa were not happy to have them, until they showed up. They came up initially in a seven-ship echelon, trailing purple smoke, and made a fighter pitchout and overhead pattern. They went to the club (at 8 a.m.) and ordered all the champagne the club had. By noon they were all drunk. The fighter pilots who came to lunch remarked, "Hey, they aren't so bad."

The [Ranch Hand crews] started flying IV Corps missions and were getting shot up pretty bad. They told [headquarters] 7th Air Force that they needed fighter cover. I was assigned to coordinate fighter cover for them.

First, the Ranch Hands would not take off until the F-100s were airborne. We mutually decided that a 750-pound bomb at the beginning of a run and another at the end of a run was a starter. Then we agreed that CBU-2 put down ahead of their route would quell the ground fire. I calculated the speed of the C-123s at 130 knots and the speed of the F-100s at 450 knots, the time of fall of the CBU,

and I came up with a 10-second delay from when the F-100 would pass the Ranch Hands to pickle time. What I did not account for was how fast a fighter pilot counts. The Ranch Hands took 47 hits from the CBU. They commented, "It's OK, we just need to adjust."

When the [operations] officer of the Ranch Hands finished his tour, he stripped in the officers club and, in a bonfire on the floor of the club, burned his golf shirt and Bermuda shorts that he had worn every day. The fighter pilots said, "That's cool."

It was a memorable association between fighter pilots and Ranch Hands, with both groups exhibiting a single frame of mind.

Col. Robert F. Putney,
USAF (Ret.)
Hollister, Calif.

Corrections

In the September issue, the news item in the "Aerospace World" column titled "McGuire, Aldrin Enter Hall of Fame" (p. 28) did not include two air and space pioneers who were also added to the National Aviation Hall of Fame roll. They were retired Lt. Gen. Laurence C. Craigie and retired Navy Capt. Eugene A. Cernan.

Craigie, who died in 1994, earned Army Air Service wings in 1924 and, among other achievements, became the first military pilot to fly a jet, the XP-59, in 1942.

Cernan was selected as an astronaut in 1963, flew several missions, and was the second American to walk in space and the last to walk on the moon.

Unfortunately, our source material only listed two of the July enshrinees. Thanks to retired Lt. Col. William C. Perkins for notifying us of the omission.

The Chart Page

By Tamar A. Mehuron, Associate Editor

USAF People: Recruiting, Retention, and

Service recruiting and retention in the 1990s reflect the effect of a massive post-Cold War force drawdown, a sharp rise in operations tempo, an exodus of experienced enlisted personnel, a long national economic boom, and a lower propensity among youth to serve in the armed forces.

When the drawdown ended, the Air Force, Army, and Navy found themselves short of recruiters, recruits, and experienced troops. For USAF, the problem became acute as it battled the civilian industry for technology-savvy personnel. By 1998, recruiting and retention levels for the three largest services had dropped. Only the Marine Corps, which had been spared major force cuts, held steady on personnel.

Intensive recruiting efforts, coupled with higher military pay and better benefits, helped all services meet recruiting goals in Fiscal 2000, which ended Sept. 30. Improvements in the military retention system brought higher retention rates, reflected in the upticks by each service for Fiscal 2000.

Fig. 1, "US Military Recruiting," shows that 1990 recruiting figures for the Air Force, Army, and Navy marked the highs for the decade. From 36,200 recruits in 1990, the Air Force dropped to its lowest recruit total—30,000—in 1991 and again in 1994. By 2000, it had climbed to 34,400.

Army recruiting shows the greatest swing. From a 1990 high of 89,600, Army numbers fell to 62,900 in 1995, nearly a 30 percent drop. Two years later, the Army number rose to 82,100. But by 1999, the figure had fallen once again—to 68,200. Intensive recruiting efforts brought numbers back up to 80,000 in 2000.

Navy recruiting shows an overall downward trend from 1990 through 1996. The Navy experienced a decrease of about 33 percent: from 1990 to 1996. Navy recruiting numbers then remained fairly flat until 1998, rising slightly in 1999 and then to 55,000 in 2000.

Marine Corps numbers held fairly steady throughout the period, peaking in 1993 with 34,800 recruits. USMC was the only service to meet its recruit quota each year.

Fig. 2, "US Military Retention," shows the overall retention record in percentages of actual first-term rates. The records of all four services in 2000 show an upturn from 1999. The Air Force achieved its highest retention percentage of first-term personnel over the decade in 1995. By 1999, the retention rate had fallen to 49.1 percent, down 13.9 from 1995.

The Navy's best year for first-term retention came in 1991, with 41.4 percent staying in. Declining retention rates dominated subsequent years, with the lowest—28.2 percent—retention in 1999.

The Army suffered its lowest retention rate of first termers in 1992, with just 30.7 percent. By 1997, that rate had climbed to its highest level of 54.4 percent.

The Marines' highest rate occurred in 1990, at 29.9 percent retention of first-term personnel. A subsequent downward trend hit a low of 17.2 percent in 1993, then began to rise throughout the rest of the decade. As of Aug. 31, 2000, the Marines had increased the retention of first termers to 26.3 percent, their next-best rate after 1990.

Fig. 3, "USAF/Navy Retention Rates," presents a comparison

Fig. 1 US Military Recruiting

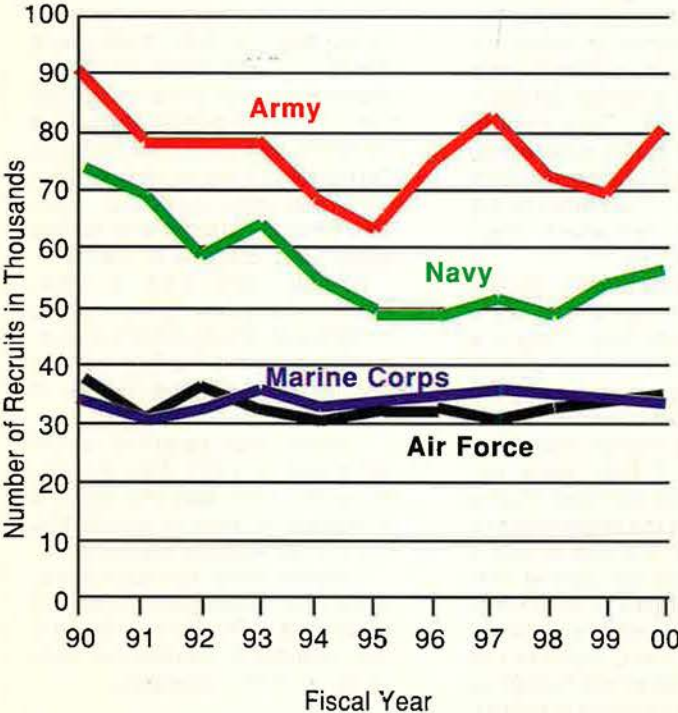
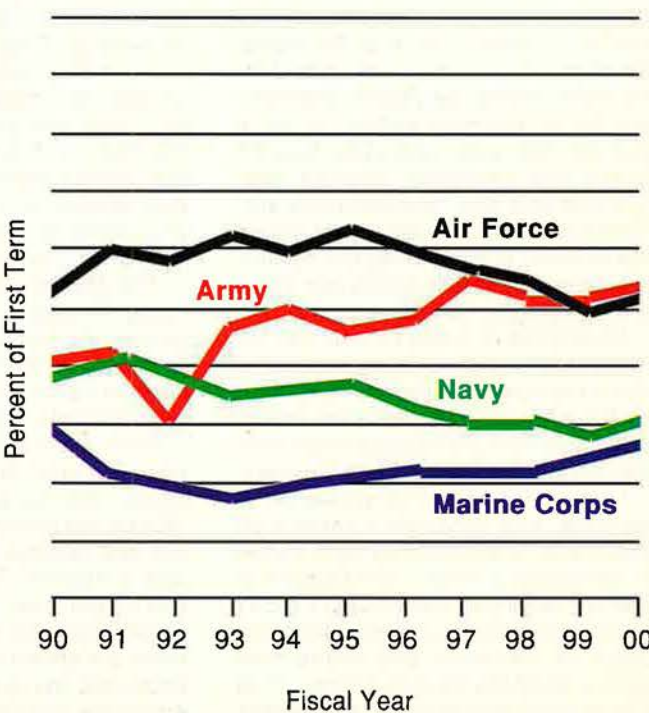


Fig. 2 US Military Retention



Demographics

of the two services' first- and second-term rates, in percentages achieved and in goals for the years 1996–2000. Fig. 4 on USAF retention charts Air Force first-term goals and percentages achieved for that five-year period. Fig. 5 on Navy retention tracks the record of Navy goals vs. percentages achieved from 1998 to 2000. Comparison with Army and Marines was not possible because those services use percentages for goals, and numbers for actual retention figures.

Sources: Secretary of Defense Annual Reports, 1991–2000; DefenseLink News; OSD Personnel and Readiness Office, Historical Retention Trend Data.

Fig. 3 USAF/Navy Retention Rates

	FY96	FY97	FY98	FY99	FY00
1st-Term Retention					
Air Force actual	59	56	53.9	49.1	52
Air Force goal	55	55	55	55	55
Navy actual	32.9	30.8	30.5	28.2	30.5
Navy goal	*	*	38	32	30.5
2nd-Term Retention					
Air Force actual	76	71	69	69.4	69.1
Air Force goal	75	75	75	75	75
Navy actual	48.9	48.4	46.3	43.8	47
Navy goal	*	*	54	48	45

* Percentage goals not established due to drawdown. Fiscal 2000 data through Aug. 31, 2000.

USAF People: Demographics

(July 1 through Sept. 30, 2000)

The Air Force has 351,379 active duty personnel. Of that number, 19 percent are women, up from 5.4 percent in 1975. Racial minority representation stands at 26 percent, up from 14 percent in 1975.

Strength	3rd term: 47 percent
Enlisted: 282,356	Officer Education
Officers: 69,023	Bachelor degree: 100 percent
Total: 351,379	Master degree: 44 percent
Sex	Professional degree: 10 percent
Men: 81 percent	Doctorate: 2 percent
Women: 19 percent	Enlisted Education
Race/Ethnicity	High school diploma: 100 percent
Caucasian: 74.3 percent	Some college credit: 90 percent
Black: 16.1 percent	Associate degree: 14 percent
Hispanic: 4.9 percent	Bachelor degree: 4 percent
Other: 4.8 percent	Master degree: 0.7 percent
Marital Status	Commissioning Source
Married: 62 percent	ROTC: 42 percent
Unmarried: 38 percent	Officer Training School: 20 percent
Duty Station	US Air Force Academy: 20 percent
US: 79 percent	Direct appointment, other: 18 percent
Overseas: 21 percent	
Enlisted Experience	
1st term: 37 percent	
2nd term: 16 percent	

Fig. 4 USAF Retention: 1996–2000

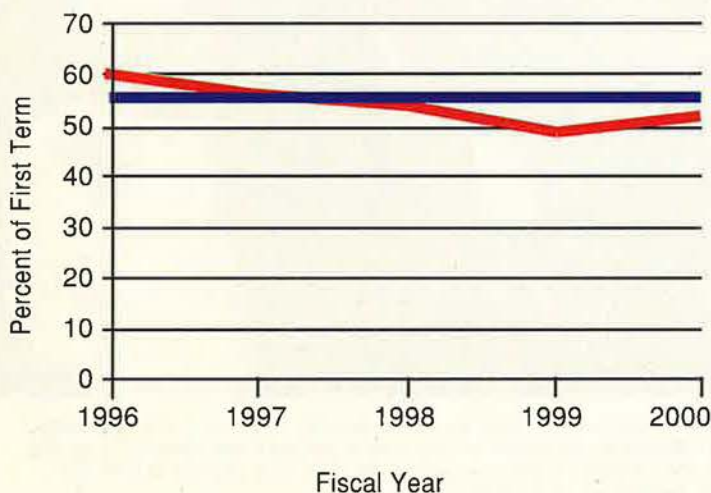
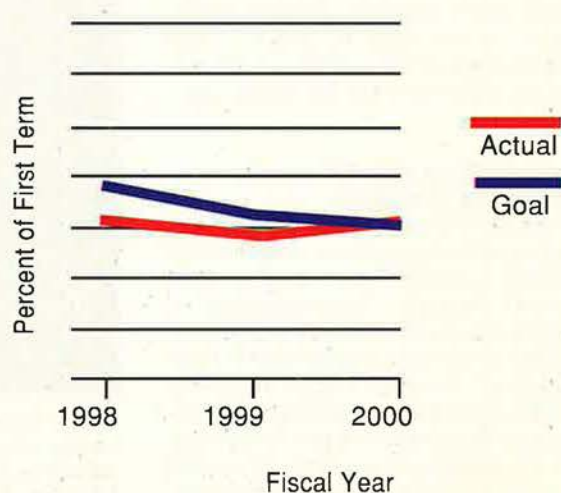


Fig. 5 Navy Retention: 1998–2000



Aerospace World

By Peter Grier

Ryan: Pay for Skills, Not Rank

To better retain skilled science and technology workers, the Air Force should base its pay scales on capability, not rank, Chief of Staff Gen. Michael E. Ryan said Oct. 30.

"Someday, someday, we are going to have to break those two apart, particularly in an economy which has demands on these kinds of people across the spectrum of commerce," Ryan told the Office of the Air Force Chief Scientist 50th Anniversary Symposium.

Retention of top science and tech workers is a major issue for the service as it prepares for next year's crucial Quadrennial Defense Review. Currently, the Air Force is 2 percent short of its communication and information officer requirement, 7 percent short of its civil engineer requirement, and 23 percent short of its scientist requirement, according to Ryan.

"We're eroding the high experience levels that we have in the United States Air Force in these critical areas," he said.

Recapitalization of the force remains perhaps the pre-eminent USAF issue for the QDR, however. Ryan also noted that the service needs to build about 170 aircraft a year to keep the average life of its aircraft under 25 years, given the current force structure.

"The average age of our fleet in the year 2000 was over 20 years old. And if we execute every program we know about, every one that we have on the books, in the next 15 years ... the average age of United States aircraft will be approaching 30 years old," Ryan said.

Rostker Says USAF Faces Worst Readiness Problems

The Air Force has the worst long-term readiness problems of all the US military services, according to Bernard D. Rostker, undersecretary of defense for personnel and readiness.

Aircraft are wearing out faster than expected, Rostker told a break-fast meeting of defense reporters. Maintenance requirements per flying hour are increasing. Replacement aircraft such as the F-22 are very expensive.

"The Air Force clearly is the service with the biggest problem in terms of replacing its capital, its hardware," said Rostker.

The Army is in slightly better shape than the Air Force in terms of the age of its weapons and its long-term procurement plan.

"I'll tell you the service that is in the best shape is the Navy, both in ship and airplane fleet," said Rostker.

On the other hand, reports of short-term readiness problems may have been exaggerated. Rostker used the term "exquisitely ready" to refer to

the current fighting state of US armed forces and said he does not think the US has a readiness crisis today.

Constant deployments have worn on some parts of the military, he said. But the effect of high operations tempo on readiness varies according to mission and unit.

Expectations play into optempo effects. The Air Force has not traditionally been a deploying force, while the Navy has been, said Rostker.

"That is why the Air Force has gone to an expeditionary force concept to see if they can mimic the structure

Medal of Honor for Air Force Hero in Vietnam

The Medal of Honor—the nation's highest military decoration—was awarded posthumously to a pararescueman killed in action during the Vietnam War.

In a Nov. 27 statement, USAF said A1C William H. Pitsenbarger was being given the decoration for valor in treating wounded soldiers despite coming under intense enemy fire and being mortally wounded himself.

Pitsenbarger's heroics—and death—occurred during a battle April 11, 1966, east of Saigon in South Vietnam. According to Department of Defense officials, the award was stymied for years because so many eyewitnesses were killed. Subsequent eyewitness reports were developed in the 1990s.

William F. Pitsenbarger accepted the Medal of Honor on his son's behalf in a Dec. 8 ceremony at Wright-Patterson AFB, Ohio. (The February 2001 issue of *Air Force Magazine* will devote a major article to Pitsenbarger and his valor.)



Alice Pitsenbarger observes at right as her husband, William F. Pitsenbarger, center, accepts the Medal of Honor on his son's behalf from Secretary of the Air Force F. Whitten Peters, during a ceremony Dec. 8 at the US Air Force Museum, Wright-Patterson AFB, Ohio.

USAF photo by TSgt. Gary R. Coppage

and in some ways the expectations of the Navy," he said.

The boost in 1999 funds for spare parts has yet to improve overall Air Force mission capable rates. The overall mission capable rate declined in Fiscal 2000 to 72.9 percent. It was 73.5 percent in 1999, a full 10 percentage point drop since 1991.

The service goal for 2001 is to have 81 percent of its aircraft mission capable over the year.

House May Get Airpower Panel

Rep. Curt Weldon (R-Pa.) said Nov. 14 that if he becomes chairman of the House Armed Services Committee in the next Congress he will create a new airpower subcommittee as part of a general committee reorganization.

Specifically, the current research and development and procurement subcommittees would be scrapped and replaced with airpower, sea power, and strategic and land forces panels, according to a 36-page "Vision for the House Armed Services Committee in the 21st Century" report issued by Weldon's office.

Weldon also said he would like to see HASC become more of an active force in the House. Among possible legislative topics were information warfare, relations with Russia and China, readiness, and defense spending oversight.

"If I have the gavel, there will be a steady stream of substantial legislation ready to go to the floor," he vowed.

Weldon, chairman of the R&D panel for the last six years, is vying with Rep. Bob Stump, Republican of Arizona, for the right to run the HASC.

Air Force To Select Recruiters

The Air Force is scrapping its all-volunteer recruiter force and moving to a selection-based recruiter program. The move comes because the service's recruit-the-recruiter effort was not bringing in enough volunteers to grow the force as fast as planned. The Air Force currently has 1,364 recruiters in the field and is seeking to increase that number to 1,650 by August.

The Air Force had as few as 890 recruiters just 18 months ago.

"While the all-volunteer system served us well in a less competitive environment with fewer recruiters, it can't sustain the number of recruiters with the necessary skills we need to meet our future requirements," said Chief of Staff Gen. Michael E. Ryan.

This cultural shift will make recruiter duty a part of nearly every NCO's career path, say Air Force officials. It is aimed initially at staff sergeants through

NATO Must Control Euro Force, Says Robertson

Recent remarks by NATO Secretary General George Robertson indicate the allies are taking a hard line on command of the European Union's new military potential. According to Robertson, NATO nations are insisting that the European Rapid Reaction Force should remain under NATO control and be led by British Gen. Rupert Smith.

Robertson's remarks were reported Nov. 28 by John Keegan, esteemed British military historian and defense editor of the *London Daily Telegraph*.

The EU—whose membership overlaps in part with NATO—on Nov. 20 took its first major military step, with defense ministers pledging troops and equipment to create a 60,000-member force by 2003. EU nations pledged a pool of 100,000 troops, enough to establish a 60,000-member force while leaving a reserve.

Robertson said Smith, in his role as NATO's deputy Supreme Allied Commander Europe, will be in charge of any operation the EU force undertakes. However, Robertson acknowledged that a final decision on how the force will be commanded is being held up by France. Paris insists that NATO and the EU force should have separate planning staffs.

Robertson told Keegan that, in an attempt to allay Western concerns that the EU force could become a European army, national contingents allocated to the new force would not be permanently committed and could be recalled by national heads of government at any time.

The deputy SACEUR, acting as head of the new force, would answer to EU's Council of Ministers. However, the EU would have to gain agreement of the North Atlantic Council, which includes the US, for any employment on EU missions of European forces that are allocated to NATO.

master sergeants with less than 16 years in uniform. The first batch of selectees will be made by March.

Air Force Personnel Center officials will develop an initial list of recruiter candidates. Those candidates will then be recommended, or not, for their suitability for recruiting duty by their major commands. Those on the refined list will have the opportunity to volunteer for specific openings, beginning in mid-January.

Those on the list may then volunteer for a specific location, which officials say they will try to accommodate. Not all in the pool may be selected, but all vacancies will be filled.

"The AFPC and [major commands] will work together to ensure individual units or career fields are not adversely impacted by these selections," said Brig. Gen. Paul M. Hankins, then director of the Recruiting and Retention Task Force at the Air Staff.

Once recruiters complete their tour, they can return to their primary career field. Along the way they will have developed valuable skills and gained a broader view of their service, say personnel officials.

"People may initially hesitate and may think this is not in their best interest, but when they get to their assignment location we believe they will step to the plate and give an outstanding effort," said Hankins. "When it's over, I feel most of them will say it was a great job."

Recruiting of Veterans on Track

The Air Force is staying on track in its efforts to attract 600 prior-service

personnel back into uniform during Fiscal 2001.

As of early November, 73 such vets had signed enlistment contracts. Fifty-nine had previously served in the Air Force. Seven are Army vets, four were Navy, and three had been Marines, according to Air Force Recruiting Service officials.

The Air Force has re-emphasized the value of prior-service recruits as part of its overall effort to improve recruitment and training. Among the changes: Noncommissioned officer slots in certain in-demand specialties can now be filled by returning individuals. Prior-service military members now count toward recruiters' annual goals.

"The Air Force recognizes there is a pool of highly skilled veterans who've served proudly and now miss the opportunities of military service. ... They miss the teamwork, discipline, and opportunities of the military and want to serve again on active duty," said Brig. Gen. Duane W. Deal, Air Force Recruiting Service commander. "Instead of donning Army green or Marine khakis, they want to build on those skills with a career in the Air Force. This program allows them to do that."

Nearly 900 veterans joined the Air Force in Fiscal 2000. The overall Fiscal 2001 recruitment goal for the service is 34,600.

Air Force Honors Vietnam Hero

The Air Force on Oct. 27 honored 2nd Lt. Richard Van de Geer with a full-honors funeral at Arlington Na-

tional Cemetery. His name is the last inscribed on the Vietnam Veterans Memorial in Washington, D.C.

Van de Geer was killed May 15, 1975, when the CH-53 helicopter that he was copiloting was shot down during the USS *Mayaguez* rescue off the coast of Cambodia.

Remains were recovered from the underwater site in 1995, and those of Van de Geer were recently identified via DNA testing

New Space Aggressor Squadron Activated

The 527th Space Aggressor Squadron was activated during a ceremony at Peterson AFB, Colo., on Oct. 23. While the Air Force has long had flying units that mimic potential adversary fighter tactics and weapons, the 527th is the first aggressor squadron focused on the space arena.

"This is a major step in bringing defensive and offensive counterspace capabilities to the fight," said Lt. Col. Conrad Widman, the squadron's first commander. "It's also a new opportunity for Space Command to slip out and play with the rest of the combat air forces on an equal footing."

The 527th will be under the aegis of the Space Warfare Center, Schriever AFB, Colo. It is divided into an Imagery Exploitation Flight, Electronic Warfare Flight, Red Attack Flight, and Space Control Flight.

The Imagery Exploitation Flight's job is to explore the World Wide Web for commercial satellite imagery of US forces and installations. The quality and detail of the photos they find are often astonishing—and are available to anyone with a credit card and a modem.

"[Commanders become] very sensitive to the fact that the adversary

has a much clearer picture of what US forces are trying to do," said Widman. "They can find out where planes, depots, soldier barracks, and perimeter fences are. It could be done with untrained analysts downloading commercial imagery."

The Electronic Warfare Flight uses known adversary technology to jam Global Positioning System signals and military satellite communications during exercises. Since so many US weapons now depend on GPS for targeting data, their efforts can wreak havoc.

The Red Attack Flight takes all the squadron's capabilities and groups them together into feasible attack plans that target Air Force command-and-control abilities.

The squadron inherits the heritage of the 527th Air Aggressor Squadron, which was based in the United Kingdom and flew F-5s and F-16s against regular units that needed to be ready for combat during the Cold War.

"We're excited about carrying that mission forward in Space Command ... because if we forego the capabilities that the enemy has, it could mean a space Pearl Harbor," said Widman.

Combined Air Operations Center Opens

The Air Force's new experimental Combined Air Operations Center opened for business Oct. 30 at Langley AFB, Va. Air Combat Command Commander Gen. John P. Jumper and Air Force Materiel Command Commander Gen. Lester L. Lyles both presided over the unit's inaugural ceremony.

"Both commands are working to bring an integrated team of acquisition, operations, and testing professionals together to ensure that de-

veloping an air operations center is tightly bound to user requirements and that it can be quickly and effectively tested and fielded," said Lt. Gen. Leslie F. Kenne, commander of Electronic Systems Center, Hanscom AFB, Mass.

An Air Operations Center is a command-and-control center that plans and runs aerospace operations during a contingency or conflict. A Combined Air Operations Center supports joint, allied, or coalition warfare.

The experimental center, CAOC-X, will serve as a test bed for more efficient operations of all US AOCs.

"It's the embodiment of General Jumper's vision for improving all AOCs and will be the hub for bringing in good ideas," said Col. David Tillotson, chief of experimentation for ESC's Integrated Command and Control System Program Office.

Among the improvements Jumper is specifically aiming for are a reduction in the personnel needed for planning, perhaps via the use of automated tools, and the display of combat information in a more readily digestible format.

He has also sought to increase the numbers and improve the skills of AOC operators.

"Training the C² warrior is another real key," said Tillotson.

The Langley CAOC-X will help validate development assumptions and shape future acquisitions.

"We will build a little [and] test a little, with the goal of producing a spiral in three months to get improved capabilities to the warfighter faster," said Col. Frank DeArmond, interim CAOC-X management team program director.

China Now Views US as "Threat"

China appears to be increasingly convinced that the United States opposes its main geostrategic aims and is thus a threat to the Chinese national interest.

That appears to be the message of Beijing's latest white paper on national defense, in any case. Three years ago a similar document contained relatively mild language about the US. The latest version referred to the US in negative terms, numerous times.

The white paper refers to "hegemonism and power politics," which are viewed as code words for US intervention, among other direct and indirect finger-pointing.

The Chinese military might be expected to take a hard line toward the world's only superpower. But this at-

When 90 Days Is Really 91 Days

Air Force officials want airmen to know that when they deploy with an Aerospace Expeditionary Force, they won't be back in town within 90 days. It will take at least 91 days and maybe more.

Officials at the Aerospace Expeditionary Force Center, Langley AFB, Va., explained that each AEF rotation is for three months—which is not necessarily the same as 90 days.

Since the establishment of the Expeditionary Aerospace Force (based on AEFs), USAF officials have referred constantly to "90-day" deployments.

A cycle of five deployments, however, covers 455 days, five more than a cycle of five 90-day deployments. To eliminate this five-day gap, each AEF deployment has been extended to run for 91 days.

USAF officials noted that the strict interpretation of the 90-days terminology may have caused some confusion. "We've heard of some Air Force members who have made leisure and family plans on the 91st day," said Brig. Gen. Dennis R. Larsen, AEF Center commander.

Moreover, the AEF schedule does not include travel time or overlap with departing units, if required. "People will most likely be deployed beyond exactly 91 days," said Larsen.



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John Levitow, Medal of Honor Recipient (1945–2000)

Air Force Sgt. John L. Levitow, the most junior airman to earn the Medal of Honor, died of cancer at his home in Connecticut on Nov. 8. He was 55.

Born in Hartford, Levitow had lived in Connecticut most of his life. After his Air Force service, he worked for more than 20 years on veterans issues, including developing and designing veterans programs for Connecticut.

On the night of Feb. 24, 1969, then-Airman 1st Class Levitow was serving as loadmaster on an AC-47 gunship that was flying to the aid of troops at Long Binh Army post northeast of Saigon. As the airplane approached its target area near the post, an 82 mm mortar shell ripped through its right wing, spraying the interior with shrapnel.

Levitow—along with four fellow crew members—was badly wounded, his back and legs shredded by more than 40 shards of metal. Though in great pain and entering shock, he saw that an armed flare was rolling about the cargo area amidst thousands of rounds of ammunition. The AC-47 had been hit at the moment the gunner was about to toss the flare out the open cargo door.

Levitow attempted to pick up the flare but was unable to grasp it as the airplane banked out of control. Finally he threw his body on the smoking flare, knowing full well that it could ignite and burn at 4,000 degrees Fahrenheit at any second.

He dragged himself to the cargo door and tossed the flare out just as it burst into flame. He fell unconscious as the pilot regained control of the gunship and it limped back to base, riddled by 3,500 holes.

In later years, Levitow said he remembered nothing between the pilot yelling back to the crew after the AC-47 was hit and its arrival at a landing strip. His actions were a conditioned response, he said.



John L. Levitow Jr., son of the late Medal of Honor recipient John L. Levitow, receives the American flag on behalf of a grateful nation from Carol DiBattiste, undersecretary of the Air Force. Levitow died Nov. 8 at his home in Connecticut after a lengthy battle with cancer.

After his recovery at a hospital in Japan, Levitow returned to Vietnam and flew 20 more combat missions, for a total of more than 200. President Nixon presented him with the Medal of Honor on Armed Forces Day, May 14, 1970, in a ceremony at the White House.

"Sergeant Levitow served during a war in which heroic acts were commonplace, but by any standard, his courage that night was extraordinary," said Secretary of the Air Force F. Whitten Peters. "His selfless actions saved not only his own life but the lives of seven others."

Only 61 airmen have received the nation's highest military award. Of those, Levitow had the lowest rank at the time of his act of courage.

In the years since he left the service, the Air Force has honored him in a number of ways.

The Levitow Honor Graduate Award goes to the top professional military

education graduate from Air Force Airman Leadership Schools. At Lackland AFB, Tex., the 737th Training Group Headquarters building is named in his honor.

In 1998, Air Mobility Command named a new C-17 Globemaster *The Spirit of Sgt. John L. Levitow*. That year Hurlburt Field, Fla., also made Levitow part of their Walk of Fame.

Burial was at Arlington National Cemetery on Nov. 17, with full military honors.

"John Levitow for years has been woven into the fabric of enlisted heritage," said CMSAF Jim Finch. "Through his heroic efforts he was the embodiment of our core value 'service before self.' His name has become synonymous with excellence, and his legacy will continue to live in the hearts and minds of all Air Force members today and well into the future."

titude is also reflected in general government statements, academic debate, and even at times in the press.

A number of events lie behind this trend. Among the actions that are threatening to many Chinese are NATO expansion, the US discussion of a national missile defense, and the signing of new US-Japan military guidelines.

In addition, the May 1999 bombing of the Chinese Embassy in Belgrade by US forces stirred great resentment throughout China. Few accepted the American explanation that it was an accident.

Beijing sees continued US arms sales to Taiwan as an impediment to

one of its most cherished goals: reunification with what it considers a reregaded island.

China has launched a military modernization drive to increase its geopolitical leverage. It has purchased Su-27 and Su-30 fighters from Russia and is beginning domestic production of the Su-27. It has now taken delivery of two modern Russian destroyers. China's submarine and nuclear forces are in line for upgrades.

Analysts note that for all this, Chinese forces remain far inferior to those of many NATO nations, let alone the United States. China's entry into the World Trade Organization and its integration into the global economy

could yet curb its rising anti-American belligerence.

Visits by US officials in recent weeks were part of ongoing talks to help ease tensions in the region. The Pentagon is considering military exchanges during 2001.

In a statement to the press in Beijing, Walter B. Slocombe, undersecretary of defense for policy, said he told Chinese officials with whom he met that the US welcomed the detail provided in the white paper; however, "References to the US as a would-be hegemon in the Asia-Pacific region were without foundation and unhelpful to building a positive relationship."

Russia Announces Force-Cut Plan

Russian President Vladimir Putin has reiterated his intention to cut his nation's 3-million-strong military and paramilitary by 600,000 positions over the next five years. Of that total, the regular armed forces, which number about 1.2 million, will be cut by 365,000.

Nearly 250,000 of the cuts would come from the officer corps, under orders issued by Putin in early November. Another 130,000 would be trimmed from the Defense Ministry bureaucracy.

Money saved by the reductions will allow the purchase of new, more modern weapons, said Putin in a speech to military commanders on Nov. 20. By 2006 reformed combat forces should be deployed facing central Asia and Russia's southwest—areas where Moscow feels threatened by Islamic militants.

"These forces should use the most modern technology and planning methods," said Putin.

Putin has also proposed deep cuts in nuclear warheads as part of his ongoing negotiations with the US over missile defense. Warhead levels could go as low as 1,000 to 1,500, the Russian leader said.

President Clinton replied to the arms cut offer with cautious interest. "I think it is quite possible that we

Pentagon Report Blasts Deutch for Security Lapses

Former CIA Director John Deutch, who should have known better, failed to follow "the most basic security precautions" by storing classified information on unsecured computers.

That is the scathing conclusion of the Defense Department's Inspector General. It was contained in the final report of the IG investigation into Deutch's security lapses.

"The evidence we obtained clearly establishes that Dr. Deutch failed to follow even the most basic security precautions," said the report, dated Aug. 28 and released to reporters Nov. 28.

Deutch, who was the Pentagon's No. 2 official before taking the CIA post, repeatedly rejected Pentagon requests that he allow installation of security systems on computers at his residence.

"We find his conduct in this regard particularly egregious," said the report.

Deutch has declined to answer government investigators' questions about his alleged mishandling of classified material when in office, officials said Oct. 10. A Justice Department special prosecutor has recommended that he be charged with committing security violations.

Among the specific mysteries which remain are what has become of computer disks that Deutch used to store an electronic diary he compiled of his Pentagon experiences between 1993 and 1995. Deutch also has admitted using unsecured home computers to handle classified data. Those computers were used to access the Internet, leading to security officials' fears that the data was compromised by hackers or foreign governments.

With publication of the report, the IG has ended its part of the investigation. However, the Pentagon was continuing to conduct a damage assessment of Deutch's actions, according to Pentagon spokesman Kenneth Bacon.

The IG's report said Deutch maintained a journal that included classified information, first on floppy disks that he "was known to transport ... in his shirt pocket" and later on computer memory cards provided by the CIA.

Deutch was deputy defense secretary, the department's second-ranking official, between March 1994 and May 1995. Prior to that, he served as undersecretary of defense for acquisition and technology.

A Dirty Dozen for the New Guys in Town

For a year, a group of analysts under the aegis of the National Defense University has been considering possible points of departure for the next Quadrennial Defense Review, officially due to get under way shortly after the inauguration.

The NDU's QDR 2001 Working Group in November issued a report that included, among other things, a list of what it viewed as the 12 most difficult strategy decisions the new Administration will face. They are:

1. How should the United States define its national interests?
2. What are the most significant threats to US interests, and what are the most significant opportunities for advancing those interests?
3. What should our primary national security objectives be?
4. What kind of wars should the US military be prepared to deter and, if necessary, fight and win over the next 10–20 years?
5. What are the appropriate uses of the US military short of major war? How much and what kind of military involvement should there be in other contingencies and in peacetime engagement activities?
6. What are the appropriate roles and missions for DoD in support of homeland security?
7. What should the objectives of military transformation be, and how urgently should they be pursued?
8. What should be the military's overseas-presence posture?
9. What is the appropriate role of nuclear weapons? What mix of strategic offenses and defenses should be pursued?
10. What roles should we expect allies and coalition partners to play across the spectrum of operations?
11. How should these various strategy elements be prioritized?
12. What strategy-based criteria should be used to size the force? And what should be the associated declaratory policy?

could agree to go down to fewer missiles in our nuclear arsenal and theirs," he said in a Nov. 19 interview with CNN.

But Clinton—who has deferred the decision on missile defense deployment to his successor—said it would be difficult for America to pass up the opportunity to erect a reliable shield against warheads, if it proves possible.

"If the technology existed which would give us high levels of confidence that one or two or five or 10 missiles could be stopped from coming into the country, it would be hard to justify not putting it up," said Clinton.

Short Says He's Come Around on UAVs

The commander of allied air forces during 1999's Kosovo conflict says the experience made him a true believer in the potential for Unmanned Aerial Vehicles.

UAVs might offer a solution to some of the shortcomings in US airpower exposed during the fight against Slobodan Milosevic, he said.

He came out of the conflict as "an enormous fan of the Unmanned Aerial Vehicle," Short told a Capitol Hill breakfast seminar, sponsored by DFI International.

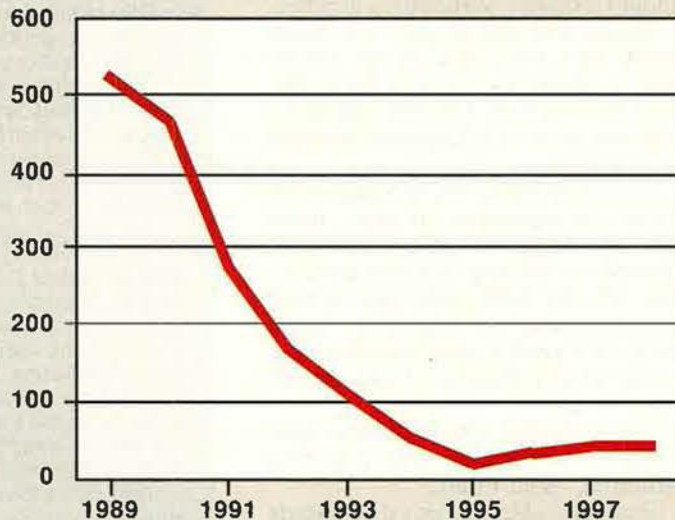
Twitching Carcass of the Soviet Fighter Industry

"Once among the most glamorous components of the Soviet military-industrial complex, the Russian military aircraft industry has been described by some analysts as being on the verge of collapse. Russia's civilian aircraft industry has faced similar pressures, which does not bode well for the military aviation infrastructure. It may be difficult for fighter aircraft companies to find employment in Russia's beleaguered civil aircraft sector. ...

"Russia's remaining fighter aircraft design and manufacturing enterprises, Sukhoi and Mikoyan, appear to be struggling to stay alive. Both companies have sought to make up for decreased domestic demand by increasing their export of fighter aircraft and by winning contracts in the civilian aviation sector. Success in both areas has been limited, and many analysts doubt that Russia can support more than one fighter aircraft company for much longer. The potential for a merger between the two companies has been discussed for some time. Each has its own strengths and weaknesses, and it is unclear which would survive a merger."

—From Nov. 8 report of the Congressional Research Service, "Russian Fighter Aircraft Industrial Base: Parallels With the United States?"

Combat Aircraft Procured by USSR/Russia
1989–98



Source: *The Military Balance 1999–2000*. London: Oxford University Press, 1999.

Suppression and destruction of enemy air defenses are among the missions that might be particularly suited to UAV strengths, said Short. Both were more difficult over Kosovo than anticipated, as the enemy did not fight in the manner US officials had predicted.

The long dwell times possible with unmanned vehicles could make location of air defense sites easier and negate adversary tactics of turning radars on and off and moving them around. "We need to be overhead, suppressing and killing 24 hours a day," he said.

USAF Eyes Multiservice JSF Facilities

The Air Force is leading a triservice study of the feasibility of joint maintenance and training facilities for the Joint Strike Fighter.

The study will take approximately two years. Its final product will likely be recommendations for the construction of initial sites to handle JSF work, Lt. Gen. Michael E. Zettler, Air Force deputy chief of staff for installations and logistics, said during a DoD maintenance symposium held in Charleston, S.C.

Funds for these facilities would have to be included in Fiscal 2004 budgets to have them completed by 2007, before the first production JSFs roll off the assembly line.

"We envision, initially at least, we will probably have some type of single-

location operation," said Zettler. "The degree of integration of that location has to be worked out."

Service training concepts for the JSF, which have yet to be established, will be among the factors determining how joint the airplane's operations will be. Air Force officials envision sharing some back-shop support with the Navy and Marines but point out that Navy, Marine, and Air Force aircraft maintainers all do business in vastly different ways.

Zettler said that training for each one of those communities will be structured differently but would, hopefully, produce the same outcome.

NRO Needs Cash, Attention, Effort

The National Reconnaissance Office—the agency responsible for the design, construction, and operation of US spy satellites—has drifted since the end of the Cold War and needs a new focus and sense of purpose, according to the report of a bipartisan Congressional commission.

Among the panel's key recommendations: The NRO should establish a secret in-house office to pursue cutting-edge technology for snooping from space.

This new Office of Space Reconnaissance "should have special acquisition authorities, be staffed by

Against Taiwan, China Faces "Probability of Failure"

RAND recently took a fresh look at the long-running conflict of the two Chinas. The result was a new report, "Dire Strait? Military Aspects of the China-Taiwan Confrontation and Options for US Policy." It postulated a surprisingly bleak outcome for any actual Chinese military adventure:

"Our analysis suggests that any near-term [Communist] Chinese attempt to invade Taiwan would likely be a very bloody affair with a significant probability of failure.

"Leaving aside potentially crippling [People's Republic of China] shortcomings that we assumed away—such as logistics and C² deficiencies that could derail an operation as complex as a 'triphibious' (amphibious, airborne, and air assault) attack on Taiwan—the [People's Liberation Army] cannot be confident of its ability to win the air-to-air war, and its ships lack adequate anti-air and anti-missile defenses.

"Provided [Taiwan] can keep its air bases operating under attack—a key proviso ... — it stands a relatively good chance of denying Beijing the air and sea superiority needed to transport a significant number of ground troops safely across the strait. Overall, [Taiwan] achieved 'good' outcomes in almost 90 percent of [RAND's analytical] cases against our best-estimate 'base' PRC threat."

experienced military and CIA personnel, have a budget separate from other agencies, ... be protected by a special security compartment, and operate under the personal direction of the President, Secretary of Defense, and Director of Central Intelligence," said the National Commission for the Review of the National Reconnaissance Office.

The 11-member panel, co-chaired by Florida Republican Rep. Porter J. Goss and Nebraska Democrat Sen. Bob Kerrey, found that the NRO has played a crucial role in protecting US national security for 40 years.

However, the clarity of mission and sense of urgency that powered the agency for so many years has dissipated since the fall of the Soviet Union, panel members claim. The agency has suffered from underinvestment and inattention from senior officials at a time when the threats the US faces are increasingly complex and the NRO's government customers are demanding more and better information.

The personal attention of high officials from the President on down will be necessary to reverse the situation, members said. Its mission should be updated, and its funds—particularly those devoted to research and development and acquisition—should

Taxes and Troops

Margaret Carlson, columnist for *Time* Magazine and commentator for CNN, had some harsh words for US military men and women who are Florida residents. They're tax evaders, she said.

Carlson's denunciation, uttered on the nationally syndicated "Imus in the Morning" radio program, came after the Nov. 7 Presidential election. She made the remark amid speculation that the election between George W. Bush and Al Gore might be decided by mail-in ballots from active duty men and women who make Florida their home of record.

Carlson claimed that those military personnel do not pay state taxes. (Neither do other residents of Florida, which does not have a state income tax for anyone to evade.)

Carlson later apologized on CNN's "The Capital Gang," citing her own remark as the "outrage of the week."

Carlson has been a *Time* columnist since 1994.

be increased. A new Office of Space Reconnaissance could respond more quickly and effectively to the fast-paced technical changes of today, members decided. Its task would be to attack the most difficult intelligence problems.

In a way, OSR would replicate the early years of the NRO, while the NRO itself would continue to serve a broad and growing array of government agencies.

The commission also urged that the Director of Central Intelligence be given greater freedom to shift funds among US intelligence agencies; that

the Secretary of Defense and the DCI jointly establish clear NRO career paths; and that the NRO develop contingency plans for each of its programs that take into account the risks of satellite or launch vehicle failures.

Defender Challenge Tests Security Forces

Defender Challenge 2000—a week-long Olympics-like competition for security forces—wrapped up at Lackland AFB, Tex., on Nov. 4. Teams from 11th Wing, Air Mobility Command, and Air Force Materiel Command were among the gold medal winners.

"The efforts you put forth this week showed the level of excellence and training that the members of security forces have and have shown throughout the world," Brig. Gen. James M. Shames, Air Force director of security forces, told competitors.

The 19th Defender Challenge featured six physical fitness, combat weapons, and policing exercises. More than 120 competitors from Air Force major commands and the British Royal Air Force participated.

A team from AFMC won the fitness challenge event, running a 1.1-mile course with 21 obstacles in 11 minutes, nine seconds. AMC won the handgun target event.

A new base response policing skill exercise was won by 11th Wing, Bolling AFB, D.C. Combat weapons exercises, which involve the M-16, M-60 machine gun, and M-203 grenade launcher, went to AMC.

Chief's Challenge, the only event between individuals, was won by SrA. Pat Spencer from AFMC. The crown jewel event, the Sadler's Cup nighttime tactical exercise, went to 11th Wing.

"We are a pretty small group of folks in the 11th Wing, and they all work as hard as these guys did this week," said Col. James P. Hunt, 11th Wing commander.

Grave of Cold War-Era USAF Pilot Near Discovery?

On July 1, 1960, Air Force Maj. Eugene E. Posa died when his RB-47 spy airplane was shot down, plunging into the Barents Sea. A Soviet trawler rescued two other crew members and recovered the body of another, but Posa simply vanished from US view. The Cold War incident occurred two months after the downing of U-2 pilot Francis Gary Powers. Moscow provided no leads or information, and memory of the incident receded.

Now, more than 40 years later, US officials have raised hopes of finally locating Posa's body. Denis Clift, co-chairman of the Cold War Working Group of the US-Russian Joint Commission on POWs and MIAs, told the Associated Press on Nov. 22, "We believe we're on the verge of identifying the [Russian] cemetery where [the body] was buried."

Clift said it appears Posa, from Santa Monica, Calif., was buried near Severomorsk, north of Murmansk. For a while, authorities believed the body was in a military cemetery in Severomorsk, but Clift said new information pointed to a location outside Severomorsk. Investigators already had located the hospital in which officials conducted an autopsy of Posa's body.

The renewed US-Russian probe found records indicating a Soviet fishing trawler recovered Posa's body Oct. 14, 1960, three months after the shootdown of his aircraft. A second trawler retrieved parts of the RB-47's wings. On Oct. 15, 1960, Posa's remains were transferred to the second trawler and transported to Severomorsk.

Archival reports and an interview with the trawler captain and crewmen indicated that Posa's remains arrived in Severomorsk on Oct. 19, 1960. After that, however, investigators found no log entries or release documents to confirm Posa's removal from the trawler or to indicate where he was buried. Investigators have conducted numerous interviews in an effort to complete the search.

Officials believe the recovery and repatriation of Posa's remains would be an important step for the commission, which has been in business for more than eight years.

For Worried Air Force, the Down Streak Hits Nine Years

The Air Force Mission Capable rate—a measurement of the ability of USAF's aircraft fleet to carry out its main missions—has just dropped for the ninth straight year.

The MC rate is a number that expresses the percent of time an aircraft possessed by a unit is either partly or fully ready. As Fig. 1 shows, the number has been falling since 1991.

In Fiscal 2000, the MC rate for active, Guard, and Reserve forces was 72.9 percent, down from 73.5 percent in Fiscal 1999.

As a result of this and prior declines, the MC rate now stands more than 10 percentage points lower than at the start of the 1990s (83.4 percent).

USAF leaders, who have set an MC goal this year of 81 percent, view the decline with concern. The downward trend stems from a huge increase in operations and an enormous reduction in procurement, which has produced the oldest Air Force fleet in history.

In addition to tracking the MC rate, the Air Staff pays careful attention to three subcategories (Fig. 2, 3, and 4) that bear directly on the combat health of the fleet:

- **Not Mission Capable Maintenance rate**—Percent of time an aircraft possessed by a unit is not mission capable as a result of pending maintenance.
- **Total Not Mission Capable Supply rate**—Percent of time an aircraft possessed by a unit is not mission capable due to parts supply problems.
- **Cannibalization rate**—CANN actions per 100 sorties. CANN action entails removing a functional part

Fig. 1 Mission Capable

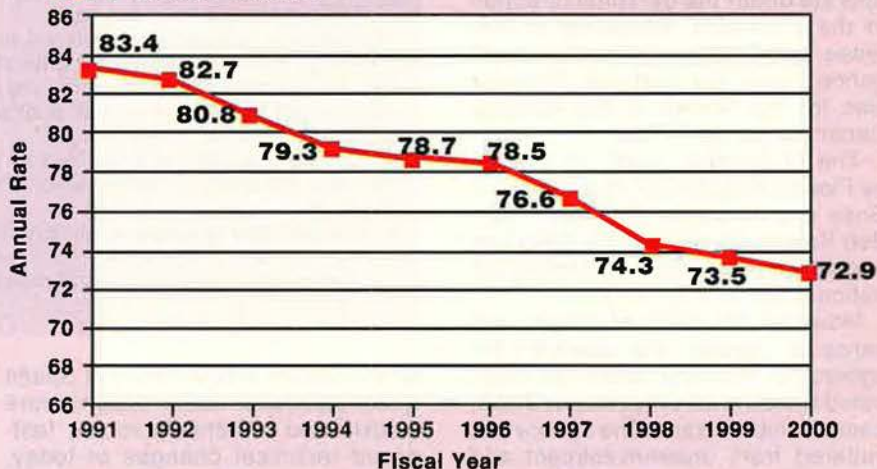
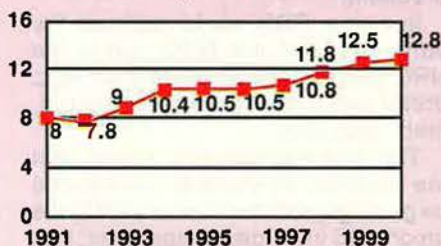


Fig. 2 Not Mission Capable Maintenance



from one weapon system to make another weapon system fully operational.

The latter category provides the one bright spot in an otherwise worrisome picture. Largely because of major increases in spare parts procurement in recent years, the CANN rate has declined in each of the past three years.

Fig. 3 Total Not Mission Capable Supply

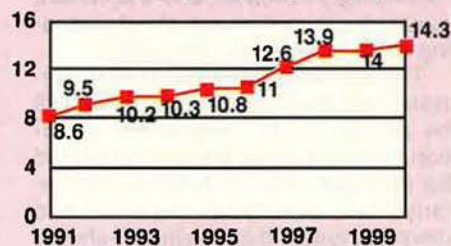
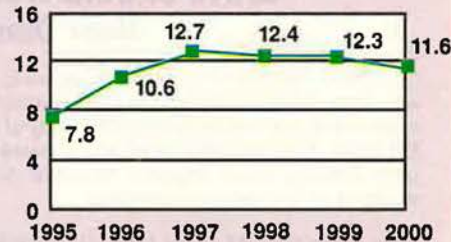


Fig. 4 Cannibalization



No Impropriety Found at Tailhook

Navy officials say they have found no evidence that a civilian woman was groped by naval aviators attending a Tailhook Association convention in Sparks, Nev., last summer. (See "Aerospace World: Tailhook, the Sequel," November, p. 22.)

The woman's allegations gained wide attention since the Navy has only recently restored official ties with Tailhook following the 1991 association meeting, which became notorious for its drunken debauchery, sexual assaults, and property damage.

A security videotape of last summer's alleged misconduct shows no inappropriate contact took place. The *Los Angeles Times* reported that the Sparks Police Department said the woman and her husband refused to

sign a formal complaint after learning of the existence of the videotape.

News Notes

■ The Air Force Academy football team won the Commander in Chief's Trophy for the fourth consecutive year by defeating both Navy and Army. The win was the Falcons' 14th in the service academy round-robin in the last 19 years.

■ The Pentagon plans to set up recruiting centers in shopping malls, defense officials announced Nov. 14. The first was officially opened in the Potomac Mills megamall in suburban Washington, D.C., on Dec. 5.

■ On Oct. 26 Air Force officials announced they plan to functionally realign Air Intelligence Agency, headquartered at Kelly AFB, Tex., under

Air Combat Command, Langley AFB, Va., on Feb. 1.

■ In November, Launch Facility D09 and Missile Alert Facility D01 at Ellsworth AFB, S.D., will be turned over to the National Park Service and designated as the Minuteman Missile National Historic Site. Under the terms of the Strategic Arms Reduction Treaty the sites are being preserved as memorials to the Cold War and the role of the Minuteman missile in US defense.

■ The 502nd Air Operations Group was recently activated by Pacific Air Forces at Hickam AFB, Hawaii. The collocation of the 502nd with PACAF headquarters will help consolidate core components of PACAF's Air Operations Center.

■ Undersecretary of Defense for Policy Walter B. Slocombe received

USAF General Gets Key USJFCOM Job

Maj. Gen. Daniel M. Dick, USAF, on Nov. 20 became head of US Joint Forces Command's directorate of strategy, requirements, and integration, the command announced.

In this new position, Dick will oversee the development of requirements for joint warfighting. The primary mission of JFCOM is to train more than a million US-based personnel from all services for joint deployments around the world. However, it has become the principal center of joint experimentation.

The command's recently retired commander in chief, Adm. Harold W. Gehman Jr., spoke out frequently in favor of JFCOM having a major say in development of weapon requirements, an area traditionally reserved for the military services.

Dick, a fighter pilot, previously served as commander, 13th Air Force, Andersen AFB, Guam, where he was responsible for air operations in the Pacific and the Indian Ocean.

the Joseph J. Kruzel Award for distinguished service in the pursuit of peace, defense officials announced Nov. 3. Slocombe's work to lessen conflict in the Balkans and Korea helped win him the award, which is named after a defense official who died on a peace mission to Bosnia in 1995.

■ On Oct. 12 an officer was convicted of misusing his government computer, conduct unbecoming an officer, and receiving child pornography in interstate commerce. Maj. Robert L. Mason Jr. pleaded guilty to all of the charges. While working at the Defense Supply Center in Columbus, Ohio, Mason downloaded and viewed both adult and child pornography and visited Web chat rooms on sexually explicit topics.

■ DoD is considering building its own vaccine production facility. Money has been added to the future years defense plan to study such a move, defense officials said in early November, in light of concerns about anthrax vaccine shortages and shortcomings by the vaccine's manufacturer, Michigan-based BioPort Corp.

■ The 555th Fighter Squadron, Aviano AB, Italy, was named the best maintenance unit in DoD on Nov. 2. The "Triple Nickel" won the Phoenix Award, presented annually to the unit with the most exceptional maintenance record of the year.

■ On Nov. 2 the Pentagon opened a corridor exhibit honoring the United Services Organization. The display highlights such celebrities as Bob Hope and Marilyn Monroe, who entertained troops under USO auspices, and commemorates the close association between the USO and DoD.

■ This year's Harold Brown Award has gone to Frank Marcos, a principal physicist from the Air Force Research Laboratory's Battlespace Environment Division at Hanscom AFB, Mass. The honor recognizes significant achievement in research and development that can lead to sub-

stantial improvement in Air Force operational effectiveness. Marcos won for work that improves the modeling of upper atmospheric density—a key variable in determining low Earth orbit satellite trajectories.

■ On Nov. 1 Air Force and New York state officials broke ground on a \$23.8 million Air Force Research Laboratory facility at Rome, N.Y. The facility at Griffiss Business & Technology Park is the result of joint funding by the Air Force and state de-

velopment programs. Completion is scheduled for October 2002.

■ Almerisio Lopes, a civilian editor at Air University's College of Aerospace Doctrine, Research, and Education, Maxwell AFB, Ala., received the Brazilian Aeronautical Order of Merit in a ceremony at Brasilia air base, Brazil, on Oct. 23. Lopes was honored for his work as the editor of the Portuguese-language edition of *Aerospace Power Journal*, USAF's flagship professional periodical.

■ Actor Chuck Norris was named "Veteran of the Year 2001" by American Veteran Awards, founded by the nonprofit public benefit organization Veterans Foundation Inc. Norris is an Air Force vet who served at Osan AB, South Korea, and March AFB, Calif. He was chosen for his "outstanding character, prominence as a veteran, and for his numerous career achievements, personal accomplishments, and philanthropic pursuits."

■ The last EC-135E Advanced Range Instrumentation Aircraft flew its last mission Nov. 2, from Edwards AFB, Calif., to Wright-Patterson AFB, Ohio. The aircraft is to go on display at the US Air Force Museum. ■

F-22 Avionics Software Delivered

Boeing announced it had delivered on Nov. 21 to Lockheed Martin advanced avionics software for installation in Raptor 4005. Plans called for a December start to flight test of the software.

The new software, called Block 3.0, contained increased sensor-fusion capability and added weapons-delivery capability to the F-22's integrated avionics.

"Block 3.0 will allow us to demonstrate state-of-the-art, multisensor information fusion in a weapon system," said Bob Barnes, Boeing F-22 program manager.


Congress and DoD last year ordered USAF to install and fly the Block 3.0 software on an F-22 aircraft by the end of the 2000 calendar year. Until it did so, USAF was to be legally barred from awarding initial production contracts.

The software is designed to allow the pilot to operate in battle conditions without the burden of managing individual sensors, thereby improving situational awareness and improving performance.

Lockheed Martin, Boeing, and others have been testing F-22 avionics in Seattle at both the Avionics Integration Lab since 1998 and on the flying test bed since March 1999.

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The six allied nations in the Gulf want US forces to stay engaged there.

Airpower in the Gulf 10 Years Later

By John A. Tirpak, Senior Editor

THE United States seems certain to maintain a sizable military presence in the Persian Gulf indefinitely. This is true even if the UN lifts economic sanctions against Iraq or Saddam Hussein falls from power, say USAF leaders and regional commanders.

Now under way in the region are efforts to construct a long-term security structure that would build even closer, more formal ties among US and friendly air forces.

Should it become necessary to reprise the war against Iraq, the US and its coalition partners would likely be able to achieve the same results in even less time than it took in 1991, despite sharp reduction in the size of US forces, officials reported.

It has been 10 years since the

start of Operation Desert Storm on Jan. 17, 1991. The US force, at peak strength, comprised nearly 500,000 active, Guard, and Reserve troops.

Today, US Central Command deploys about 20,000 personnel in the Gulf—10,000 Navy sailors and Marines at sea, 6,000 Air Force airmen, and 4,000 Army soldiers. Their primary missions are to “contain” the military power of Iraq and neighboring Iran, keep the oil flowing freely, enforce UN-ordered sanctions against Iraq, and deter—or, if necessary, fight—a Major Theater War.


Implied, but not stated openly, is another mission—support the removal from power of Saddam Hussein.

Of these missions, the one with

the highest profile, and which routinely puts US and coalition aircrews at risk, is maintaining a no-fly zone over southern Iraq below the 33rd parallel—dubbed Operation Southern Watch. This effort is intended to prevent Iraqi aircraft from threatening either Iraqi minorities or neighboring countries, as well as to block cargo airplanes from bringing contraband technologies applicable to Weapons of Mass Destruction into the country. A similar effort, Operation Northern Watch, is flown over northern Iraq but is overseen by US European Command.

A Steady Hand

Most nations in the area acknowledge the US military as a politically



In many ways an icon of the 1991 Gulf War, the F-117 stealth fighter is still a powerful symbol of US commitment. Routine deployments of the black jets and other elements of US airpower remind Iraq—and others—that the US takes seriously its promises to remain part of the region's security.



Prince Sultan AB is the hub of US activity in the Gulf region. Once a mere tent city, P-SAB boasts top-line facilities both for troops and managing large operations. This view of "Maintenance City" shows the base's isolation.

steadying factor among them. For its part, the US welcomes the opportunity to operate cooperatively in a region upon which it heavily depends for oil and where—by national strategy—it will dedicate half its fighting forces if another Desert Storm-size conflict breaks out.

"Until the sanctions are lifted, we'll continue to do what we're doing," said Lt. Gen. Charles F. Wald, commander of 9th Air Force and Central Command Air Forces, or CENTAF.

Wald oversees Southern Watch. Should another Desert Storm-style conflict erupt in the Middle East, Wald would be the Joint Forces Air Component Commander for all US and, in all likelihood, coalition air assets committed to the fight.

What if the sanctions are lifted? "Our belief," Wald replied, "is that we will stay engaged in the region ... because of the importance we play in regional stability." Even if Iraq were to see a change in leadership, or sharply downgrade its military capabilities, attention would shift to Iran as posing at least an equal danger, Wald said. Iran is viewed by its neighbors as having ambitions as the "regional hegemon," he added.

There is a perception that the US is only grudgingly tolerated as a presence in the region by the Arab states. This is not true. The reality is that area governments—notably those of the six nations of the Gulf Coopera-

tion Council—actively seek sustained US participation in their security arrangements.

Last October, the United Arab Emirates hosted an unprecedented meeting of air chiefs from the coalition nations engaged in enforcing the sanctions against Iraq. These included the GCC countries of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE, as well as Britain, Egypt, France, Jordan, and the United States.

The symposium was aimed at improving long-term interoperability among the coalition air forces, developing a common vision of aerospace operations, setting up new combined schools for common doctrine and tactics, and finding ways to improve communication and joint network defenses against information warfare.

Gulf Airlift Organization

Coalition nations even discussed the possibility of a new intratheater airlift program in which they all might contribute aircraft or where they might commonly own cargo airplanes that would be used for joint missions. The arrangement would resemble the NATO arrangement wherein the alliance collectively owns its own E-3 Airborne Warning and Control System aircraft, crewed by personnel from member nations and used for NATO missions.

Wald said the symposium, which

the UAE organized with CENTAF's help, went "better than I hoped," and he reported being pleasantly surprised that the group agreed in principle to all of the dozen or so initiatives put forward by the US.

These initiatives included starting up a Mideast version of the NATO tactical leadership program, a combination of academics and flying training to hone common tactics and doctrine. The new program would be hosted by the UAE. Jordan volunteered to host a regional fighter weapons instructor course patterned on the USAF version.

The countries also agreed to work collectively on information network defense, to share more classified information on common threats, and to wire their networks together to perform distributed wargames and simulations.

It was telling, Wald said, that the group readily agreed to make the symposium an annual event. The UAE will host the symposium again next year; after that, members will take turns.

Gen. Michael E. Ryan, USAF Chief of Staff, turned aside suggestions that the conference aimed to lay the groundwork for a NATO-style alliance, claiming instead that it was a "reflection of the trust that both the [participating] nations and the air forces have for each other," after a decade of operations.

Ryan added that the US was gratified the symposium went so smoothly. "We seldom operate in any area of the world unless we have coalition partners," he said. The conference built on "some past successes, but also focuses us on the future," he added.

There is clear evidence that the US is, in fact, wanted as a security partner in the Middle East, Wald asserted. He noted that an erroneous press report last spring—suggesting the US would withdraw 5,000 troops from Saudi Arabia—caused consternation in Riyadh and subsequent requests for clarification.

"The Saudis took that [report] very seriously," he said, and "made a big issue" of it in meetings with US officials. The incident "probably for the first time showed that they really do want us to stay there," he said.

Wald added, "My experience has shown that, first of all, they want us



Aircraft shelters provide vital shade for fighters and their maintainers in the blistering heat of the Saudi desert at P-SAB. These Tornados are the British contribution to Operation Southern Watch.

to engage, they want us to be there, they want to be able to see that we're committed, long-term, they want us to have shared procedures, interoperability of equipment, they want to train more with us, and they'd like us to be in the region more often at my level."

The Florida and South Carolina headquarters for CENTCOM and CENTAF/9th Air Force, respectively, are thousands of miles distant from their areas of responsibility. This is a problem, said Wald. He is on the road half of every month and has delegated great authority to Maj. Gen. Leroy Barnidge Jr., deputy CENTAF commander and 9th Air Force vice commander. Barnidge acts on Wald's behalf to maintain a high-level leadership presence in the area.

Army Gen. Tommy R. Franks, CENTCOM commander in chief, told Congress in June that he is "open" to moving CENTCOM's headquarters from Tampa, Fla., to somewhere in the Gulf region. He said there are "obvious operational benefits" to such a move, and he believes that it's worth the risk to headquarters personnel to be more effective in containing Iraq. Franks also said he believed the risk had declined since Operation Desert Fox in 1998.

Wald also noted that no one at the coalition air symposium even mentioned the issue of the Palestinian-Israeli conflict, which had broken out into violence just before the sym-

posium took place. The terrorist attack on USS *Cole* a week before the symposium also had no effect on the proceedings.

Coherent Vision

The GCC nations have "a very, very clear—and I'd say coherent—vision of the future for themselves," Wald observed. Each of the countries, he believes, wants to be responsible in its dealings with the rest of the world, and they recognize "they need to become interdependent on each other for regional stability."

The Saudis, he said, want the US to "mentor" them. "They've used that word with me many times," said Wald. "And every country I go to, I get the same story. ... They want us to come there to teach them."

The GCC countries in general and Saudi Arabia in particular see the US as a bridge to a more self-sufficient future, he said. "I see a clear recognition of the fact that they understand that technology is a major part of whether they'll be secure in the future or not," Wald continued. "For years ... [the Saudis] purchased outstanding equipment, but they haven't really trained to the same level that maybe the US has. They have come to the realization that they have to become more ... self-sufficient, although they also know that's going to take awhile."

Wald noted that the term "Saudi-ization" has been coined by the government in Riyadh to label the process by which the nation weans itself from depending on third-country nationals doing the work of running the kingdom.

"They are not going to ask us to leave," Wald summed up. Even terrorists "know we're not leaving, they know the Saudis aren't going to make us leave," and make their attacks hoping instead for a "catastrophic incident" that causes the American people "to lose patience with this and ... demand we come home. ... That's the only hope terrorists have."



In Kuwait, one finds tank-killing A-10s like this one, taxiing past the ruins of a hardened aircraft shelter. Though a decade has passed, the Gulf War is a fresh memory for everyone in the region.

Under the UN Security Council resolutions, CENTAF and the coalition monitor and patrol Iraqi airspace below the 33rd parallel. Any flights of Iraqi military aircraft in that area are prohibited, and violating aircraft are subject to attack. UN signatories are enjoined from flying civilian aircraft in and out of Iraq if they are carrying anything other than humanitarian supplies for the Iraqi people.

In addition, Iraq is forbidden from taking any hostile action against coalition aircraft patrolling the no-fly zone, though Iraq denies it is bound by the rule and routinely attempts to shoot down coalition fighters it says are intruding in its sovereign airspace.

Iraq's 700 Shots

Since Operation Desert Fox in December 1998—in which the coalition struck Iraqi targets with bombs and cruise missiles for four days in response to Iraq's refusal to comply with UN weapons inspec-

tors—Iraq has shot anti-aircraft artillery or surface-to-air missiles at coalition fighters or committed other violations more than 700 times. In response, the coalition has struck elements of Iraq's integrated air defense system, though not always the elements involved in the incident.

Brig. Gen. David A. Deptula, who from April 1998 to October 1999 commanded Northern Watch, said the rules of engagement governing coalition responses are highly classified. However, he explained that US forces have wide latitude to protect themselves.

"When they [Iraqi forces] act in an aggressive fashion, with the intent to kill or harm our people, the response needs to be one which reduces their capability to do that in the future," Deptula said.

The response strikes are not "tit for tat," or limited only to the offending missile or artillery batteries themselves, since such rules of engagement could be exploited by Iraq to set up what Wald termed "SAM-

bushes." Iraq, he noted, has many times attempted to lure coalition aircraft into an area where surface-to-air missiles and anti-aircraft artillery are waiting, in an attempt to shoot them down. Everything possible has been done to make ONW and OSW unpredictable.

Brig. Gen. Allen G. Peck, who commands the 363rd Air Expeditionary Wing at Prince Sultan AB, Saudi Arabia, said that Southern Watch maintains a routine though "randomized" schedule of operations, varying day and night flying, the number of days in a row that flying continues, and other procedures to guarantee "there aren't any patterns [Saddam Hussein] could use to anticipate ... where we'll be."

Both OSW and ONW have an integrated air picture of the theater, Deptula said. During his tour, he set up a hotline between the two headquarters—Incirlik AB, Turkey, for ONW and Prince Sultan AB for OSW—to ensure that both had the same information and could coordi-

CENTCOM and Iraq

US Central Command and its air arm, Central Air Forces, are the descendants of the Rapid Deployment Joint Task Force, created by President Jimmy Carter on March 1, 1980, to handle problems in the Middle East.

The RDJTF was created primarily in response to two 1979 events—the Islamic revolution that deposed the shah in Iran and, late in the year, the Soviet invasion of Afghanistan. These two events convinced Washington the Gulf faced dangers requiring a stronger US military presence.

The RDJTF was a component of what was then called US Readiness Command, and its mission was to pick up and rush to the Gulf area in the event of a military crisis.

The first commander, Marine Lt. Gen. P.X. Kelley, was hampered by a lack of bases and pre-positioned equipment, as well as long distance from the theater. He also did not have any forces of his own; in a crisis, he would have to "borrow" them from other commands on short notice.

Reagan defense officials disdained the RDJTF as a weak creation of Carter. Reagan tried to fix RDJTF's problems by recasting it as CENTCOM on Jan. 1, 1983.

Its area of responsibility was widened to include segments of Africa, and CENTCOM eventually got its own assigned component forces and a four-star commander, putting it on an even footing with European Command, Pacific Command, and Southern Command.

Over time, CENTCOM widened its role from force of intervention to a politico-military entity seeking to extend US influence in the region through engagement activities.

Its first major test was Operation Earnest Will, the reflagging and escort of Kuwaiti oil tankers, 1987-90, which involved numerous violent clashes with Iranian naval forces.

CENTCOM's biggest challenge stemmed from the Iraqi invasion of Kuwait in August 1990. Under Army Gen. H. Norman Schwarzkopf, its commander in chief, CENTCOM first organized the defense of Saudi Arabia and then launched the counterattack that ejected Iraqi forces from Kuwait, Operation Desert Storm.

Shortly after the war, the coalition launched Operation Southern Watch to prevent Iraqi attacks on ethnic minorities and revolutionaries in the south. Joint Task Force Southwest Asia was created to run the operation. After several months, Iraq began challenging the no-fly zone, and skirmishes have continued since.

In October 1994, CENTCOM staged Operation Vigilant Warrior, a response to Iraq's troop movements on the Kuwaiti border. In days, the coalition beefed up its Gulf presence to 28,000 troops and more than 300 aircraft, winning quick approval for basing from GCC countries. Iraq backed down.

The terrorist attack on the Khobar Towers housing complex in June 1996 prompted the US to move its Saudi-based forces inland to Prince Sultan AB, which also became the headquarters for Joint Task Force Southwest Asia. Originally a tent city, P-SAB has evolved into one of USAF's best-equipped facilities.

Renewed Iraqi attacks on the Kurds in the north brought about Operation Desert Strike in 1996, a sea- and air-launched cruise missile strike followed up by the deployment of F-117 stealth fighters to the region.

In December 1998, CENTCOM, under Marine Gen. Anthony C. Zinni, orchestrated Operation Desert Fox, which comprised four days of coalition airstrikes and missile attacks on Iraqi air defense and weapons development sites. The operation was intended to punish Iraq for its failure to comply with UN weapons inspections.

Zinni innovated what has been called "near-continuous presence" in the Gulf region. Under this philosophy, fewer units are deployed in the Gulf region at any given time in order to reduce stresses on the force.

However, ready forces on standby in the theater, backed up by frequent deployments of larger units, along with constant engagement and combined exercises are considered by CENTCOM to be an appropriate answer to intermittent Iraqi provocations.

nate their efforts as necessary. The two commanders also meet about every month or two to discuss procedures.

The Saudis perceive themselves as leaders of the Arab world, based on the kingdom's wealth, size, and its status as home to Islam's holiest cities, Mecca and Medina. Wald said the Saudis do not want to appear heavy-handed in dealing with other Arab nations, feel a genuine compassion for the suffering of the Iraqi people, and "would like to see Saddam go away."

To avoid the appearance of being too heavy-handed, though, the Saudis have strict rules regarding how their territory may be used to enforce the no-fly zones. For example, at Prince Sultan AB, known as P-SAB, US forces may deploy air-to-air missiles such as AMRAAM and Sidewinder as well as HARM anti-radar missiles, since these are all considered defensive weapons.

However, the Saudis have rebuffed US requests to deploy the satellite-guided Joint Direct Attack Munitions at P-SAB, even though it would be used only in response to Iraqi threats to the aircraft patrolling the no-fly zone. When such missions are warranted, they are conducted by aircraft based in Kuwait, which imposes no such restrictions.

War reserve stocks of weapons, vehicles, and spare parts have been stored in Saudi Arabia, however, with



DoD photo by SSGT. Len Butler

Illustrating the Total Force aspect of an Aerospace Expeditionary Force is this lineup of F-16s from Texas, New Jersey, and Vermont ANG units. Most active or reserve pilots have combat experience due to Northern and Southern Watch.

the proviso that they only be used in an all-out crisis.

No Enthusiasm for Sanctions

In some parts of the Arab world and Europe, support for sanctions on Iraq appears to be waning quickly. Only Britain continues to patrol the no-fly zones with the United States.

The Iraqi sanctions issue heated to a boil last fall. Aircraft from France and Russia as well as airplanes from other Arab states flew into Baghdad in apparent defiance of UN sanctions. Representatives of those and other countries said

that the economic embargo had gone on long enough and had only served to hurt the Iraqi people and not Saddam Hussein.

Wald said preventing civilian passenger aircraft from going in and out of Iraq was never part of the mission.

"What they're claiming is, they're flying in there and they're breaking the sanctions," said Wald. "They're not."

He explained, "We had allowed this to occur a couple of years ago, and Saddam quit allowing it to happen on his own. ... We have no problem with legal aircraft flying in there, announced, under UN approval."

The coalition doesn't want civilian aircraft flying through the no-fly zones, though, Wald said, "because of the danger they would encounter, ... not from us shooting at them, but from Saddam shooting at us."

(Shortly after Wald uttered this comment, Iraq began flying regular passenger service between Baghdad and Mosul and Basra through the no-fly zones.)

Wald asserted that the "implication that Saddam is getting resupplied from the air is specious." Ground borders between Iraq and Jordan, Syria, and Iran are "porous," he said, and all sorts of things—including technologies to develop Weapons of Mass Destruction—are getting through by smuggling on the ground.

Saddam "plays the information

USAF photo by SrA. Greg L. Davis



Patrolling the no-fly zone means being prepared to deal with not only the air-to-air threat but also the danger of ground-based missiles. These F-16CJs carry the HARM anti-radar missile for routine potshots taken by Iraqi forces.

Air Forces of the Persian Gulf

Bahrain

Fighter aircraft: 20: 8 F-5E/F, 12 F-16 C/D.

Personnel: 1,500 air force, 8,500 army, and 1,000 navy.

Exercises with US: Initial Link large flying exercise with GCC, every April–May.

US support: WRM storage, 254 short tons.

Kuwait

Fighter aircraft: 103: 16 S312 Tucano, 12 Hawk Mk 64, 21 A-4KU Skyhawk, 14 Mirage F1, 40 F/A-18C/D.

Personnel: 2,500 air force, 11,000 army, and 1,800 navy.

Exercises with US: Lucky Sentinel command exercise.

US support: Hosts Operation Southern Watch operations in four locations; weapon storage, 1,259 short tons.

Oman

Fighter aircraft: 43: 15 Jaguar, 12 BAC-167, 16 Hawk 102/203.

Personnel: 4,100 air force, 25,000 army, and 4,200 navy.

Exercises with US: Accurate test exercise of reinforcement by US assets.

US support: WRM storage, 6,381 short tons; weapon storage, 5,910 short tons.

Qatar

Fighter aircraft: 22: 5 Mirage F1, 6 Alpha Jet, 6 Hawk Mk 100, and 5 Mirage 2000.

Other noteworthy aircraft: 2 Boeing 707 transport, 1 Airbus 340 transport.

Personnel: 1,500 air force, 8,500 army, and 1,800 naval.

Exercises with US: Impelling Victory tactical exercise, every other year.

US support: WRM storage; 4,595 short tons of weapons storage.

Saudi Arabia

Fighter aircraft: 346: 80 F-5E Tiger II, 24 Tornado, 78 Tornado IDS, 92 F-15C/D, 72 F-15S.

Other noteworthy aircraft: 5 E-3A AWACS, 2 EC-135 Rivet Joint, 8 KE-3 tanker/transport, 7 KC-130H tanker/transport, 41 C-130E/H.

Personnel: 18,000 air force, 70,000 army, and 13,500 navy.

Exercises with US: Emerald Falcon air combat exercise.

US support: Hosts Operation Southern Watch operations, aircraft, personnel in two locations; weapon storage, 28,000 short tons.

United Arab Emirates

Fighter aircraft: 100: 8 Mirage RAD, 18 Hawk Mk 102, 19 Hawk Mk 63, 6 Hawk Mk 61, 22 Mirage 5, 27 Mirage 2000EAD. (Note: 30 Mirage 2000-9 and 80 F-16 Block 60 on order.)

Other noteworthy aircraft: 20 AH-64 Apache.

Personnel: 4,000 air force, 59,000 army, and 1,500 navy.

Exercises with US: Iron Falcon exercise set for spring 2001.

US support: Hosts tanker aircraft supporting Operation Southern Watch.

Iran

Fighter aircraft: 254: 30 MiG-29, 60 F-14, 50 F-4D/E, 60 F-5E/F Tiger II, 30 Su-24, 24 F-7.

Other noteworthy aircraft: 3 Boeing 707 tanker/transport, 1 Boeing 747 tanker/transport, 6 Boeing 747 freighter, 18 C-130E/H.

Personnel: 50,000 air force, 350,000 army, 20,600 navy, 125,000 Revolutionary Guard, and 40,000 paramilitary.

Iraq

Fighter aircraft: 310, including MiG-21, MiG-23, MiG-25, MiG-29, Mirage F1EQ5, Su-7, Su-20, Su-25.

Other noteworthy aircraft: 2 Il-76 tanker, 6 bomber (H-6D and Tu-22 Blinder).

Noteworthy air defense equipment: SA-2/-3/-6/-7/-8/-9/-13/-14/-16, Roland, Aspide.
Personnel: 35,000 air force, 375,000 army, 2,000 navy, 17,000 air defense.

Note: WRM = War Reserve Materiel. Personnel numbers are for indigenous forces.

Source: US Air Force and International Institute for Strategic Studies.

[game] a lot better than we do," Wald observed. While allowing his people to suffer famine and economic privation—and getting international sympathy as a result—Saddam has been spending his oil revenue on personal luxury and "doing his darndest to reconstitute his [Weapons of Mass Destruction]," Wald said.

"He continues to sell oil," Wald noted. "Under the oil-for-food program ... [Saddam is] allowed to sell \$5.6 billion worth of oil every six months," ostensibly to alleviate the plight of the Iraqi people.

He actually is probably selling, including smuggling, about \$20 billion worth a year, a figure that is greater than Iraq's pre-Gulf War oil income, Wald maintained.

Reconstituting Power

"He's spending his money on trying to reconstitute his military," Wald asserted. Among the spending projects are what Saddam calls "palaces." Said Wald, "He's built over 60 of

them since the Gulf War ended. Some of those 'palaces' house probably secret development programs."

There is plenty of money available to ensure that all of the Iraqi people get more than 2,200 calories a day, but Saddam is diverting the funds to try to re-establish his military, specifically WMD, according to Wald.

The no-fly zones were also originated "to keep Iraqi aircraft from bombing their own people. ... So we've done that," he added.

In Wald's estimation, Iraq has not substantively added military equipment since the Gulf War, and its air force has atrophied from extremely limited flights and almost no combat training. By most accounts, Iraq's integrated air defense system has been degraded by about 30 percent from its capability just after the Gulf War.

Nevertheless, in an unprecedented provocation since the no-fly zones were established, Iraq sent a MiG-

25 up and briefly into Kuwaiti airspace in late September. As it happened, it was a "down day" for Operation Southern Watch.

"It didn't do any harm," Wald said. "[Saddam] was actually trying to get us to do something in response to that. ... It was almost like a trap."

Iraq's main objective is to "knock an aircraft down," Wald said. "That would be a giant success in their minds. ... They know they're pretty much neutered from an air perspective in the south."

He added, "We have procedures in place now so that if he tries this again, it would probably be a bad thing for him to do."

Iraq continues to field what Wald described as "a fairly strong ground army, from the standpoint of numbers, and some tanks." The Iraqi air force, though, has not been upgraded in 10 years, and "he's having a very difficult time doing replacement of any serious military equipment."

Saddam has, however, replaced

knocked-out communications infrastructure and is laying large quantities of fiber-optic cable. Wald said that “we’re aware of what he’s doing. ... If and when we need to do something [to disrupt Iraqi communications] we have a way to do that.”

If the Gulf War had to be re-enacted with the forces now available, could USAF, which has reduced its size by about 40 percent since then, pull it off today?

Superior Capability

“Comparing what we can do now to Desert Storm is really a kind of apples-to-oranges comparison,” Ryan said.

While USAF enjoys far superior precision capability today than it did in 1991—all F-16s, for example, are capable of dropping precision guided munitions, now, and the stealthy B-2 fleet has a proven track record with the satellite-guided Joint Direct Attack Munition—the bigger question is what the scenario will allow, Ryan said.

“Can we get at more targets with precision now?” asked Ryan. “Absolutely.”

However, what the US has gained in precision it may have traded off in mass, Ryan said. Not only precision but also the ability to maintain “day/night operations, constant pressure” weighs into the formula, since the overall size of the force is much smaller.

“In some cases, technology doesn’t



USAF photo by SSgt. Lori M. Stewart

Security since the Khobar Towers tragedy is no joke. Even on a tightly guarded base like P-SAB, every effort is made to keep troops safe and to prevent complacency.

apply,” he said. “You can’t be in two places at once.”

Overall, though, Ryan said the new technology “allows us to achieve our end result faster.” Kosovo, he said, might not have taken 78 days “if we’d been turning on with all our technology early on.” Ryan said he thinks the force is “about the right size,” but he did allow that “quantity matters.”

Wald was even more upbeat. “I think we could do it with about half the sorties” flown during the Gulf War, he said.

“We just have a hell of a lot better

capability right now,” he explained. The US possesses more-accurate precision guided weapons, and many of those weapons have greater standoff range, Wald said. USAF has more stealth platforms, with larger payloads. Moreover, intelligence, surveillance, and reconnaissance capabilities are dramatically improved, most combat aircraft have capability for night vision systems, and “we’re much better now than during the Gulf War at doing nodal analysis,” which is the science of choosing targets whose loss will in turn affect many more of the enemy’s systems. Power grids and command-and-control facilities are two examples of key nodes.

From UN inspections and 10 years of watching Saddam, “we’ve got a lot better knowledge of Iraq,” Wald said.

“We would still need an MTW-type force; we’d still need a lot of aircraft,” to defeat Iraq, Wald summed up. However, with 1,500 sorties a day, “I feel confident we could do it.”

In the Wings, Iran

Wald said that, after Saddam is gone, the Iranian threat will likely make the US welcome in the Gulf for a long time to come. He believes that a division of Iraq would be in the interest of no one, and the other nations in the area would like to see “a reasonably strong Iraq that can counterbalance Iran.”

Asked how he’d feel about squaring off against Iran in an all-out



USAF photo by SSgt. Sean M. Worrell

Maintaining a presence in the Gulf isn’t just limited to fighters. This RC-135 performs a vital task in monitoring Iraq for signs that Saddam is becoming restless. Virtually every type in the USAF inventory visits the Gulf regularly.



The end of sanctions won't be the end of US involvement in the Gulf, so long as the area remains vital to US interests and the threat of aggression hangs in the air. The Air Force is prepared to stay as long as necessary.

fight, Wald said, "I hope we never have to do it."

Iran has a larger and more cohesive population than Iraq, greater sophistication, and according to Wald, a "stronger ... better trained" military.

Great distances separate bases in GCC countries and worthwhile targets in Iran. That fact alone would make it "a lot harder" to mount an effective air campaign against Iran, when compared with Iraq.

Also, Iran has not been the subject of constant surveillance for 10 years, as has been the case with Iraq. Iran's military has not been degraded as Iraq's has.

"The good news," Wald added, is that CENTCOM was set up "with Iran in mind," and the war plans used in Desert Storm had been rehearsed with Iran as a probable adversary. When the Gulf War was fought, "we did well," he said.

He acknowledged the rise of Iranian moderates who have relaxed their anti-US rhetoric and noted that the GCC countries have been sending out feelers to Iran for better relationships. Wald would welcome joint exercises with Iran—for example, search and rescue and disaster response. "I think it'd be a good idea," he said, but he cautioned that rebuilding a relationship with Iran would have to happen slowly. The situation in Iran, he said, is "delicate." He added, "We've got to be careful and go slow."

Wald sees the possibility of an Iranian-type Islamic revolution in Saudi Arabia as "very, very small" at this time. "They are more westernized in their thinking and their values than the Iranians probably ever will be," he said. The Saudis want to avoid inflaming the few radical elements in their society—"There's some, just like [in] every country," he noted—and prefer the US to keep a low profile as a result.

Wald went on, "I don't have any problem with that. I think the United States would feel the same way if we had Saudi Arabian forces flying near several major cities in the United States, defending America. We'd probably have a little sensitivity as well."

Wald said turf battles between services that characterized the era just after the Gulf War are over. The Navy, Army, and Marine Corps accept that the Joint Forces Air Component Commander needs to be in control of everything involved in Southern Watch, Wald said.

"The NAVCENT [Naval Forces Central Command] commander understands that the JFACC is in charge of Southern Watch," Wald said. When Navy or Marine aircraft take off from a carrier, they "chop" to the JFACC, "and that works just like a champ."

Likewise, when the Army deploys with the Apache helicopter, the helicopters, too, will be under the control of the JFACC, as will the Army

Tactical Missile System, which will also likely be part of the air tasking order, Wald said.

"Certainly it will be in the air-space coordination order, and like [in] Korea, I would suspect we will probably use ATACMS for some strategic targets. ... I doubt very seriously we would have a big argument about whether or not we ought to use those weapons in the early phases of combat."

Wald noted, "I don't think [the concept of the] JFACC is as threatening as it used to be," adding that there will also be a joint forces land component commander—to whom Marines will report in a war—and joint maritime component commander.

"That's just joint doctrine. It works. I think that's one of the reasons we're being successful."

The point, Wald said, is that "it's pretty mature over there. We're beyond some of the petty squabbling."

Wald believes the advent of the Expeditionary Aerospace Force concept has made no difference in operational terms but has had a huge impact on the morale of troops, who have far longer notice of a deployment to the Middle East. The change has been, from a theater commander's perspective, "transparent."

Morale has also been boosted by the dramatic improvement of living conditions at P-SAB, now among the best in the Air Force. Though troops deployed to P-SAB don't get much chance to leave the base during their 90-day deployments there, and they are not allowed to drink alcohol, "they are actually looking at that as maybe a nice time to get back in shape," Wald asserted.

One benefit of the long-term mission in the Gulf is that the vast majority of USAF pilots now have combat experience.

"Just prior to the Gulf War, we were just about out of combat experience from Vietnam," said Wald. "Well, now it's unusual if you haven't got some combat experience. That's a real plus. It's one of those intangibles that's hard to ... measure."

USAF's people in the Gulf are "real warriors," said Wald. He explained, "The Air Force ethos is changing. There actually is a warrior spirit. They act like it, they look like it, they're proud of it." ■

Verbatim

By Robert S. Dudley, Executive Editor

Remember the Kursk

"From our perspective, note to Moscow: The Cold War ended 10 years ago, and you lost. If, at any time, we thought we were threatened, the Russians would have had more explaining to do to their military families."—**Pentagon official quoted in Dec. 1 Washington Times, following several incidents in which Russian aircraft flew threateningly close to the carrier USS Kitty Hawk battle group.**

"Don't Ask, Don't Tell" Explained

"I think it [a 1993 attempt to lift the ban on gays in the military] backfired partly because the people that were against it were clever enough to force it. I tried to slow it down, but the first week I was President, Senator Dole—who, I think, saw it as an opportunity—decided to push a vote in the Senate disapproving of the change in the policy. I tried to put it off for six months, and the Joint Chiefs came down and raised hell about it.

"I wanted to do it the way Harry Truman integrated the military. He issued an executive order and gave the military leaders a couple of years to figure out how best to do it. But a lot of the gay groups wanted it done right away and had no earthly idea what kind of reaction would come. They were shocked by the amount of Congressional opposition.

"A lot of people think I compromised with the military. That's not what happened. We knew that at least 75 percent of the House would vote against my policy. If I was going to be able to do anything, I had to have a veto-proof minority in either the House or the Senate. But the Senate voted 68–32 against my policy, which meant that I could not sustain my policy in either house.

"And it was only then that I worked out with Colin Powell this dumb-ass don't ask, don't tell thing.

"I went to the Army War College and explained what the policy was going to be, based on the agreement we'd reached together. Then they wrote that into law, and then we had several years of problems, where it

was not being implemented in any way consistent with the speech I gave at the War College. ... General Powell had agreed with every word.

"[Secretary of Defense] William Cohen has now changed the training and a lot of the other elements that contributed to the fact that this policy continued to have a lot of abuse in it, and I think it's better now. But I still don't think it's the right policy. I think the policy that I wanted to implement originally was the right policy."—**President Clinton in interview with Rolling Stone, Dec. 28, 2000–Jan. 4, 2001.**

The Explanation Explained

"CORRECTION: Due to a transcription error, the words 'don't ask' were printed in the latest issue as 'dumb-ass' in our interview with President Clinton. We regret the error."—**Notice placed on Rolling Stone Web site one day after the publication of the Clinton interview.**

Prepare for Two Wars

"We'll have to be prepared to spend more. America is a very prosperous nation. We can afford whatever defense we feel is appropriate, and certainly, as we look toward the future, we'll move to maintain a robust, modern force that can respond [in] more than one place at a time. ... And in this regard, I think a two-MTW military capability ... serves us well because this capability allows us to go in two directions at one time. It helps define us as a global power. ... So, unless we're willing to say we're not going to worry about one of those two major theaters, we are accepting a considerable amount of risk today. So, the question becomes, how much more risk are we willing to take?"—**Gen. Henry H. Shelton, Chairman of the Joint Chiefs of Staff, in Nov. 16 remarks at a Washington conference.**

More Troops for the Army?

"Don't put these words in the Secretary of Defense's mouth or the Secretary of the Army's mouth. If we were to maintain the level of opera-

tions that we have today, probably, I would say, 40,000, 50,000, or 60,000 more soldiers [are needed]. If you look at what we're doing, we really are stretched."—**Gen. John Hendrix, commanding general of US Army Forces Command, in Nov. 30 remarks to the Defense Writers Group in Washington, D.C.**

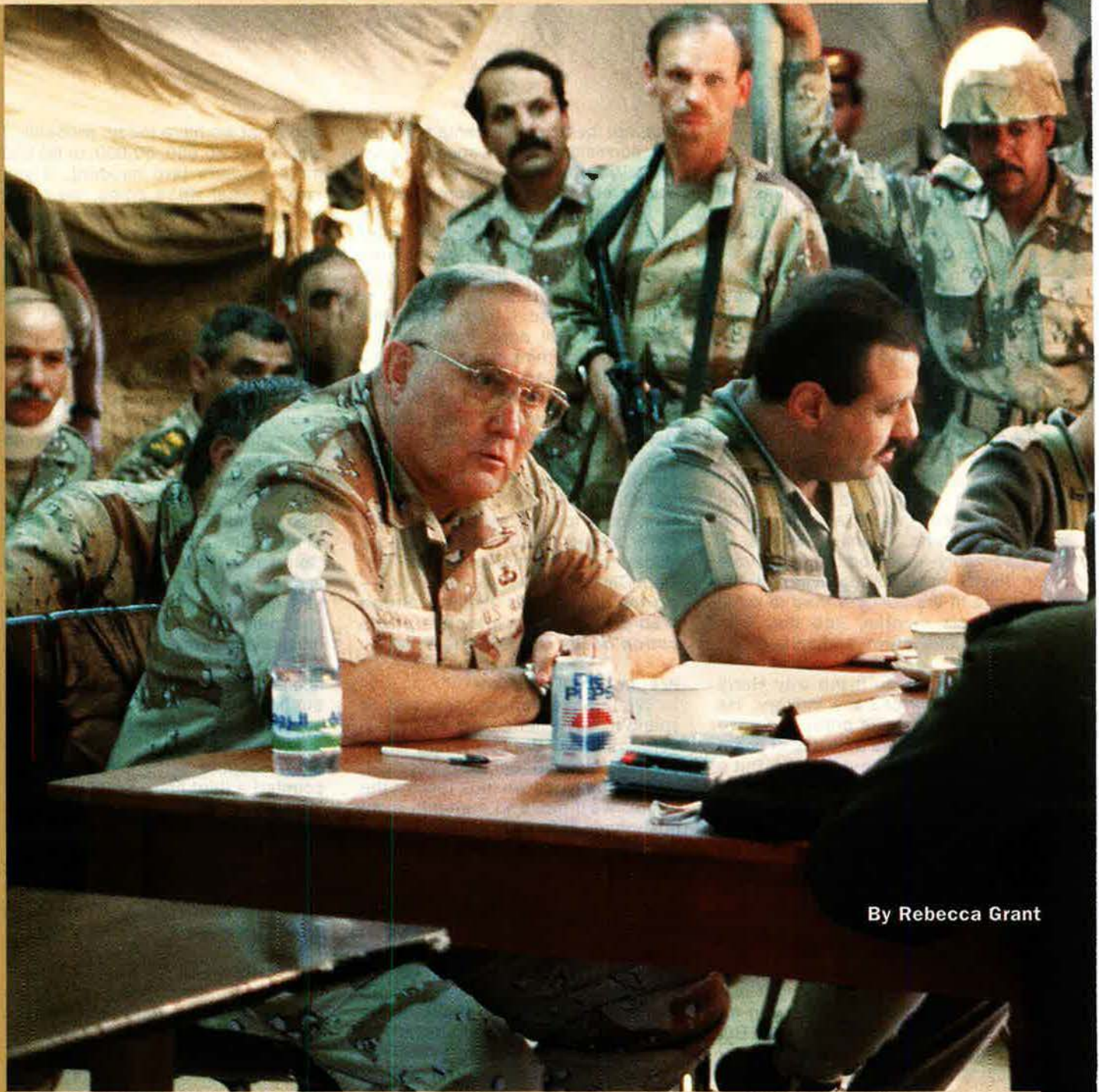
Schwarzkopf's Reproof

"It is a very sad day in our country when the men and women of the armed forces are serving abroad and facing danger on a daily basis in places like Bosnia, Kosovo, or on ships like the USS *George Washington*, yet, because of some technicality out of their control, they are denied the right to vote for the President of the United States, who will be their Commander in Chief. These men and women do not have the luxury of getting in their cars and going to the post office to mail their ballots. They must depend upon a system that takes their ballot directly from their front-line positions on a circuitous route to the ballot box. At the same time, because of other perceptions of irregularity, other ballots that have already been counted twice are now being counted a third time. For the sake of fairness alone, these armed forces ballots should be allowed [in the final tally]."—**Gen. H. Norman Schwarzkopf, retired commander of US forces in the Gulf War and advisor to Republican George W. Bush, in Nov. 18 statement to the press.**

The Navy's Old Air Force?

"One of the reasons I am having such a challenge right now with the current readiness issue [in the Navy] is because my air force is too old. We have real clear indications that the cost of maintaining this force is escalating. Three of the four CNO executive boards that I have had since taking office have been about the escalating costs and the flying hour totals [of the naval aviation arm]."—**Adm. Vern Clark, Chief of Naval Operations, in remarks to a Dec. 5 session of the Defense Writers Group in Washington.**

This traditional Army general was a driving force in one of the greatest air campaigns of all time.



By Rebecca Grant

Coming to terms. Gen. H. Norman Schwarzkopf, the commander in chief of US Central Command, presides at a March 3, 1991, meeting at Safwan, Iraq, with Iraqi representatives, called to dictate terms at the close of the Gulf War. Schwarzkopf's six-week air campaign had destroyed Iraq's command-and-control system, battered the Iraqi army's inventory of armored vehicles, and caused the desertion of thousands of Iraqi troops. Seated next to Schwarzkopf is Saudi Lt. Gen. Khalid Bin Sultan, commander of the Joint Arab-Islamic Force. Facing them are officers of the defeated Iraqi army, part of a delegation led by Lt. Gen. Sultan Hashim Ahmad, commander of Iraqi III Corps in Iraq.

Schwarzkopf of Arabia



GEN. H. Norman Schwarzkopf has spent little time over the last decade talking about airpower or any other aspect of Desert Storm. Aside from lucrative speeches and occasional television appearances, the famous Army officer who won the last big war of the 20th century has not been one to dwell on its intricacies.

He did not address the Army War College. He refused to let the Air Force interview him in 1992 for the Gulf War Airpower Survey. His agency, when approached, declares simply, "He never does interviews."

One who did succeed in talking with him after the war was Diane Putney, author of a definitive, classified study of air war planning for the Office of Air Force History. "It was while he was working on his memoirs," Putney recalled, "and he

threatened to sue me if I released any of the material before his book came out." She added, "I didn't think he was joking."

For all this, Schwarzkopf is still the best vantage point from which to assess airpower in Desert Storm. Air campaigns, like all joint military operations, can only be fully understood from the Commander in Chief's perspective. From French Marshal Ferdinand Foch in World War I to Gen. Wesley Clark in Kosovo, it has been theater CINC's who have found and used the unique strengths of airpower.

This Schwarzkopf did well. Air Force Gen. Michael J. Dugan, Chief of Staff when Iraq invaded Kuwait in August 1990, once remarked, "I would tell you, the airpower hero of the Gulf War is named Norman Schwarzkopf."

Near war's end, Schwarzkopf gave a thorough briefing in Riyadh, Saudi Arabia, on strategy behind Desert Storm. He also put his thoughts on campaign planning into his 1992 memoir, *It Doesn't Take a Hero*. Those two sources, when combined with views of those close to Schwarzkopf during Desert Storm, show why and how the CINC made airpower the center of Desert Storm.

In the post-Vietnam years, Schwarzkopf had held command positions in the US and Germany as the Army reformed and made AirLand battle a centerpiece. In late 1988, he pinned on his fourth star and took over at Central Command, where fighting Soviet forces in the Zagros Mountains of Iran was still on the top of the agenda. Schwarzkopf pushed CENTCOM to consider more realistic scenarios. In July 1990, CENTCOM

staff ran a wargame against Iraq. Schwarzkopf had actually briefed the Joint Chiefs of Staff on contingency plans just hours before Iraq invaded Kuwait on Aug. 2, 1990.

A Thunderous Surprise

Saddam's move took nearly everyone by surprise. Schwarzkopf hurried back to Washington to brief President George Bush and the National Security Council. He had little to offer. Schwarzkopf reported that the US could do nothing to stop Iraq, but "we could make certain moves with our air- and sea power to demonstrate US determination and, if necessary, punish Iraq."

The US—and its allies—were far from ready to contemplate a major deployment and operation in the Persian Gulf region. Iraq had a million-man army with some of the best Soviet and Chinese equipment available. Worse, Iraq had chemical weapons and had used them during the eight-year Iran-Iraq war. Against this, the US had no immediate attack options, no forces on the peninsula, and no military partners.

On Saturday, Aug. 4, Schwarzkopf and his air component commander, USAF Lt. Gen. Charles Horner, helicoptered to Camp David to brief Bush and a small team of officials and to find out what they wanted him to do. Schwarzkopf again told Bush and his counselors that "airpower was the option most immediately available."

Even that would take time. CENTCOM had already turned the aircraft carrier USS *Independence* back toward the Gulf. Air Force fighters and their tankers were on alert to deploy. Small units from the 82nd Airborne could arrive soon, but Schwarzkopf would have no real attack options for days. In two weeks, he would have a few hundred aircraft, rapid-reaction Marines, special forces, and Army ground units. What he really wanted was "tank-killing" equipment, from Apache attack helicopters to A-10s to tanks.

To defend Saudi Arabia, Schwarzkopf said, he would need three months to mass enough combat power to be absolutely assured of beating back an Iraqi attack. If the President wanted to kick the Iraqis out of Kuwait—which no one had discussed yet—he would need "eight to 10 months" to build up the forces.

The next step was a trip to Saudi Arabia with Secretary of Defense Dick Cheney to see King Fahd. When the king agreed to host US forces, Schwarzkopf told Horner to stay in Riyadh, get the tactical fighter squadrons moving, and act as CENTCOM Forward in charge of the joint force deployments and Saudi defense.

Two Burning Needs

Schwarzkopf needed two things: a way to defend Saudi Arabia and the ability to strike Iraq if Saddam made a crazy move. What if Saddam ordered his forces to seize the US Embassy in Kuwait and started killing Americans? What if Iraq launched a chemical weapons attack as it had done during the Iran-Iraq war? CENTCOM had little with which to reply.

The model that came to mind was Eldorado Canyon, the 1986 American air raid on Libya in which USAF and Navy aircraft struck Libyan sites in retaliation for Muammar Qaddafi's terrorism. The CINC needed something like the Libya raid, on a larger scale.

He also needed more help. Schwarzkopf had confidence in Horner—his most senior commander—but he knew Horner had his hands full in Riyadh. Schwarzkopf telephoned the Pentagon on Aug. 8 and asked that the Air Force "put planners to work on a strategic bombing campaign aimed at Iraq's military, which would provide the retaliatory options we needed."

The man who took the call was Gen. Mike Loh, the Air Force vice chief of staff. He recalled Schwarzkopf's saying that he had a decent air-land option in the works but needed an air campaign and broader set of targets. "I need it fast because he may launch a chemical Scud or chemical attack," and "I may have to attack those kinds of targets deep," the CINC told Loh.

Schwarzkopf's request cleared the Air Staff's Checkmate planning cell to accelerate work on an air campaign plan to bomb strategic targets. Checkmate's Col. John Warden and his team met with Schwarzkopf on Aug. 10, at CENTCOM headquarters near Tampa, Fla. The next day, they briefed Gen. Colin Powell, Joint Chiefs' Chairman, in Washington and resumed work on their plan. One week later they returned to Tampa

for a formal briefing to the CINC. The plan briefed by Warden on Aug. 17 concentrated on 84 targets. Using around 670 aircraft generating a total of 1,000 sorties per day, the campaign—dubbed "Instant Thunder"—would in six days destroy Iraq's strategic command and control, disorient its military forces, and disrupt the economy.

Schwarzkopf thought six days was overly optimistic and his CENTCOM staff had already picked out more targets, but he liked the look of Instant Thunder. "If we flesh this out, we'll have the retaliatory package we're looking for," he said. "I saw it as dual purpose—a retaliation plan and Phase I of an offensive option," Schwarzkopf later told Putney.

Instant Thunder was a stopgap measure. The CINC sent Warden and company on to Riyadh, where Horner and USAF Brig. Gen. Buster Glosson took charge of detailed planning for air options in line with Schwarzkopf's guidance. Schwarzkopf approved the strategic target concept presented to him via Instant Thunder, but he also wanted a more complete and executable air campaign plan that covered all his priorities—a real-world plan, as he told Glosson in a phone call. As Powell later put it, "We also needed an air plan to help drive Saddam out of Kuwait if it came to that."

Schwarzkopf was about to leave for Riyadh when Powell asked him to stop by the Pentagon to discuss offensive air and ground options. Schwarzkopf was surprised at Powell's sudden interest. He objected that he could not put together an offensive using the defensive force that was beginning to arrive in the theater. "I can give you my conceptual analysis," he told Powell, "but that's all it is—apart from the Phase I air attack, it's nothing I'd recommend."

Campaign Up His Sleeve

However, Schwarzkopf already had a theater campaign plan in mind. His briefing to Powell on the morning of Saturday, Aug. 25, unveiled the CINC's framework for Desert Storm. It was by no means a complete operational plan, but it did snap together all four phases of the campaign for the first time.

Putney, who reviewed the documents, said the CENTCOM staff

had prepared a multislides briefing for their boss, going all the way up to a major campaign culminating with a ground attack. This was the most extensive planning done to date. Unlike Instant Thunder, the CENTCOM briefing pictured the whole joint campaign from opening airstrikes to pounding the Iraqi army and ejecting it from Kuwait.

Airpower had a central role in the CINC's plan. The Aug. 25 briefing outlined four phases for a campaign: Instant Thunder, suppression of air defenses, attrition of enemy forces by 50 percent, and a ground attack. Phase 1 was to be an enhanced version of Instant Thunder. Phase 2—suppression of enemy air defenses—sounded like the plan of an airman, not a soldier. Putney saw the choice of words as evidence that the CINC “was listening to his airmen tutors.” Phase 3 was called “ground combat power attrition.” Phase 4, the ground attack, would come after air had done its work.

Phase 3 was the key to Schwarzkopf's plan. Even in rudimentary form, it tasked airpower to take down the strength of the Iraqi army before the ground attack. Schwarzkopf wrote of how A-10s could “fly low and slow over the battlefield, blasting tanks.” Schwarzkopf knew he could use airpower to kill tanks and artillery. It was his offsetting advantage against a bigger Iraqi force. With air attrition, breakthroughs and maneuver would be possible. Powell seemed satisfied.

Schwarzkopf was delighted when Horner and Glosson, in Riyadh, gave him a first look at their more complete three-phased air plan in early September. Schwarzkopf said: “Brigadier General Buster Glosson, Chuck Horner's top planner, had expanded the retaliatory scheme of the Pentagon Air Staff into the best air campaign I'd ever seen. It gave us a broad range of attack options and could be conducted as a stand-alone operation or as part of a larger war.”

Of more immediate importance, Schwarzkopf by the end of September believed he finally had sufficient air and ground power in theater to defeat an attack.

His only concern now was symbolic attack. If “Saddam had been able to sneak a few airplanes through our defenses, he could have caused great embarrassment to the United

States,” explained Schwarzkopf. “I would call Chuck Horner and say, ‘Guarantee me that not one airplane is going to get through your air defense net.’” Horner guaranteed him that no aircraft would leak through.

The Iran Factor

The real shortfall was in ground power. The first problem was that policy objectives remained uncertain. “Our orders were simply to deter and defend,” Schwarzkopf recalled. Some believed sanctions might work or that the US could not fight for Kuwait. Mirroring the Cold War strategy for the region, Schwarzkopf believed the US might want to keep Iraq viable to counterbalance Iran after the crisis was over. Ten years later, Powell recalled it the same way when he told MSNBC, “We did not want to leave Iraq defenseless, to Iran, its mortal enemy, with whom it had fought a war for eight years previously.”

This left Schwarzkopf without clear guidance. The question he faced was how to attack and defeat a numerically larger Iraqi force. He was convinced that there would have to be a ground attack to retake Kuwait. Schwarzkopf wanted Arab forces to play a prominent part in liberating Kuwait. Besides, Saddam was pouring reinforcements into the theater. The CINC was ready to execute an air attack if ordered to do so, but Iraqi forces were becoming more entrenched and numerous all the time.

When he looked at the ground situation, Schwarzkopf did not like what he saw. He brought to Riyadh a four-man team from the Army School of Advanced Military Studies, Ft. Leavenworth, Kan., to help with planning a ground offensive. On Oct. 6, they gave Schwarzkopf a briefing that looked to him just like what he had outlined two months before. With the forces then available, the best option was to drive straight for Kuwait City. The SAMS team estimated that this attack could leave 2,000 dead and 8,000 wounded and many more in the event of a chemical weapon attack.

Schwarzkopf was still mulling his problems with the ground offensive when he got the call to send a team to brief President Bush. He wanted to go himself but Powell ordered him to stay in Riyadh. Schwarzkopf suggested sending Horner in his place,

but Powell vetoed that, too, on the grounds it would cause too much disruption. The job fell to Glosson, who would brief the air campaign; Lt. Col. Joe Purvis from the SAMS team, who would brief the ill-starred ground plan; and Schwarzkopf's chief of staff, Marine Corps Maj. Gen. Bob Johnston.

At the White House, the briefing team reported that coalition airpower would reduce Iraqi forces by 50 percent before a ground attack. This was a remarkable step. Campaign plans for defeating a standing army in central Europe called for attrition of about 50 percent, but this was the first time that this was expected of the air component alone. The 50 percent number came up early in the planning process, and Schwarzkopf had talked about it several times. Briefing it at the White House emphasized that Schwarzkopf was making air attrition of the Iraqis the major precondition for launching the ground attack.

Schwarzkopf Asks for More

As for the ground attack, Schwarzkopf wanted more forces. He was so uncomfortable with the plans as they stood that he gave Johnston three slides to show at the White House. The first one said “CINC's Assessment: Offensive ground plan not solid. We do not have the capability to attack on the ground at this time.” Those attending the White House briefing had already reached that conclusion. Powell reported, “The White House is very comfortable with the air plan, but there was a lot of criticism of the ground attack.”

Schwarzkopf wanted to bring into the theater another heavy armor corps so that he could plan for a wide, flanking attack to the west. He got it. Planning for a two-corps attack with many NATO allies and coalition forces became an enormous task and one that required improvisation by the Army. Lt. Gen. John Yeosock, Army component commander, had to create out of thin air much of the structure to control and supply US forces.

At this point, Schwarzkopf made an important decision. Unlike Eisenhower, Schwarzkopf never delegated his authority to run the ground war. He did not want to put an extra layer of command between himself and the ground forces. Schwarzkopf ap-

pointed Army Lt. Gen. Calvin Waller to act as his deputy, but he did not let either Waller or Yeosock take over as joint force land component commander. Instead, Schwarzkopf was both Commander in Chief for the whole theater, in charge of integrating all joint operations, and land component commander in charge of the ground war.

On Nov. 14, Schwarzkopf gathered his senior commanders and let them in on the full plan for Desert Storm. He described for them the four phases of attack: "strategic bombing first; then gaining control of the Kuwaiti skies; then bombing Iraqi artillery positions, trench lines, and troops"; and, at the end, the ground offensive. Heavy armor was still deploying to the theater. When the air war began, they would need a few weeks to redeploy west for the flanking maneuver. Schwarzkopf estimated the ground attack could start no sooner than mid-February 1991.

The air war began at approximately 3 a.m., local time, Jan. 17, 1991. Coalition airpower was abundant and dominant. Schwarzkopf was able to make changes to the air operations based on tactical considerations and implement them within several hours. After the first few weeks, Horner recalled, the procedure at the nightly staff meeting was this: "The CINC turns to a map on his right and points to the Iraqi divisions he wants struck."

Schwarzkopf now "continued to work like crazy" on the ground campaign plan, monitoring preparations and visiting commanders and units all over the war zone. His role as the land component commander began to absorb all of his time. Schwarzkopf was focusing tightly on the final act and air shaping for the ground offensive.

First, the air war covered the Army corps redeployment to the west by taking out Saddam's ability to see what it was doing in Saudi Arabia, said Schwarzkopf. With the air campaign under way Iraq's forces were pinned and would not be able to maneuver to intercept the redeployment. "Once the air campaign started," said Schwarzkopf, Iraqi forces would be "incapable of moving out to counter" the swing even if they detected it.

The Iraqi action at Khafji proved Schwarzkopf was right about what would happen if Saddam tried to maneuver his forces in the Kuwait

Theater of Operations. On the night of Jan. 29, his 5th Mechanized division attacked the abandoned Saudi town of Khafji. Lead elements occupied the town and held it through the next day.

Encounter at Khafji

Saddam was probably trying to bruise Saudi forces and lure the coalition into ground action so as to inflict casualties. The CINC did not take the bait. To increase the margin of safety, Schwarzkopf ordered a phased redeployment in the Marines' sector to put a buffer of about 20 kilometers of territory between coalition forces and the Iraqis. Early on Jan. 30, the Saudis attempted to re-enter the town, but they "were forced to pull back and we sent in Air Force and Marine air," according to Schwarzkopf. Then coalition air "pounded the living hell out of the column all day long, until pilots were complaining they couldn't find targets because of smoke from ones they'd already hit." Coalition aircraft stopped an effort by another Iraqi division to reinforce Khafji, and by midday Jan. 31, Saudi forces and a Qatari unit retook the town with support from US Marine artillery and continuing fixed-wing and helicopter strikes.

As Horner stated, the battle was downplayed at the time "because we didn't really understand what the objectives of the Iraqi army were." Still, Schwarzkopf showed how he would use air to contain and break up the attack and isolate the front from maneuvers to reinforce it. He did not want to start ground action until his flanking attack was ready, and the superiority of the coalition's airpower meant that he did not have to do so. Most of the Iraqi 5th Mech ended up trapped between two of its own minefields for the rest of the war.

Evening the Odds

After Khafji, Schwarzkopf's main concern was deciding when to launch the ground attack. Airpower had to take out enough of Iraq's tanks and artillery to even the odds. The CINC explained the strategy at the end of the war: "Any student of military strategy would tell you that, in order to attack a position, you should have a ratio of approximately 3-to-1 in favor of the attacker. In order to attack a position that is heavily dug

in and barricaded such as the one we had here, you should have a ratio of 5-to-1 in the way of troops in favor of the attacker. ... We were outnumbered as a minimum 3-to-2 as far as troops were concerned. ... We had to come up with some way to make up the difference. ... What we did of course was start an extensive air campaign."

Iraq had about 4,700 tanks facing the coalition's 3,500 tanks and "a great deal more artillery than we do." Iraq had its infantry forces on the front lines with most armored units, including Republican Guards, curved around Kuwait. The CINC wanted specific results from the attacks. Breaching points had to be hit hard so that ground forces could penetrate fast and shift to exploitation. "It was necessary to reduce these forces down to a strength that made them weaker, particularly along the front-line barrier that we had to go through," Schwarzkopf said. The Republican Guard had to be prevented from reinforcing the garrison in Kuwait. Above all, Schwarzkopf wanted to keep his forces moving so they did not bunch up into easy targets for chemical weapons.

Getting to the desired level of attrition took time—and the wait bred confusion and frustration among the ground commanders. Schwarzkopf the CINC knew how well the air war was going but that did not always get through to other ground commanders. At the start of February, the ground commanders worried about not being allocated enough air sorties and wondered if the emphasis of air attacks would be shifted in time to give them eight or nine days of battlefield preparation in their sectors.

Schwarzkopf had not set a date for the ground attack. He postulated that it would occur between Feb. 10 and Feb. 20, giving ground forces enough time to redeploy westward. The ground commanders naturally wanted control of airpower in their sectors since it was their troops that would be going through the breaches. Historian Richard Swain of the US Army Command and General Staff College at Ft. Leavenworth pointed out that the issue was "who would control the fires" in the Phase 3 battlefield preparation. "The ground commanders assumed they would," Swain wrote, but as it turned out, "they were wrong."

Horner was in the thick of the controversy. With no overall ground component commander to set priorities, ground commanders discussed priorities every day, fruitlessly. As Horner described it, "We remained in some ways a debating society for air until the evening meeting, when Schwarzkopf would decide."

The Big Picture

Only Schwarzkopf—in his double role as CINC and ground commander—had full insight. He brushed off complaints from corps commanders about the number of sorties allocated. He had his own clear plan for Phase 3 and Phase 4, and in fact, he frequently restricted the support the joint forces air component commander gave to the corps commanders so that Iraqi divisions would be hit in the order Schwarzkopf wanted. For example, some front-line artillery was hit later to prevent the Iraqis from repositioning it. He knew the real measure was his map with the attrition percentages. Schwarzkopf tracked the air war like an airman and gave little thought to whether his senior ground commanders saw it as he did.

Each evening, Central Air Forces officers briefed Schwarzkopf on attrition inflicted on the ground forces. At first the tallies were small, but over time, destruction accumulated. By late February, airpower had destroyed almost half of Iraq's tanks, 30 percent of its other armored vehicles, and 59 percent of its artillery. On the enemy situation board almost all of the stickers that represented Iraqi units along the front lines had changed from red to green, indicating that the units had been bombed to 50 percent strength or less. Units on the second line of defense almost all showed up amber, which meant 75 percent strength or less.

By the start of the ground war, virtually all the front-line units were at or below 50 percent strength. These units had many conscripts and had shed 973 prisoners of war before the ground attack started. Schwarzkopf still wanted his forces to move through the obstacles fast. "The nightmare scenario for all of us would have been to go through, get hung up in [a] breach, ... and then have the enemy artillery rain chemical weapons down," said Schwarzkopf.

Armored units behind the front lines were a concern. "The real tough fighters we were worried about right here, were attrited to someplace between 50 [percent] and 75 percent," Schwarzkopf told the press a few days later. Several Republican Guards units remained at 75 percent or above. For Schwarzkopf, 50 percent was not an iron law but a guide. Based on the compiled daily reports, he was comfortable with the levels of attrition and trusted his instincts about the impact of the air campaign.

He told Cheney: "I think we should go with the ground attack now. We'll never be more ready—our guys are honed to a fine edge and if we wait much longer we'll degrade their preparedness." The Marines asked for two days to reshuffle their position. The new date for the ground attack was set at Feb. 24.

One more problem remained. Weather forecasters told Schwarzkopf there might be bad weather that night. Now Schwarzkopf was sweating out the weather just like Horner had back in January, and for the same reason. Without adequate flying weather for air support, no one wanted to launch the ground attack. Schwarzkopf still thought the coalition could take 5,000 casualties in the first two days and he wanted the right conditions.

Now came the final test for airpower. The ground war was launched in the early morning hours of Feb. 24 and was an immediate success. Ironically, it was during the ground war that Schwarzkopf's double role took its toll. The greatest power that Schwarzkopf kept for himself was the authority to integrate the air and ground components while commanding the ground component's operations. In the planning phases, his control was essential to crafting the campaign. But when the ground war started, the two roles competed for his attention. Mistakes at the end of the ground war put in jeopardy one of his major objectives: the destruction of the Republican Guard.

Official documents indicate that destruction of the entire Republican Guard was not an objective. Still, Schwarzkopf saw them as a center of gravity. While Schwarzkopf was absorbed with land operations, the fire support coordination lines for both VII and XVIII Airborne Corps were set far ahead of the advance in the early hours of Feb. 27, G+3 of the ground war. The intent was to leave room for rapid advance, but the effect was to keep airpower from interdicting retreating Iraqi forces. Airstrikes inside the fire support coordination lines had to be run by forward air controllers. Beyond the line, pilots could strike targets at will since no friendly forces would be nearby. Now, airmen had to slow the tempo for 17 hours in the XVIII Corps sector. And, VII Corps kept its fire support coordination line out 50 miles ahead of its position, giving two Republican Guards divisions a break from sustained air attack as they fled north. It was Horner who finally brought this to Schwarzkopf's attention and got the lines moved.

Just a few hours later, Powell called Schwarzkopf to tell him that President Bush was thinking of terminating the war in six hours, at 5 a.m. Persian Gulf time. "I don't have any problem with it," the CINC told Powell.

Ten years later, Schwarzkopf's achievement remains a source of insight into how airpower can be used in joint operations. His perspective on airpower oscillated from tactical preoccupation to strategic mastery, but in the end, his tasking of airpower gave him his victory.

In the 20th century, it was usually up to a theater commander without an airpower background to make the most of the air instrument. Some, like Eisenhower, MacArthur, and Nimitz, did it brilliantly. Schwarzkopf, too, made the most of what coalition airpower had to offer. "Gulf lesson one is the value of airpower," said President Bush after it was all over.

Schwarzkopf knew that before it all started. ■

Rebecca Grant is president of IRIS, a research organization in Arlington, Va., and has worked for RAND, the Secretary of the Air Force, and the Chief of Staff of the Air Force. Grant is a fellow of the Eaker Institute for Aerospace Concepts, the public policy and research arm of the Air Force Association's Aerospace Education Foundation. Her most recent article, "True Blue: Behind the Kosovo Numbers Game," appeared in the August 2000 issue.

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Special Assistant Pacific
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1-2-33 Komazawa
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The Pit



Staff photo by Guy Aceiro

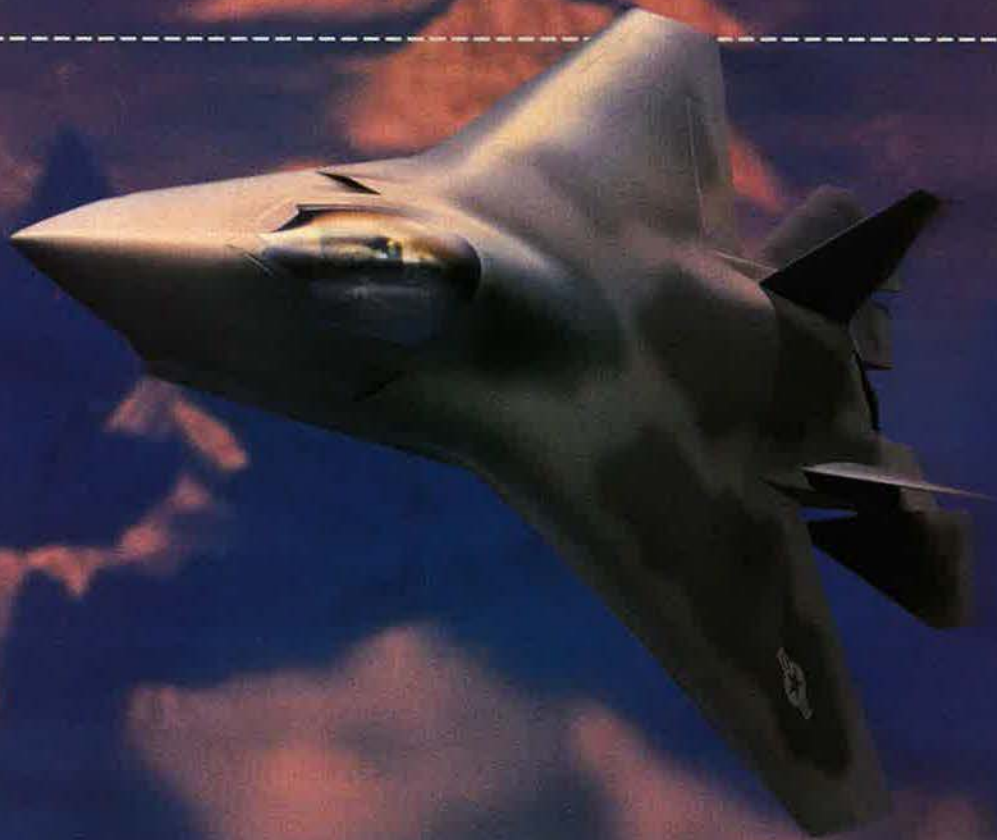
It has brush growing around it now, as shown above, but this concrete cross-shaped pit was a central element in the quest for Mach 1 at Muroc Army Air Field (now Edwards AFB) in the California desert. The Mach 1 research airplane—the Bell X-1—was air launched from the bomb bay of a modified B-29 to conserve rocket propellants for the actual high-speed flight at altitude. To attach the X-1 to the B-29, a tractor towed the X-1 and backed it down into the loading pit. Once the B-29 was towed to a point directly over the Bell aircraft, the X-1 was then hoisted by straps into position under the mother ship and secured with bomb shackles. On Oct. 14, 1947, the sound barrier was broken when a B-29 climbed to 20,000 feet and dropped the X-1 free; Chuck Yeager piloted it to Mach 1.06.





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JSTF

A day-by-day accounting of 1990–91 events in Operations Desert Shield and Desert Storm.

The Gulf War: A Chronology

July 17, 1990 In televised speech, Saddam Hussein warns he will attack Kuwait if his demands are not met regarding (1) old border dispute, (2) decrease in Kuwaiti oil production, (3) reduction in Kuwait's share of oil from Rumaila oil field, which extends under Iraqi territory.

July 18 Kuwait places forces on alert. US Ambassador to Iraq April Glaspie tells Iraqi Foreign Ministry that US insists all disputes in Mideast be settled peacefully.

July 19 Gen. Colin Powell, Chairman, Joint Chiefs of Staff, telephones Gen. H. Norman Schwarzkopf, commander in chief, US Central Command, to discuss contingency planning for defense of Kuwait and Saudi Arabia against attack by Iraq.

July 20 Iraqi newspapers report deployments of Iraqi troops to border with Kuwait. CIA reports 30,000 Iraqi troops deployed.

Last two weeks of July At Eglin AFB, Fla., Lt. Gen. Charles Horner, commander, US Central Command Air Forces, holds Internal Look, command post exercise postulating invasion of Saudi Arabia by "a country to the north." Considerable exercise time spent determining where US reinforcements would be deployed in Saudi Arabia in such contingency.

July 21 US installs mobile tactical air control center at Abu Dhabi, capital of United Arab Emirates.

July 24 US, UAE announce joint exercise.

July 25 Ambassador Glaspie summoned to meet with Saddam. He says he is dismayed at US support for Kuwait. As separate matter, he states he will not resolve dispute with Kuwait by force. Bush Administration officials announce willingness to use military force to defend the flow of oil through Strait of Hormuz.

July 26 Kuwait agrees to cut oil production to levels demanded by Iraq.

July 30 CIA reports 100,000 Iraqi troops, 300 tanks massed on Kuwait border. Iraqi, Kuwaiti, Saudi representatives meet in Jeddah, Saudi Arabia, to reconcile differences. Talks fail. Saddam reassures President Hosni Mubarak of Egypt, Saudi King Fahd ibn Abdul Aziz that he will not attack Kuwait.

Aug. 2 At 1 a.m., local time, Iraq invades Kuwait, using land, air, naval forces. President George Bush

issues Executive Orders 12722 and 12723, declaring national emergency; addressing threat to national security, implications for foreign policy; freezing Kuwaiti, Iraqi assets in US; freezing trade relations. Joint Staff reviews options, including CENTCOM Operations Plan 1002-90, top-secret contingency plan to move ground troops and supporting air and naval forces to region over three to four months. CENTCOM staff starts formulating air campaign for defense of Saudi Arabia. UN Security Council, in 14-0 vote with Yemen abstaining, passes Resolution 660 calling for the unconditional withdrawal of Iraqi troops from Kuwait.

Aug. 3 New US naval forces deploy. Powell confers with service chiefs on options. Bush makes no decision and chiefs defer any recommendation. Horner meets Schwarzkopf at MacDill AFB, Fla. They finalize concept for CENTCOM defensive air campaign for briefing to Bush.

Aug. 4 At Camp David, Schwarzkopf briefs Bush, Powell, Secretary of Defense Dick Cheney on concept for ground war. Also, Horner briefs concept for air campaign. *Eisenhower* battle group dispatched from Mediterranean to Red Sea. *Independence* battle group in Indian Ocean heads for north Arabian Sea.

Aug. 5 Bush vows Iraq's invasion of Kuwait "will not stand." He demands complete Iraqi withdrawal from Kuwait.

Aug. 6 Cheney, Schwarzkopf, Horner (at Bush's direction) go to Saudi Arabia to confer with King Fahd. US proposes Operation Plan 1002-90, which would place 250,000 US troops in Gulf region within three months. Fahd invites US, coalition forces into kingdom. Cheney, Schwarzkopf return to Washington. Horner stays in Riyadh, Saudi Arabia, as "CINCCENT Forward." Bush sends to Gulf F-15 fighters from 1st Tactical Fighter Wing (Langley AFB, Va.), troops of 82nd Airborne Division (Ft. Bragg, N.C.), maritime pre-positioning ships anchored at Diego Garcia and Guam.

Aug. 7 F-15s depart Langley for Saudi Arabia. *Independence* battle group arrives in Gulf of Oman, just south of Persian Gulf. US calls for other nations to send ground forces to aid defense of Saudi Arabia.

Aug. 8 C-141 carrying airlift control element lands in





Members of the 48th Tactical Fighter Wing, RAF Lakenheath, UK, wait to board a KC-10A on their way to Saudi Arabia for Desert Shield.

Dhahran, Saudi Arabia, first USAF aircraft in crisis zone. F-15s from 1st TFW, elements of 82nd Airborne arrive in Saudi Arabia. US Airborne Warning and Control System aircraft augment Saudi AWACS orbiting over Saudi Arabia. Iraq annexes Kuwait. Headquarters USAF activates contingency support staff. Schwarzkopf asks Lt. Gen. Mike Loh, USAF vice chief of staff, for help drawing up strategic air campaign. Checkmate, Air Staff planning group under Col. John Warden in Directorate of Plans, starts developing basic plan for strategic air war. Britain agrees to send air and naval forces to defend Saudi Arabia. West Germany, Italy, Spain agree to give US transports use of airspace and bases. Greece, Egypt authorize US airplanes to use airspace but not bases. Japan, Soviet Union, European Community express support for decision by US to dispatch troops.

Aug. 9 UN Security Council votes 15-0 to declare Iraq's annexation of Kuwait null and void (Resolution 662). Soviets state they will not participate in military intervention in the Gulf, adding that they oppose force and unilateral actions.

Aug. 10 DoD announces operation name, Desert Shield. Warden, staff brief initial air concept plan to Schwarzkopf at MacDill. He approves. USAF, Navy, Army units start arriving in Gulf in large numbers, stretching available facilities. F-16s from Shaw AFB, S.C., C-130s from Pope AFB, N.C., arrive. Horner draws up contingency plan for coalition forces to fall back to Bahrain, Qatar, UAE if Iraq attacks Saudi Arabia before sufficient defensive forces are in place. Saddam calls for Arab holy war against US troops in Gulf and "corrupt" Arab leaders who denounced his actions.

Aug. 11 Military Airlift Command adds capabilities with Guard-Reserve volunteers and aircraft. Strategic Air Command calls for Guard-Reserve volunteers for KC-135 tankers. Warden briefs air concept plan to Powell, who directs expanding it to ensure Iraqis cannot escape Kuwait before their tank force is destroyed. Powell suggests adding Navy, Marine aviators to Warden's group.

Aug. 12 Thirty-two KC-135 tankers deploy to Saudi Arabia as vanguard of tanker force soon to total more than 300 KC-10s and KC-135s. MH-53J Pave Low helicopters of 1st Special Operations Wing arrive in Dhahran. News pool deploys to Saudi Arabia.

Aug. 14 Soviet Union joins US, coalition in naval quarantine of Iraq. DoD announces presence of E-3

AWACS, KC-10s, KC-135s, RC-135s in Gulf region.

Aug. 15 F-117 stealth fighters from Tonopah, Nev., and F-4G Wild Weasels of George AFB, Calif., deploy.

Aug. 16 A-10 attack aircraft, Myrtle Beach AFB, S.C., deploy.

Aug. 17 Iraqi forces in Kuwait, heavily reinforced, build defensive positions along Saudi border. Warden briefs revised concept plan to Schwarzkopf, CENTCOM staff. Schwarzkopf directs Warden to take plan to Saudi Arabia, brief it to Horner. Stage 1 of Civil Reserve Air Fleet activates for first time in 38-year history of CRAF, as 16 civilian carriers provide 18 Long-Range International passenger aircraft and crews, 21 LRI cargo aircraft, crews. Air Force Space Command establishes DSCS satellite communications links for Desert Shield. First afloat pre-positioned ships begin off-loading in Saudi Arabia. Speaker of Iraqi parliament says citizens of "aggressive" nations will be held until crisis ends, threatens use of "human shields."

Aug. 18 John F. Kennedy battle group deploys to Gulf.

Aug. 19 Additional F-117 fighters deploy from Tonopah to Gulf.

Aug. 20 More US troops, including 82nd, 101st Airborne Divisions, 24th Mechanized Infantry Division, arrive. Horner concludes air, ground strength now sufficient to defend Saudi Arabia against Iraqi invasion. Warden and his group brief concept plan to Horner in Riyadh.

Aug. 21 USAF Gulf presence includes A-10s, C-130s, E-3 AWACS, F-4Gs, F-15s, F-15Es, F-16s, F-117s, KC-135s, KC-10s, RC-135s. Needing 6,000 Air Force reserve volunteers, USAF gets 15,000 ready to go in 72 hours. Cheney announces Saudi Arabia can now be successfully defended against attack by Iraq.

Aug. 22 Bush issues Executive Order 12727, invoking his authority to call to active duty up to 200,000 troops and units of Selected Reserve for duration of 90 days. Second Executive Order, 12728, suspends legal provisions relating to promotion, retirement, separation of members of armed forces. Stop-Loss action used to stabilize US military force for duration. Bush announces mobilization of 40,000 reserve forces.

Aug. 23 Cheney issues memorandum implementing call-up of reserves, setting maximum numbers: USAF, 14,500; Army, 25,000; Navy, 6,300; Marine Corps, 3,000.

Aug. 24 117th Tactical Reconnaissance Wing (Birmingham, Ala.) deploys six RF-4C aircraft to Gulf, joining RF-4Cs deployed by 67th TRW (Bergstrom AFB, Tex.).

Aug. 25 USAF F-111 fighters from RAF Lakenheath, UK, deploy.

Aug. 27 First sealift forces arrive in Saudi Arabia.

Aug. 28 Iraq declares Kuwait to be its 19th province. Bush, in meeting with 170 members of Congress, defines US objectives in Gulf—"immediate, complete, and unconditional withdrawal of all Iraqi forces from Kuwait, the restoration of Kuwait's legitimate government, security and stability of Saudi Arabia and the Persian Gulf, and the protection of American citizens abroad."

Aug. 29 C-5 transport, flown by AFRES volunteers and carrying active duty passengers and cargo to Gulf, crashes after takeoff from Ramstein AB, Germany, killing 13 of 17.

Aug. 30 Bush urges nations around world to help pay

costs, contribute personnel, equipment for Desert Shield. USAF F-16 fighters from Torrejon AB, Spain, deploy to Qatar.

Sept. 4-5 Idea of "second front" in Turkey briefed by Gen. Robert Oaks, USAFE commander, to Army Gen. John Galvin, CINCEUR, who in turn discusses it with Powell.

Sept. 5 Five ANG units begin deployment of C-130H aircraft.

Sept. 8 First AC-130H gunships from 16th Special Operations Squadron arrive in Gulf.

Sept. 11 Bush, in nationally televised address to joint session of Congress, asks for continued support for Gulf policy, repeats that Iraq's aggression "would not stand."

Sept. 12 Iran's supreme religious leader, Ayatollah Ali Khamenei, announces that Islamic "holy war" is justified against US and US troops in Gulf. AC-130H gunships from 16th Special Operations Squadron arrive in Gulf.

Sept. 13 In Riyadh, Brig. Gen. Buster Glosson (deputy commander, Joint Task Force Middle East) briefs Schwarzkopf and Powell on now-complete operational air war plan. Powell asks when USAF could execute plan. Glosson says, "Within 24 hours."

Sept. 16 In dispatch from Saudi Arabia, *Washington Post* quotes Gen. Michael Dugan, USAF Chief of Staff, saying US planned to unleash major bombing campaign against Iraq and that airpower would be effective.

Sept. 17 In response to *Post* article, Cheney fires Dugan, claiming he "showed poor judgment at a sensitive time."

Sept. 20 Guard, Reserve maintenance personnel called from units and assigned to MAC to cover surge to wartime sortie rates. Iraq's Revolutionary Command Council declares there will be no retreat and says "mother of all battles" is inevitable.

Sept. 23 Saddam threatens to destroy Middle East oil fields if Iraq is "strangled" by UN sanctions.

Sept. 28 Desert Shield sealift reaches peak with 90 ships at sea—69 en route to Mideast, 21 on way back for more cargo.

Sept. 29 *Washington Post* reports that US intelligence sources say Iraq had stockpile of biological weapons.

Oct. 1 British Prime Minister Margaret Thatcher rejects any negotiations with Iraq.

Oct. 2 *Independence* enters Persian Gulf—first car-



Airmen fill sandbags that will be placed around aircraft revetments during Desert Shield. An F-15C Eagle aircraft of the 1st TFW, Langley AFB, Va., is in the background.

rier to sail in those confined waters since 1974.

Oct. 4 *Independence* exits Gulf.

Oct. 10 USAF fighter units arriving in area of responsibility fly training sorties to prepare for desert warfare. F-15C combat air patrol is now routine. In US, small anti-war movement emerges. Relatives of some troops deployed to Gulf participate in Capitol Hill protest against Desert Shield.

Oct. 15 *L'Express* of Paris publishes article describing four-stage US plan to attack Iraq: (1) US Air Force destroys Iraqi air force; (2) US Air Force destroys Iraq's military industries; (3) US Special Forces cut out Iraqi communications lines; (4) US Army and Marines invade Kuwait. According to *L'Express*, operation would take four days and would cost 20,000 US casualties.

Oct. 18 Soviet envoy Yevgeni Primakov meets with Secretary of State James Baker and National Security Advisor Brent Scowcroft in Washington. On next day, Primakov meets with Bush to discuss Persian Gulf crisis.

Oct. 30 MAC launches Desert Express, overnight airlift to Gulf of critical items. Bush tells White House meeting of 15 Congressional leaders that he is growing impatient with absence of progress in Gulf and with "barbarous" treatment of US and other Western hostages in Iraq, factors that some interpret as signal that President is considering military action against Iraq.

Nov. 8 Bush announces US will deploy additional armed forces to provide coalition in Persian Gulf with offensive option. Press speculates total would be about 150,000 to 200,000 armed forces personnel, added to 230,000 already in Gulf region.

Nov. 9 DoD announces deployment of *Theodore Roosevelt*, *America*, and *Ranger* battle groups to Gulf. Several Republican Senators say Bush should call special session of Congress to approve President's plans for new military deployments in Gulf. Administration rejects proposal.

Nov. 13 Bush issues Executive Order 12733, extending by 90 days the active duty period of those called up under 10 USC 673b. Congressional leaders announce Congress will hold hearings on Persian Gulf in December. Some believe Congress should call special session to consider legislation giving Bush authority to launch offensive actions against Iraq without declaration of war.

Nov. 14 Hospitals at two bases in Britain and one in Germany prepare to receive casualties. Cheney autho-



Ground crews service these F-117A aircraft from the 37th TFW at Tonopah, Nev., as they prepare to deploy to Saudi Arabia during Desert Shield.

rizes activation of some 72,500 reservists that might be needed in Saudi Arabia.

Nov. 15 Bush tells CNN that world remains united against Saddam and Iraq's aggression against Kuwait. President says he has not made decision to launch offensive action against Iraq but maintains all options. President says he would continue to consult with Congress but dismisses need for special session of Congress to discuss Persian Gulf problem.

Nov. 17 Air Force Space Command repositions DSCS II satellite over Indian Ocean to improve communications support for Desert Shield.

Nov. 20 Forty-five members of House of Representatives file suit in US District Court in Washington to force Bush to seek Congressional approval before launching attack against Iraq.

Nov. 21 OA-10s from Davis-Monthan AFB, Ariz., deploy.

Nov. 22 Bush spends Thanksgiving in Gulf with US troops. EC-130 psychological operations aircraft broadcast Voice of America into Kuwait. Bush warns that Iraq is developing nuclear weapons.

Nov. 26 House Foreign Affairs Committee, House Armed Services Committee, Senate Foreign Relations Committee, Senate Armed Services Committee begin hearings on Gulf crisis.

Nov. 29 UN Security Council passes Resolution 678, authorizing use of force to expel Iraq from Kuwait. Resolution allows grace period, giving Iraq "one final opportunity" to comply with previous resolutions.

Nov. 30 Saddam rejects Bush's offer to send Secretary of State Baker to Baghdad. Two former JCS Chairmen, retired USAF Gen. David Jones and retired Adm. William Crowe, tell Senate Armed Services Committee that US should not rush into war with Iraq and should wait for economic sanctions to take effect.

Dec. 1 DoD enacts Stop-Loss authority (contained in Aug. 22 Executive Order) to prevent retirement or separation of troops having critical skills. Advisor to Soviet President Mikhail Gorbachev says USSR will not send troops to Persian Gulf.

Dec. 2 More F-117 stealth fighters deploy.

Dec. 3 Call-up alerts go to three ANG units: 169th Tactical Fighter Group (McEntire ANGB, S.C.); 174th TFW (Syracuse-Hancock IAP, N.Y.); and 152nd Tacti-



Strike camera footage from an F-117A shows a Baghdad Defense Ministry building in its crosshairs. Coalition forces used precision munitions and high technology to great advantage.



An F-111F of the 48th TFW takes off for a mission during Desert Storm. The fighter is armed with laser guided bombs.

cal Reconnaissance Group (Reno/Tahoe IAP, Nev.). AFRES 926th TFG (New Orleans) also alerted.

Dec. 5 152nd TRG, with RF-4Cs, deploys to Saudi Arabia to replace 117th TRW aircraft and personnel.

Dec. 6 Saddam announces he will release all civilian hostages held since beginning of crisis.

Dec. 8 First European Desert Express mission undertaken.

Dec. 19 Army Lt. Gen. Calvin Waller, CENTCOM second in command, tells press US forces won't be combat-ready by Jan. 15 deadline set in Resolution 678. Waller says forces won't be ready until late January or mid-February. However, over next few days, Pentagon and White House say US forces are ready and can respond to Iraqi attack if one is launched.

Dec. 20 ANG KC-135E units alerted for call-up. By end of year, SAC has 200 tankers in Gulf.

Dec. 21 USAF EF-111s deploy to Gulf.

Dec. 29 F-16-equipped 169th TFG deploys to Saudi Arabia, first ANG fighter unit to do so.

Jan. 2, 1991 ANG's 174th TFW deploys 18 F-16s to Saudi Arabia and, along with 169th TFG, is incorporated into 4th TFW (Provisional). CENTCOM announces US strength in Gulf exceeds 325,000.

Jan. 8 DoD announces US troop strength in Gulf is 360,000. Analysts estimate 540,000 Iraqi troops in or near Kuwait. Bush sends letter to Congress asking for resolution approving President's use of "all necessary means" to remove Iraq from Kuwait.

Jan. 9 In Geneva, Baker meets with Iraqi Foreign Minister Tariq Aziz, but talks fail.

Jan. 10 House and Senate begin debate on possible war.

Jan. 12 Congress, after intense debate, clears US forces for war against Iraq. House votes 250-183 to authorize President to use military force to implement UN Resolution 678 to force Iraq to withdraw from Kuwait. Senate votes 52-47 in favor of same authorization.

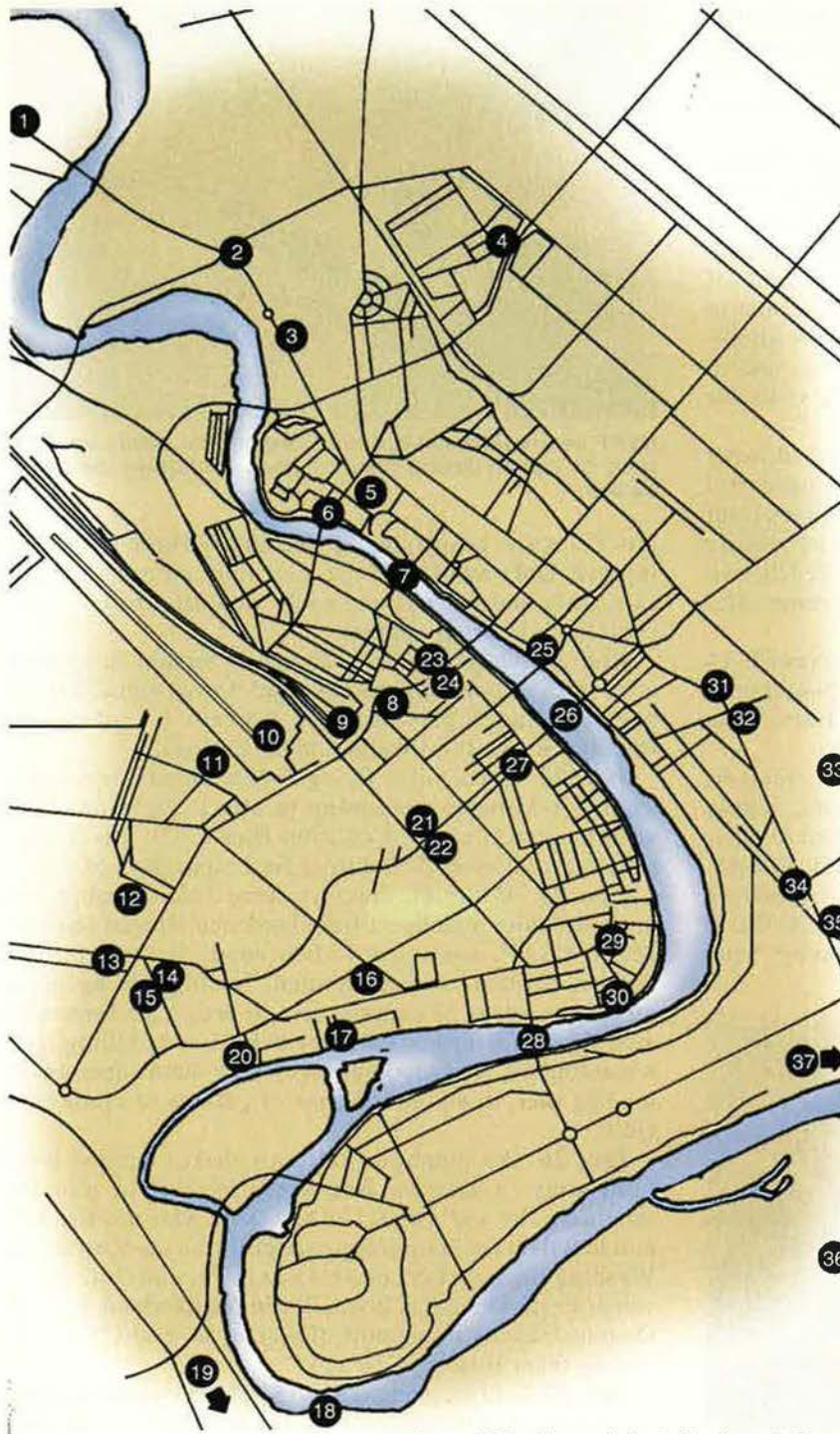
Jan. 13 UN Secretary General Javier Perez de Cuellar meets with Saddam, concludes there is little hope for peace.

Jan. 15 Deadline for Iraq's withdrawal from Kuwait passes. DoD announces US has 415,000 troops in Gulf, opposed by 545,000 Iraqi troops.

Jan. 16 CENTCOM announces 425,000 US troops in theater, supported by ground forces of 19 nations and

The First Day in Baghdad

During the first 24 hours of the war, coalition aircraft struck critical targets in Saddam's capital and elsewhere. Weeks of fighting remained, but the initial attack was so overwhelming that Iraq was unable to mount a coherent military response thereafter. First day targets in Baghdad are numbered on the map.



1. Directorate of Military Intelligence
2. Telephone switching station
3. Ministry of Defense national computer complex
4. Electrical transfer station
5. Telephone switching station
6. Ministry of Defense headquarters
7. Ashudad highway bridge
8. Telephone switching station
9. Railroad yard
10. Muthena airfield (military section)
11. Air Force headquarters
12. Iraqi Intelligence Service
13. Telephone switching station
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. Communications relay station
26. Jumhuriya highway bridge
27. Government Control Center South
28. Karada highway bridge (July 14th bridge)
29. Presidential Palace command center
30. Presidential Palace command bunker
31. Communications relay station
32. Secret Police headquarters
33. Iraqi Intelligence Service regional headquarters
34. Telephone switching station
35. National Air Defense Operations Center
36. Ad Dawrah oil refinery
37. Electrical power plant

Source: AFA's *Airpower in the Gulf* by James P. Coyne

naval efforts of 14 nations. First elements of USAFE Joint Task Force Headquarters deploy from Ramstein AB to Incirlik AB, Turkey, and prepare to establish USAF's first wartime composite wing. Seven B-52Gs, launching from Barksdale AFB, La., become first aircraft to take off on Desert Storm combat mission; BUFFs of 596th Bomb Squadron, 2nd Bomb Wing, carry super-secret, never-before-used AGM-86C Conventional Air Launched Cruise Missiles.

Jan. 17 Coalition air forces launch Desert Storm at about 3 a.m. local time (7 p.m. Eastern Standard Time on Jan. 16). Barksdale B-52Gs arrive over Saudi Arabia, launch 35 CALCMs against high-value Iraqi targets,

return to Barksdale, completing 14,000-mile, 35-hour nonstop mission—longest strike mission in history of aerial warfare. Coalition seeks to gain air superiority, destroy Iraq's special weapons capability, disrupt command and control. USAF Capt. Jon Kelk of 33rd TFW (Eglin AFB) shoots down Iraqi MiG-29 at 3:10 a.m. in first air-to-air victory. Coalition forces fly more than 750 attack sorties from land bases during early morning and day. US Navy launches 228 combat sorties from six carriers in Red Sea and Arabian Gulf. Turkey approves USAF use of Incirlik and Turkish airspace to open northern front against Iraq. USAFE immediately deploys aircraft to Turkey.

Jan. 18 Iraq launches Scud missiles against Israel, Saudi Arabia. Cheney activates CRAF Stage 2, raising total draw from airlines to 79 passenger aircraft and 108 civilian cargo aircraft. Navy Lt. Jeffrey Zaun captured after his A-6E is shot down.

Jan. 19 Two F-16Cs from 614th Tactical Fighter Squadron (Torrejon AB) shot down by surface-to-air missiles; pilots taken prisoner. Three more Scuds hit Israel, injuring 10. Iraq parades seven coalition airmen on television. US delivers to Israel two batteries of Patriot anti-aircraft missiles and US Army personnel to operate them. Bush signs Executive Order 12743, allowing him to call to active duty Ready Reservists and to extend tour of duty from six months up to two years for 160,000 reservists already activated.

Jan. 20 First Purple Heart of war awarded to Navy corpsman hit by shrapnel Jan. 17 while on Marine patrol near Kuwaiti border. USAF fighter-bombers attack Iraqi nuclear facilities, air defense complexes, Scud missile launchers. Iraqi TV broadcasts pictures of three US, two British, one Italian, one Kuwaiti airmen captured after their airplanes are hit by Iraqi ground fire.

Jan. 21 USAF MH-53J helicopter rescues Navy F-14 pilot more than 100 miles inside Iraq. Heavy bombing of Republican Guard in southern Iraqi city of Basra. Iraq fires 10 Scud missiles at Riyadh and Dhahran.

Jan. 22 After brief letup caused by bad weather, heavy air attacks resume in and around Basra, supply gateway to Kuwait, and against Republican Guard positions along Iraqi-Kuwaiti border. E-8A Joint STARS, orbiting over Saudi Arabia, detects large convoy moving toward Kuwait, vectors AC-130 gunship, two A-10s to attack. They destroy 58 of 71 vehicles in convoy. Scud



USAF pararescueman Sgt. Ben Pennington meets up with Navy Lt. Devon Jones, who had been shot down the night before.

USAF photo by MSGT. Timothy Hadryck

hits Tel Aviv, destroying 20 buildings. Three killed, 96 injured. DoD reports US has lost nine aircraft, Britain two, Italy and Kuwait one each. Coalition forces have shot down 17 Iraqi aircraft.

Jan. 23 Only five Iraqi air bases remain functional after week of bombing. Iraqi sorties down from 235 to 40 per day. Iraq begins dumping Kuwaiti oil into Gulf, torching Kuwaiti oil wells, other facilities.

Jan. 24 Saudi pilot flying F-15C shoots down two Iraqi F-1 Mirages attempting to attack coalition ships with Exocet missiles. Coalition flies 2,570 attack sorties, for total of 14,750 during first eight days of war.

Jan. 25 Coalition destroys three Iraqi bombers on ground. Major attacks on Iraqi hardened aircraft shelters begin. USAF, using new I-2000 bomb, has spectacular success. British airman captured. Intelligence agencies report execution of commanders of Iraq's air force and anti-aircraft defenses. Five Scuds hit Israel, killing one, wounding 40. Iraq sabotages Kuwait's main supertanker loading pier, dumping millions of gallons of crude into Gulf.

Jan. 26 Air emphasis shifts to strikes against Iraqi field army in Kuwait. Iraq sends aircraft to Iran for sanctuary (by war's end, 122 had fled). Marines fire 155 mm howitzers at Iraqi troops six miles inside Kuwait. In Washington, marchers protest war in Persian Gulf. Anti-war protesters march in Bonn, Berlin, Switzerland, France. Demonstrations in support of war in several US cities, among them Boston, Chicago.

Jan. 27 F-111s, using GBU-15 guided bombs, destroy oil-pumping manifold at Kuwaiti terminal, drastically reducing flow of oil into Gulf. Schwarzkopf announces coalition has attained air supremacy. F-16 "Killer Scout" operations begin.

Jan. 28 Baghdad radio announces at least one captured coalition pilot killed and others hurt in raids. Scud attack on Israel hits Arab villages on West Bank.

Jan. 29 US and USSR announce cease-fire possible if Iraq makes "unequivocal commitment" to withdraw all troops from Kuwait and takes "concrete steps" in that direction. In State of Union address, Bush repeats US goal is to "drive Iraq out of Kuwait, to restore Kuwait's legitimate government, and to ensure the stability and security of this critical region." Joint STARS detects 50 Iraqi tanks moving toward Saudi Arabia. Using deception, 1,500 Iraqi troops in three battalions attack Khafji

USAF photo by SSGT. J. Otero



The remains of a MiG-23 destroyed during Desert Storm.

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 (56%)
Iraqi fixed wing aircraft left at war's end	316 (44%)
Shot down	33
Destroyed in the open	113
Destroyed in shelters/bunkers	141
Fled to Iran	121
Total aircraft losses	408

in Saudi Arabia, come under coalition air attack. For first time, coalition ground forces counterattack. Elements of 1st Marine Division engage with anti-tank and automatic weapons.

Jan. 30 Marines lose three armored vehicles in battle for Khafji, while Iraqis lose 24 tanks, 13 armored vehicles. USAF fighter-bombers destroy oil pumping pipes and manifolds to stop one of biggest-ever oil spills. Commanders report US has lost 12 aircraft, UK five, Italy and Kuwait one each.

Jan. 31 AC-130H gunship, supporting Marines around Khafji, is shot down by Iraqi infrared surface-to-air missile, with 14 crew members killed. Two US soldiers are captured by Iraqi soldiers at Iraqi-Saudi border. Saudi troops, assisted by Qatari forces, US Marines, heavy air support, recapture Khafji. Coalition aircraft attack, rout two Iraqi divisions assembling north of Khafji for attack.

Feb. 1 Iraqi force, estimated at 60,000, masses for attack near Kuwaiti town of Al Wafra. Airstrikes drive Iraqis into defensive positions. Bush tells military families at Ft. Stewart, Ga., Iraq would not dictate when ground offensive would begin, and ground war would be launched only if needed.

Feb. 2 B-52 bomber goes down in Indian Ocean, returning to Diego Garcia after mission over Kuwait. Three crew members rescued, three lost.

Feb. 3 Iraq withdraws troops from Khafji area.

Feb. 4 Battleship *Missouri* uses 16-inch guns to pound Iraqi concrete bunkers in Kuwait, part of plan to deceive Iraqis into expecting Marine amphibious invasion. USAF fighter-bombers attack major targets at Tikrit, Saddam's home village 90 miles north of Baghdad. Coalition aircraft fly 2,566 sorties, bringing to 43,566 the total for first 19 days of war.

Feb. 5 Iranian President Ali Akbar Hashemi Rafsanjani offers to mediate between Iraq, US. USAF fighter-bombers attack Scud missiles, launchers. B-52s hit Republican Guard positions. *Missouri* knocks out two artillery emplacements, damages four others. *Missouri* destroys radar site and surface-to air missile position along Kuwait coast. At news conference, Bush says he is skeptical that air war alone can achieve desired result of removing Iraq from Kuwait.

Feb. 6 Capt. Robert Swain, 706th TFG (AFRES),



USAF photo by SSgt. Lee F. Corkran

A 401st TFW F-16C fighter from Torrejon AB, Spain, refuels from a KC-135 tanker as another F-16 stands by during Desert Storm.

shoots down Iraqi helicopter over central Kuwait in first-ever aerial victory by A-10. RAF knocks out key bridge across Tigris in Baghdad. US reports coalition aircraft have flown nearly 50,000 sorties, one-half of them combat attacks against Iraqi targets. US lists combat casualties as 12 killed, 11 wounded, 24 missing in action (plus three missing from noncombat posts), eight Prisoners of War. US troop strength reaches 503,000, other coalition troop strength reaches 200,000.

Feb. 7 Cheney and Powell head to Gulf for meeting with Schwarzkopf on air offensive and pending ground offensive. Some 21 House members send letter to Bush, urging President not to launch ground war because air war is succeeding and ground war would increase coalition casualties. US officials say 109 Iraqi fighter aircraft, 23 Iraqi transport aircraft have flown to Iran.

Feb. 8 As Iraqi-caused oil slick drifts down Gulf, Saudi desalination plant at Safaniya stops operation as precautionary measure.

Feb. 9 Scud hits Israel, injuring 26. Cheney, Powell meet for eight hours with Schwarzkopf. "Tank plinking"—picking off individual tanks with smart weapons—begins. Coalition sources tell press that 15 percent of Iraq's armor, about 600 tanks, and between 15 percent and 20 percent of overall fighting ability destroyed thus far in air war.

Feb. 10 Soviet Foreign Minister Eduard Shevardnadze tells Baker that Moscow will not deploy troops with the multinational effort in Saudi Arabia because of opposition at home.

Feb. 11 Coalition aircraft fly 2,900 attack sorties, bringing to 61,862 the total for 26 days of air war.

Feb. 12 Air attack destroys three downtown Baghdad bridges—Martyr's Bridge, Republic Bridge, and July 14 Bridge. Soviet envoy Primakov stops in Tehran en route to Baghdad, carrying Soviet peace plan. Saddam tells Primakov that Iraq would cooperate with efforts to arrange cease-fire in Gulf War.

Feb. 13 F-117 fighters bomb building in Baghdad that coalition forces believe to be military command bunker but which is being used as civilian air-raid shelter, and 200-400 civilians are killed. Iraqi armored division, caught moving at night, is destroyed by airpower.

Feb. 14 RAF Tornado is shot down by missile over Baghdad. Two USAF crewmen killed when EF-111A is lost in Saudi Arabia after mission over Iraq. Back in US,

USAF photo by MSgt. Kit Thompson



This close-up view of the tail section of a 23rd TFW A-10A aircraft from England AFB, La., shows the damage it sustained when an SA-16 missile exploded near it during Desert Storm.

anti-war demonstrators splash blood and oil on Pentagon doorway.

Feb. 15 Saddam's five-man Revolutionary Command Council announces that Iraq is ready "to deal" with UN resolution requiring withdrawal from Kuwait. US officials estimate three months of war against Iraq will cost \$56 billion, of which US would pay \$15 billion and other coalition members would pay \$41 billion.

Feb. 16 Two Scuds hit southern Israel.

Feb. 17 Heavy bombing of Iraqi army in Kuwait has, by this date, destroyed 1,300 of Iraq's 4,280 tanks and 1,100 of 3,110 artillery pieces, the Pentagon reports. Iraq's foreign minister, Aziz, arrives in Moscow for talks with Soviet President Gorbachev.

Feb. 18 Two US Navy vessels, amphibious assault ship *Tripoli* and guided missile cruiser *Princeton*, strike mines in Gulf, take significant damage. Aziz returns to Baghdad with peace proposal from Gorbachev. Soviet Union offers four-point peace plan: (1) unconditional Iraqi withdrawal from Kuwait; (2) protection for Iraqi territorial integrity; (3) no punishment of Saddam or other Iraqi leaders; (4) talks about other Middle Eastern problems, particularly Palestine problem.

Feb. 19 Bush declares Soviet peace proposal inadequate. Mixed force of F-4Gs, F-16s from composite wing in Turkey launch daylight attack on Baghdad from north. Coalition flies record 3,000 attack sorties; total for 34 days of air war rises to 83,000.

Feb. 20 US Army engages Iraqi reconnaissance unit, destroying five tanks, 20 artillery pieces.

Feb. 21 Iraq fires three Scuds toward King Khalid Military City in Saudi Arabia. US casualties reach 20 killed in action, 27 wounded in action, 29 missing in action (plus two noncombat missing in action), nine POWs. Coalition holds 2,500 Iraqi POWs. After meetings in Moscow with Iraqi Foreign Minister Aziz, Soviets announce that Iraq accepts Soviet peace proposal.

Feb. 22 US announces that F-15s of 33rd TFW (Eglin) have downed 15 Iraqi aircraft. Bush gives Iraq until 8 p.m. local time, Feb. 23, to begin withdrawing troops from Kuwait. Iraqi forces set fire to some 150 oil wells and other oil installations in Kuwait. White House estimates total cost of war would be \$77 billion and that other coalition members will pay about \$54 billion.

Feb. 23 B-52s pound Iraqi positions. Iraqis set 100



USAF photo by S/A. Chris Pulman

A B-52G bomber takes off on a mission for Desert Storm. At the start of the war, B-52s from Barksdale AFB, La., flew the longest strike mission in history of aerial warfare.

more Kuwaiti oil wells on fire. Total of coalition attack sorties flown during air war reaches 94,000. Schwarzkopf determines attrition of Iraqi combat effectiveness is sufficient for successful ground offensive with few casualties.

Feb. 24 G-Day. Coalition ground forces embark on what turns out to be 100-hour campaign. Tanks fitted with bulldozer blades punch holes in Iraqi defenses. Air war enters final phase—support for coalition ground forces. Schwarzkopf throws 100,000 troops into assault on Iraqi forces, which surrender in large numbers. Coalition attack sorties total 97,000.

Feb. 25 Scud hits Dhahran barracks used by US Army Reservists, killing 28, wounding more than 100. Baghdad Radio airs Saddam order for Iraqi forces to withdraw from Kuwait. At least 517 oil wells in Kuwait on fire. US and French forces secure coalition western flank inside Iraq. US Army 101st Division moves north to An Nasiriyah on Euphrates River. US 24th Mechanized Infantry Division turns east to cut off possible Iraqi avenues of retreat north from Basra. US and British armored units move eastward toward Iraqi Republican Guards armored divisions along Kuwait-Iraq border.

Feb. 26 "Mother of all retreats" features Iraqi soldiers attempting to escape envelopment of Kuwait. Thousands of military, civilian vehicles, loaded with looted goods, clog four-lane highway out of Kuwait City. Repeated air attacks destroy much of panicked army's equipment. Coalition forces engage Republican Guards between Kuwait-Iraq border and Basra. Other coalition forces seize Kuwait City and Al Jahrah.

Feb. 27 Coalition liberates Kuwait City, envelops Iraqi forces. Coalition, Iraqi units fight largest tank battle since World War II Battle of Kursk between Germans and Soviets: Two Army divisions decimate two Republican Guard divisions. Two specially made 4,700-pound GBU-28 bombs destroy "impregnable" Iraqi command bunker at Al Taji. Coalition attack sorties reach one-day record of 3,500. Bush announces that coalition forces would suspend offensive operations the next day at 8 a.m. local time. Bush says Iraq must end military action, free all POWs, third country nationals, and Kuwaiti hostages, release remains of coalition forces killed in action, agree to comply with all UN resolutions, reveal location of land and sea mines.

Feb. 28 Fighting stops. Iraq agrees to observe ceasefire, attend military-to-military talks on cessation of

USAF photo by Dick Moreno



The smoke from oil well fires burning in the distance forces drivers to use their headlights during the day. The fires were set by Iraqi troops as they withdrew from Kuwait at the close of Desert Storm.

hostilities. Coalition air forces fly 3,500 sorties, for total of 110,000. Iraqi Foreign Minister Aziz notifies UN Security Council that Iraq accepts 12 UN resolutions dealing with invasion of Kuwait. DoD says coalition forces destroyed or rendered ineffective 42 Iraqi divisions, captured more than 50,000 Iraqi prisoners, destroyed or captured 3,000 of 4,030 tanks in southern Iraq and Kuwait, destroyed or captured 962 of 2,870 armored vehicles, 1,005 of 3,110 artillery pieces, 103 of 639 aircraft (with another 100 or so in quarantine in Iran). Coalition forces continue to destroy captured and abandoned Iraqi armor and artillery. Coalition airplanes flew 110,000 sorties over Iraq and Kuwait, one-half of which were combat and one-half support (reconnaissance, air refueling, search and rescue, etc.) US casualties are reported as 79 killed in action, 212 wounded in action, 45



USAF photo by A1C Janel Schroeder

Col. David Eberly waves to the crowd gathered to welcome him and other former POWs as they return home after being held captive by Iraqi forces during Desert Storm.

US Air Force Flight Operations Summary

USAF's in-theater fighter, bomber, and attack aircraft at the height of the war numbered 693, or 58 percent of all US in-theater air assets.

These in-theater USAF combat aircraft flew a total of 38,000 wartime sorties.

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

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

USAF 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.

USAF C-5, C-141, KC-10, and Civil Reserve Air Fleet airlifters flew 14,000 long-range missions to the Gulf.

These airlifters delivered 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.

USAF 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 which executed the famous "left hook" flanking maneuver against Iraqi ground forces.

missing in action, nine POWs. (Casualties later revised to 613.)

March 2 Sporadic fighting erupts. Members of Iraqi tank column, evidently confused, come in contact with US troops, start shooting. Battle of Rumaila leaves 60 Iraqi tanks destroyed. Coalition forces occupy southeast corner of Iraq. Coalition air forces maintain "air occupation" of Iraq.

March 3 At Safwan in Iraq, Schwarzkopf and Lt. Gen. Khalid ibn Sultan, Saudi commander of Joint Arab-Islamic Force, and their associates from other coalition countries, meet eight Iraqi officers, led by Lt. Gen. Sultan Hashim Ahmad, commander of Iraqi III Corps in Iraq. Military leaders discuss cease-fire arrangements, including POW and detainee exchange, minefield locations, avoiding contact that could lead to armed clashes, coalition withdrawal as soon as formal cease-fire is signed. CENTCOM reports Iraqi equipment destroyed or captured increased to 3,300 tanks, 2,100 armored vehicles, 2,200 artillery pieces, and number of POWs increased to 80,000.

March 5 Iraq releases 35 POWs: nine Britons, nine Saudis, one Italian, one Kuwaiti, 15 US military personnel, including second woman POW, Army Maj. Rhonda Cornum.

March 8 1st TFW returns in victory to Langley AFB. Other early returning units include 42nd Bomb Wing (Loring AFB, Maine) and 55th and 9th SOSs (Eglin AFB).

March 10 Iraq releases 21 US POWs—including eight members of USAF. Former POWs return to Andrews AFB, Md., met by Cheney, Powell, several thousand spectators.

March 19 Redeployment of 545,000 US troops stationed in Gulf officially begins.

April 11 Iraq accepts all terms of UN cease-fire resolution. Gulf War officially ends April 11, 1991, at 10 a.m. EST. ■

Sources include:

Iraq-Kuwait Crisis: A Chronology of Events, July 17, 1990-Dec. 23, 1991, Congressional Research Service, April 6, 1992; *Airpower in the Gulf*, James P. Coyne, 1992; *Chronology of Significant Events*, US Central Command, 1991; *Conduct of Persian Gulf Conflict: an Interim Report to Congress*, Department of Defense; Military Airlift Command; Strategic Air Command; Air Force Special Operations Command; Air Force Space Command; Pacific Air Forces; Tactical Air Command; US Air Forces in Europe; USAF white papers, April 1991 and September 1991; Gen. Merrill A. McPeak, DoD press conference, March 15, 1991; Pentagon Working Document, United States Aircraft Losses, June 7, 1991; Gen. Charles A. Horner, USAF; Lt. Gen. Buster C. Glosson, USAF; Maj. Gen. John A. Corder, USAF; Col. John Warden, USAF.

The 1st Helicopter Squadron provides critical transportation on a moment's notice.



Capital Flying

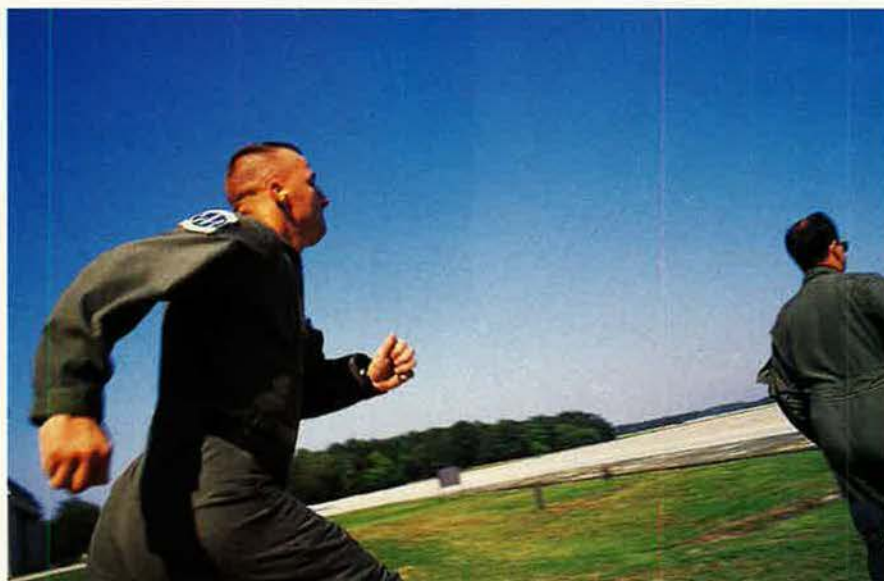
Photographs by Guy Aceto, Art Director, and Paul Kennedy

A UH-1N Huey from the 1st Helicopter Squadron, Andrews AFB, Md., flies over the Washington, D.C., area on a medical evacuation training flight to the National Naval Medical Center at Bethesda, Md.



Shutt photo by Guy Acello

They have transported VIPs, flown medical evacuations, participated in dramatic rescues, and garnered many awards along the way. The 1st Helicopter Squadron is among the special air mission units of the 89th Airlift Wing at Andrews AFB that provide safe, reliable, and high-priority air transportation for VIPs in the Washington, D.C., area. In July 1957, for example, the unit became the first helicopter squadron to fly an American President, landing on the White House lawn to pick up Dwight D. Eisenhower.



Over the years it has transported such dignitaries as Lord Mountbatten of Great Britain, Prince Bernhard of the Netherlands, and Gen. of the Army Omar Bradley.

The squadron keeps aircraft and alert crews always ready for such missions. The crews regularly practice dashing to the airplane. They work closely with the National Park Service, area hospitals, and other helicopter units in the national capital region. At left, a crew runs to an alert helo already set up by fast-acting crew chiefs.



The aircraft are cocked—already prepared with certain switches set ahead of time, to make a departure as quick as possible.





The crews know every paved runway and grass strip in the area and fly anywhere within a 200-mile radius of the Military District of Washington.

Medical evacuations have taken them to facilities in cities such as Pittsburgh and Christiana, Del.

At top, a 1st Helo aircraft touches down at a small local airport. Below, SrA. Bob Angel scans the horizon, keeping an eye out for other aircraft, birds, and—since the aircraft is flying at about 500 feet—radio station towers, antennas, and other tall objects.



At left is an aerial view of Bethesda hospital. A staff neonatologist at Bethesda can make a call directly to the squadron's flight surgeon, who will quickly confirm the need for air evac for a critically ill or premature infant. Help is on the way within minutes.



The 1st Helo was first organized at Andrews in August 1955 as the 1401st Helicopter Flight. Then, the unit flew two Piasecki/Boeing Vertol CH-21s and four Sikorsky H-19s. Thirty people manned the unit. Today, it has 19 twin engine UH-1N Hueys and is staffed by just under 200 people.



The squadron won the USAF Flying Safety Award in 1963 and has since earned many safety and maintenance awards. The unit reached more than 199,000 hours of accident-free flying in December, an important measure for a unit that transports more than 700 dignitaries a year.

Skilled personnel like TSgt. Kevin Kline, working on an engine at left, are key to this safety and reliability record. They allow many tasks—some of them practically depot-level maintenance—to be completed in house.

The unit's self-sustaining maintenance organization is coupled with complete avionics, instrument repair, and even sheet metal shops. A supply section maintains what the unit calls "one of the most resourceful parts stocks within a single organization." In 1994, the squadron started a section to fabricate its own aircraft seats and interiors. At right, SrA. Shane Barrious works in the sheet metal shop.





The helicopter crews are treated to a panoramic view of the city, its monuments, and landmarks—the White House to the left of the newly renovated Washington Monument (in the top photo) and the Jefferson Memorial at right. Reagan National Airport in the background at right is a reminder that the squadron's pilots fly in a heavy traffic area for a variety of aircraft.

The missions don't all involve views of landmarks. The 1st Helicopter Squadron has carried out operations as varied as dropping supplies to snowbound residents in a 1966 blizzard; helping apprehend a bank robber in 1976; assisting rescue efforts when an Air Florida 737 crashed into Washington, D.C.'s

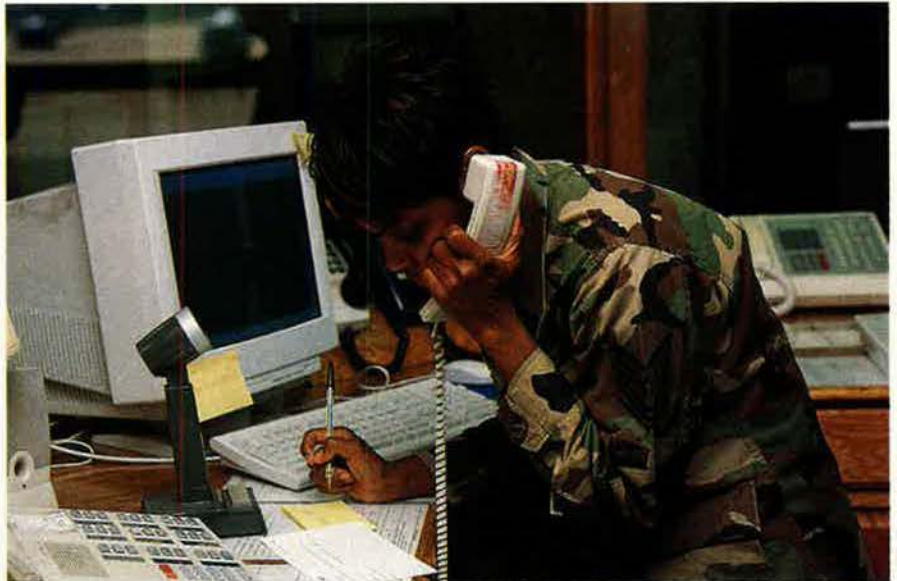


14th Street Bridge in 1982; and flying a medical evacuation in 1995 with 100-foot ceilings and visibility of less than a mile—a feat for which the crew received several awards.

At left, two views of the Potomac River as it winds its way south and with a college crew team training on its waters.

The unit's mission control section directs and monitors day-to-day flying operations.

At right, one of the first people to get the call for a mission is TSgt. Gail Howard, who is jotting down information at the squadron's command center. There is constant contact with aircraft out on sorties and the helicopters on the ground.



Photos by Paul Kennedy



Squadron members meticulously plan. But a typical day at 1st Helo often involves last-minute changes. No matter how carefully the crews have planned a mission—maybe even making a practice run to the landing site to be used—they might well have to reassess the flight plan or cancel the mission altogether. Flexibility is the watchword when transporting high-level decision-makers or responding to emergencies.

Here, 1st Helo members SrA. Shane Mitchell (left) and Capt. Mike Kardoos (middle) and Dale Linafelter go over mission plans.

Staff photo by Guy Acelo



Traffic in Washington underlines the need for quick, safe, and reliable transportation to and from places like the Pentagon, whose helipad (above) is tucked between the five-sided building and an interstate.





Staff photo by Guy Aceto

Above, a squadron helicopter makes its final approach into Andrews at the end of another sortie.

Helicopter crews must maintain a high level of combat preparedness.

Many come from or will go to the Special Operations Forces or rescue communities. The squadron has added night flights and Night Vision Goggles training to its schedule.

At right, Lt. Donald Snyder, Linafelter, and SSgt. John Rupprecht stop for a photo before heading into an evening with NVGs.

Although it's the secondary missions of VIP flights, medical evacuations, and search-and-rescue assistance that are the daily fare at 1st Helo, the unit's primary mission



Photos by Paul Kennedy



is to support DoD contingency plans for transport of key government officials should a national emergency arise.

Whatever the duty, members of the 1st Helicopter Squadron live up to its unit motto, "First and Foremost."



Submarine

How did the submarine community get to the front of the requirements queue?

By Richard J. Newman

THE numbers certainly sound distressing. In 1999, the US Navy's attack submarine fleet was not able to carry out 365 ship-days' worth of reconnaissance and surveillance missions. By mid-2000, it was on a pace to default on about 550 ship-days' worth of spying assignments handed down last year by commanders and senior Washington officials.

The problem: The Navy's fleet of 56 nuclear-powered fast attack boats is barely half as large as the Cold War force of 99 submarines, yet its intelligence taskings have nearly doubled since then. "We're stretched too thin," snapped Rear Adm. Albert Konetzni, commander of the Pacific

submarine fleet, in Congressional testimony. "I need more submarines."

The plight of the undersea fleet is not unique. Many communities inside the US military assert that they, too, are in need of more. The Army claims it requires an additional \$10 billion per year to transform itself into a more agile and lethal ground force. The Marine Corps is pleading for more troops. The Air Force wants extra funds for its aerial tanker force and its space programs.

Even within the Navy, the submariners face tough competition. Surface warfare leaders warn that they're about 20 ships short of their requirement, and naval aviators insist the

Up for air. Traditionally tight-lipped submariners have unexpectedly gone public with concerns about a shrinking fleet. Here, USS Bremerton (SSN 698) surfaces during a demonstration of emergency ascent.

Salesmanship



fulfillment of all missions requires 15 big-deck aircraft carriers—three more than the 12 currently in service.

In the fight for defense dollars, however, the submariners have a secret weapon: A Joint Staff study that specifically calls for giving the Navy 26 more attack submarines than it would be entitled to get under terms of the 1997 Quadrennial Defense Review, the blueprint for the contemporary force.

The QDR had determined that, by 2003, the Navy's submarine force would need no more than 50 attack boats, far fewer than the 73 undersea craft that were then in service.

Since then, say senior submariners, the demand for their services

has grown so much that there is now an acute shortage of undersea platforms. With the Joint Staff study providing the analytical backbone, the once-silent service has embarked upon a startling program of submarine salesmanship that has dominated Congressional testimony and media appearances in the general area of national defense.

Jewel in the Crown?

In a recent session with military reporters in Washington, Adm. Frank Bowman, the director of naval nuclear propulsion and the Navy's senior submariner, declared flatly that submarines are "the crown jewel in the nation's arsenal."

The case for more submarines, however, contains a major paradox.

The Navy's attack submarine force was built to shadow and, when necessary, destroy Soviet subs poised to fire nuclear-tipped missiles at United States soil. They also were charged with protecting America's own ballistic missile subs from the Soviet undersea fleet. Special missions such as monitoring foreign missile tests, eavesdropping on shore communications, and even sneaking into unfriendly harbors to observe activities there often were considered secondary duties.

Then the old Soviet empire collapsed, breaking apart into Russia and a collection of smaller coun-



Multiple missions. SEALs conduct a fast-rope descent to USS Hampton (SSN 767). Subs now spend more time monitoring missile tests, spying, and even sneaking into unfriendly harbors—once secondary duties.

tries, with Russia taking the submarines. By the time of the 1997 QDR, Russian boats rarely went to sea anymore. The dilapidated state of the Russian military seemed to permit broad reductions in the size of the US sub fleet, whose job it had been to keep the old Soviet Navy in the crosshairs.

Instead, submariners contend, the nation has a growing demand for the types of submarine spying missions that once were ancillary assignments. While intelligence-gathering activities are highly classified, submariners say they have been overwhelmed with requests for intelligence on countries such as North Korea, China, India, Pakistan, Libya, and Iran.

The proliferation of ballistic missile parts and other weapons—most often transported by oceangoing ships—keeps subs busy tracking smugglers. Foreign countries are becoming adept at evading the stare

of US spy satellites, which they can track from the ground. These factors, submariners argue, have raised the value of submarines, which can sneak close to a country's borders and raise surveillance antennas without being noticed.

Their stealthiness also makes subs attractive for other missions. Although subs carry fewer than half as many Tomahawk cruise missiles as cruisers or destroyers, they can fire them from a point much closer to shore and do so without being vulnerable to anti-ship missiles from coastal batteries or small patrol boats.

US attack boats still train for anti-submarine warfare against the few Russian subs that continue to go on patrol and against quiet diesel-electric subs operated by countries such as India, Iran, and North Korea. During the 1999 Kosovo war, USS *Miami* fired its full load of Tomahawks, monitored two Yugoslav subs

in Yugoslavia port, and then shadowed a Russian Oscar-class guided-missile submarine that cruised into the Mediterranean.

Needed: 68 to 76 Subs

The Joint Staff study quantified all those demands. The document is classified, but the Pentagon did release a terse two page summary of its findings. The unclassified paper said the Joint Staff had concluded that, in 2015, the Navy would need 68 attack submarines to meet all requirements. By 2025, it went on, the Navy would need 76 subs.

Submarine advocates now refer to those numbers as set-in-stone Pentagon requirements.

“Sixty-eight submarines is the requirement,” Rear Adm. Malcolm Fages, the Navy’s director of submarine warfare told Congress. “It is a requirement which has come from the unified commanders. It is not a requirement that has been generated within the Navy or within the submarine force so that we could then justify a force structure requirement.”

Perhaps, but the math has been subject to varying interpretations. The Joint Staff study also found that an attack sub fleet as small as 55 boats in 2015, and 62 in 2025, would still be enough to fulfill all war-fighting missions under current guidelines. Some demands for intelligence would remain unfulfilled, but the gaps would not be as pronounced as those anticipated in other areas of the military, particularly the gap between available strategic airlift and the amount actually needed to get troops and materiel to overseas theaters during wartime.

“They [submariners] have a requirement,” says a senior Pentagon official. “That doesn’t mean it’s affordable. It means you accept the loss of those mission days.”

Even that gap may be exaggerated—or so say officials involved in programs and activities that must compete against the submariners for resources.

“The CINCs [regional commanders] are asking for their services,” explains a naval surface warfare officer, but there are others who “have to look for relevancy.” And with another QDR looming in 2001, claims of unfulfilled missions bear the hallmarks of posturing for a budget battle.

“Bowman sees a unique opportu-

Distribution of Navy Ships, 1990 and 2000

	1990		2000	
	Number of ships	Percentage of fleet	Number of ships	Percentage of fleet
Aircraft carriers	15	3	12	4
Surface combatants	213	37	116	37
Attack submarines	97	17	56	18
Ballistic missile submarines	35	6	18	6
Amphibious ships	66	11	39	12
Combat logistics ships	60	10	34	11
Mine warfare ships and fleet auxiliaries	88	15	41	13
Total	574	100	316	100

Source: Congressional Budget Office

Capabilities of US Attack Submarines

	Los Angeles Class (Improved)	Seawolf Class	Virginia Class
Size			
Displacement (tons, submerged)	6,900	9,100	7,800
Length (feet)	360	353	377
Draft (feet)	32	35	31
Beam (feet)	33	40	34
Speed (knots)			
Maximum	33	35	34
Tactical (silent speed)	na	20	na
Operating depth (feet)	950	1,600	800+
Crew size	129	133	113
Armament (number of missiles or torpedoes)	37	50	38
Weapon launchers			
Torpedo tubes (21 inches)	4	8	4
Vertical launch system cells	12	0	12

Source: Congressional Budget Office

nity with the QDR to make the case for an increase in sub force structure," says a senior Navy official. By treating the higher numbers from the Joint Staff study as a baseline, he says, Bowman is trying to make a bigger sub force a fait accompli. "It's a very clever, subtle thing he's doing. The real number to meet the most critical requirements is 55."

Year of Decision

Ultimately, it will be the Chairman of the Joint Chiefs of Staff, Gen. Henry H. Shelton, and the incoming Defense Secretary who decide whether to pump up the submarine force over the next two decades. The 2001 QDR that they direct will re-examine all the spending priorities laid out in the last QDR. Shelton and others promise that the new QDR, unlike the 1997 version, will first lay out a coherent strategy for dealing with multiple conflicts in the world. Then it will determine how many troops and weapons systems will be required to fulfill that strategy. If political leaders aren't willing to spend the money to do everything the strategy calls for, then the strategy will be scaled back, claim Pentagon officials.

In an ad hoc way, that's already happening. In addition to lost mission days, submariners complain about fewer "engagement days" when they build goodwill with other navies through exercises and port calls. "How do you have influence," wondered Konetzni at last summer's

Congressional hearing, "when your friends come to you and say, 'Are you angry at us? You won't exercise.'"

Despite their pleas for more boats, senior submariners acknowledge that actually getting the requisite amount of money will face long odds. The Navy's 30-year shipbuilding plan calls for building just one of the new Virginia-class submarines in each of the next 14 years. Reaching the preferred Joint Staff levels of 68 subs in 2015 and 76 in 2025 would require building Virginia-class subs at more than three times that rate.

"It would consume virtually all of

the shipbuilding budget today," acknowledged Bowman in his meeting with reporters.

A recent Congressional Budget Office report laid out in detail the implications of maintaining even the current sub fleet.

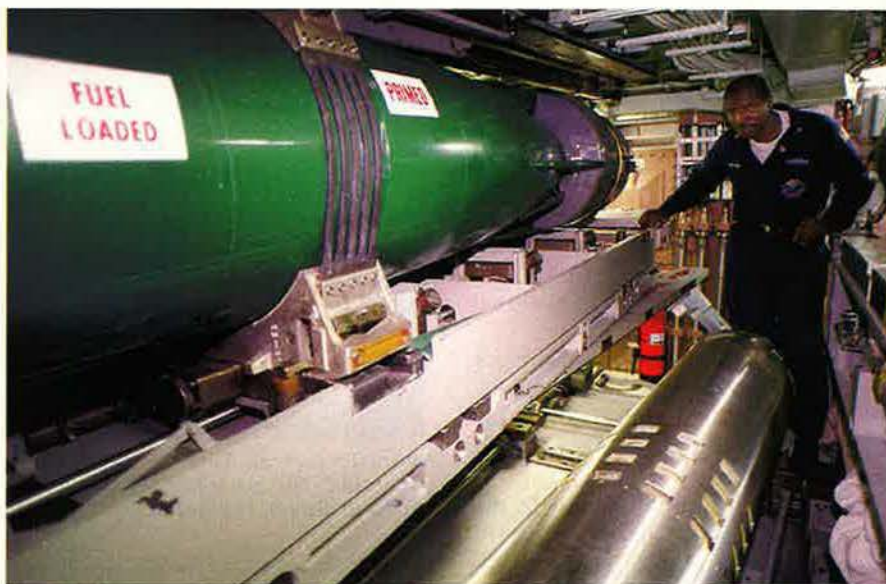
"The Navy plans to build less than one attack submarine a year between 2000 and 2006," said CBO's report. "That low rate of production is sufficient to maintain a fleet of 55 attack subs through 2015. ... But continuing to build one new attack submarine a year indefinitely would lead to a fleet of 28 by 2028, and 33 in the very long term, as older subs were retired at a faster rate than they were replaced.

"Maintaining the 55-sub force for a longer period means that the Navy must increase procurement to two submarines a year after 2006. Annual costs for producing two submarines a year would be about \$3.5 billion—approximately half of the Navy's total shipbuilding budget for 2000 (a year in which the Navy is not buying an aircraft carrier)."

More With Less

In addition to pleading for more Virginia-class boats—at nearly \$2 billion apiece—submariners are exploring ways in which they can further stretch the service life of the existing fleet.

One option is to convert four soon-to-retire Trident subs—the big "boomers" that prowl the deeps with



All business. Machinist Mate 2nd Class Richard Powell checks alignment of torpedoes aboard USS Tucson (SSN 770), one of 56 nuclear-powered subs. Each boat is powerful and versatile but also very expensive.

US Navy photo by PH2 Jeffrey S. Viano

The Navy's Planned Purchases of New Ships and Aircraft Through 2020

	2000-05		2006-20	
	Total Purchase	Annual Average	Total Purchase	Annual Average
Ships				
Aircraft carriers	1	0.2	4	0.3
Surface combatants	14	2.3	48	3.2
Submarines	5	0.8	38	2.5
Amphibious ships	11	1.8	5	0.3
All other	14	2.3	33	2.2
Total	45	7.5	128	8.5
Aircraft				
Fighters	267	44.5	219	14.6
Strike aircraft	0	0	984	65.6
Medium-lift aircraft	246	41.0	374	24.9
Trainers	160	26.7	210	14.0
All others	37	6.2	439	29.2
Total	710	118.3	2,226	148.4

Source: Congressional Budget Office

nuclear-tipped ballistic missiles—into guided-missile boats carrying as many as 154 conventionally armed Tomahawk cruise missiles. Such nuclear powered guided-missile submarines, designated SSGNs, might be equipped to handle some spying missions themselves. More importantly though, they'd carry the firepower of five or six standard attack boats, which could be freed for other missions.

These new SSGNs would last as long as 20 years. However, the conversion would cost about \$600 million per ship, which could put them into funding competition with other Navy warships.

The Navy also may refuel the nuclear cores of eight of its older attack subs, which would coax an extra 12 to 13 years of service life out of them. That would cost about \$230 million per ship, about half of which is already available if that's how the Navy chooses to spend it. But some inside the Navy would like to see that money used as a down payment on SSGNs.

Submariners are also looking for ways to get more use out of the attack subs already in the fleet, which only spend about half of their time at sea.

One plan, which most view as the most promising of the lot, calls for permanently stationing as many as five attack boats at Guam, just as the Navy keeps a carrier battle group homeported in Yokosuka, Japan.

Building a sub base on Guam would cut transit times so much—compared with basing them in Hawaii, for instance—that forward deployed subs could spend up to three times as many days on station.

New technology may also produce more spying per submarine.

"An increase in attack submarine sensors and weapons," says Ron O'Rourke of the Congressional Re-

search Service, "could in the future help permit an attack submarine force of a given size to perform significantly greater numbers of missions than is possible today."

The Navy's submarine force evinces less enthusiasm for another innovative idea: "double crewing." After a time at sea, one crew would simply turn the sub over to another crew, which means the sub would spend less time in port and more under way.

Even though the Navy runs its fleet of 18 nuclear-missile-carrying boomers with such "blue" and "gold" crews, submariners argue that the model wouldn't work with attack subs.

"We don't have the people to do that," insists Bowman. "I don't have in my bottom drawer 56 standby crews."

Beyond that, he says, it is much easier to swap crews on boomers, which go on routine, predictable patrols, than on attack subs, which during a deployment often are tasked to do a number of unanticipated missions in strange waters.

"We are not going to stiff-arm this concept," says Bowman, "but we are going to study it very, very carefully and be careful before we move forward." ■



Pacific patrol. Two US attack boats with a South Korean sub in Pacific exercise. The Navy is considering the permanent stationing of perhaps five subs at Guam, the better to squeeze more operating time from each warship.

Richard J. Newman is the Washington-based defense correspondent and senior editor for US News & World Report. His most recent article for Air Force Magazine, "The Misty FACs Return," appeared in the October 2000 issue.

US Navy photo by PH1 Franklin P. Call

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Registration/Fees

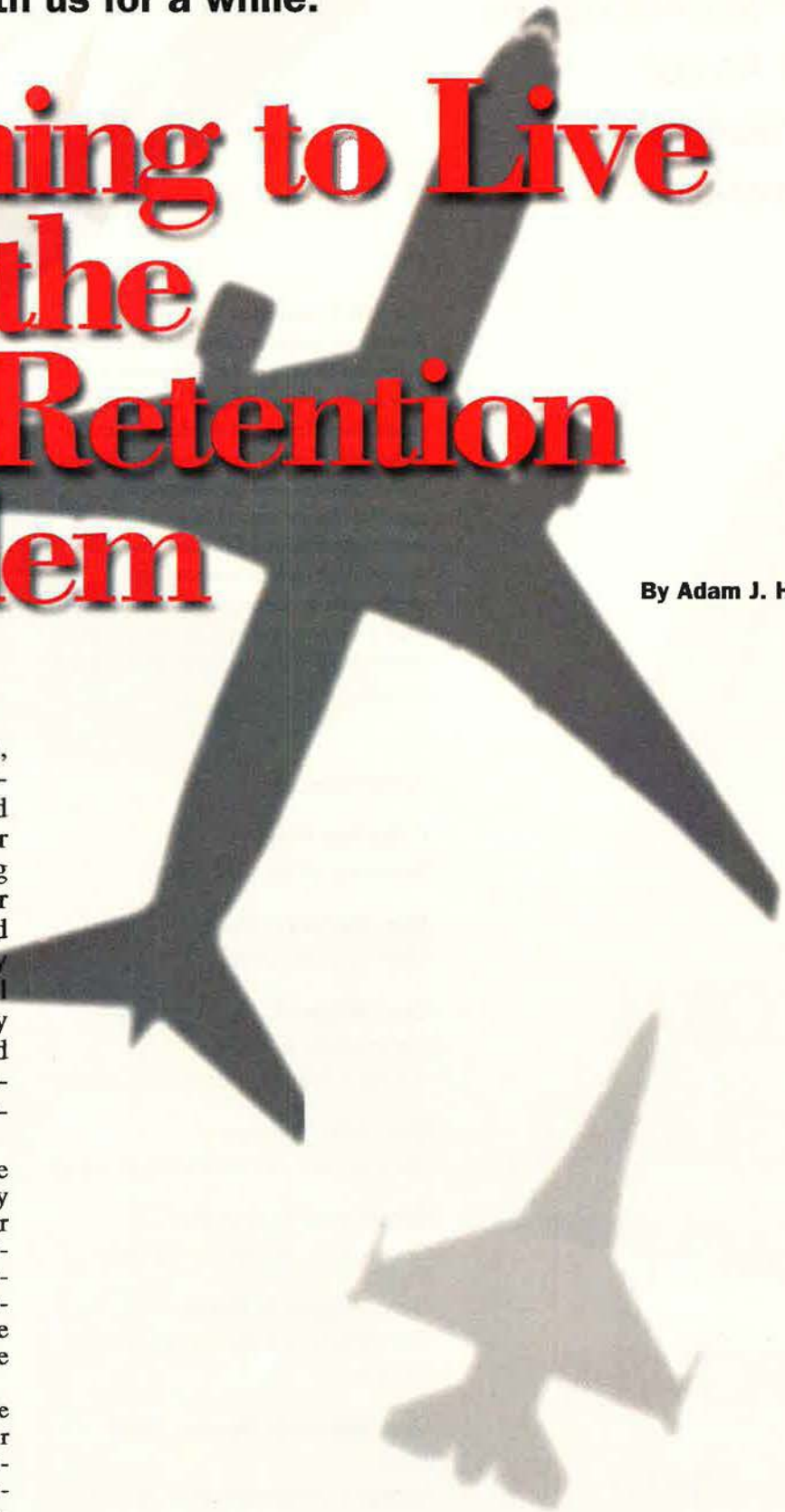
Symposium registration fee is \$595. Reduced rates for advance registration: \$550 for representatives from AFA Industrial Associate companies and \$520 for AFA individual members. Advance registration closes Feb. 7. All registrations after Feb. 7 will be at the \$595 rate. No refunds can be made for cancellations after this date. Industrial Associate representatives who are not AFA individual members will receive a one-year AFA individual membership as part of the registration fee. Registration fees include admission to the symposium, an exhibit hall sandwich lunch, coffee breaks, reception/buffet, and continental breakfast. Those registering may purchase an extra reception/buffet ticket (\$120) and/or lunch ticket (\$25).

Call Nikki Whitlock at the Air Force Association at 703-247-5838, or e-mail: nwhitlock@afa.org, if you have any questions or to register. To receive registration information online, go to our Web site at:

www.afa.org/calendar/aws2k1.html

It's going to be with us for a while.

Learning to Live With the Pilot Retention Problem



By Adam J. Hebert

DESPITE the prestige, glamour, and career opportunities associated with being an aviator, the Air Force will likely be battling its severe pilot shortage for years, as the service has found the shortage resistant to easy fixes. Moreover, the shortfall is concentrated almost totally in the corps of experienced pilots, the ones most valuable and most difficult to replace.

Some reasons for the shortage are familiar. A booming economy creates lucrative private-sector job opportunities, while quality-of-life concerns, such as excessive deployments, family disruption, and frequent moves, have spurred pilots to leave the force at rates higher than expected.

However, other factors also are driving pilots from the service. For starters, each aircraft tasked to support an ongoing contingency operation—frequently, they are fighters—has only a limited number of

experienced pilots available to it. New deployment patterns that some consider overuse affect these pilots most. One study found half the total pilot shortage is in fighters, approaching 20 percent of requirements.

The high operations tempo of recent years combined with the force drawdown after the Cold War have created deployment levels many pilots have found unacceptable over the long-term.

The Air Force made "a conscious decision to keep cockpits at 100 percent," while deliberately understaffing management positions reserved for pilots, because flying is the service's primary mission, said Col. Jim Brooks, chief of the Air Force's operational training division at the Pentagon, in an interview.

The unusual peacetime pilot shortage is not expected to fully dissipate until after 2010, according to the service. The problem has shown some short-term improvement, as the current 1,200 pilot shortage is 300 less than the service projected a year ago. Officials cite two reasons for optimism: The creation of the Aerospace Expeditionary Force structure last year, which restored some predictability to pilots' lives, while a recently approved increase in aviator continuation pay is expected to address some financial concerns.

No Quick Fixes

Wide-ranging efforts by the Air Force to eliminate the persistent shortages appear to have temporarily stemmed growth in the shortfall. However, the Air Force is going to have to live with the problem for quite a while. That is the conclusion of "The Air Force Pilot Shortage: A Crisis for Operational Units?"—a new study prepared by RAND under Air Force contract. It predicts that the problem indefinitely will continue to produce shortages in staff positions and threaten pilot experience levels in operational units.

The problem is that the easiest solution—retaining more pilots—has not proved possible in the current economic and geopolitical world. Efforts to improve quality of life—including the creation of the Expeditionary Aerospace Force—and reform of pay, benefit, and retirement packages have all shown potential to keep pilots in uniform, yet the problem persists.

Higher pay and bonuses alone will not fix the problem, as analysis has shown pilots essentially lose lifetime income with every year they remain on active duty instead of leaving for airlines—even when enhanced bonuses and retirement income are taken into account.

Ironically, the services during the drawdown of the 1990s reduced new pilot production at the same time that worldwide deployments began to dramatically increase. Now, there are too few pilots in the pipeline to fill the pilot rosters because larger classes of pilots have become eligible for separation from the service. Also, "the shortfall is most critical among those who collectively must fill key staff and cockpit jobs and provide instruction and leadership to newcomers in operational and training units," RAND notes in the report.

Therefore, boosting the number of new pilot trainees will not fix the problem.

Large increases in pilot production, the simplest supply-side solution, have the undesirable side effects of harming overall pilot experience levels. "Experienced" pilots are forced to fly an ever greater share of unit flying hours the more new pilots are trained, meaning inexperienced pilots take even longer to gain the necessary flying hours to be considered experienced and move into staff or leadership positions.

It currently takes nearly three years for a pilot to become experienced. The time required could grow longer than a typical assignment if young pilots are limited in their flying hours by the unavailability of senior pilots to train them. Pilots would then be facing new assignments before they were considered ready to assume new responsibilities.

RAND found that the most vexing issue facing today's Air Force is not a shortage of pilots in staff positions but general lack of experienced pilots in the force. RAND calls the problem "serious enough to compromise the ability of fighter units to accomplish their primary missions and meet their [Aerospace] Expeditionary Force ... demands."

The Air Force thus far has been able to fill all of its cockpits. For this reason, some critics have complained that the "pilot shortage" is an Air Force fabrication. They argue that USAF is seeking additional funding

to address a problem that is, in actuality, a "paper shortage."

The authors of the RAND study disagree with the claim. So does Gen. Richard E. Hawley, the retired former commander of USAF's Air Combat Command. "It's a bogus argument to say this is a manufactured shortage," said Hawley, noting that having pilots in staff positions, not just flying aircraft, gives officers needed management experience.

Insatiable Airlines

Serving to drive flying officers from the service is a factor that is unique to pilots—the lure of airline jobs. The market for commercial airline pilots is currently large enough to hire the entire Air Force pilot roster, and this indicates a protracted battle for experienced aviators is in the works.

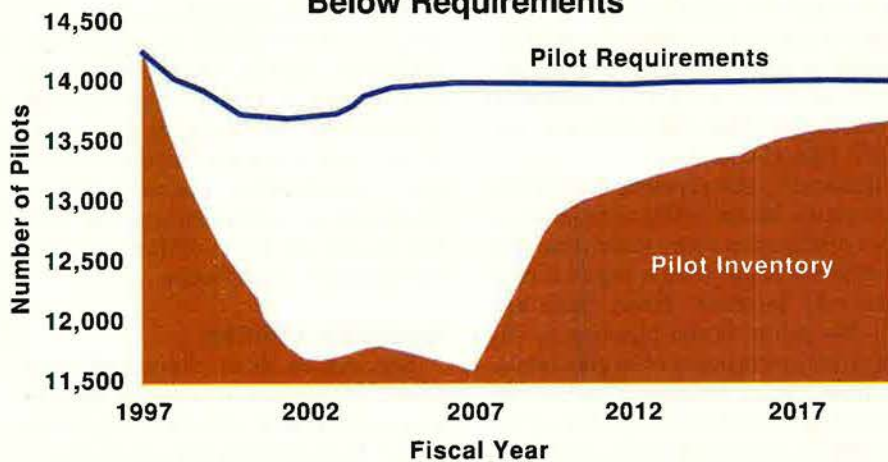
The service is in the midst of what Maj. Gen. Michael C. McMahan, Air Force director of personnel force management, described last year as a "make-or-break" two-year retention period. The numbers of separating Air Force pilots barely scratch the surface of the private sector's demand for experienced pilots, meaning jobs will continue to be plentiful for aviators who want them.

According to Kit Darby, owner and president of Aviation Information Resources, Inc., an aviation career placement firm, commercial airlines hired about 5,000 former military pilots in 1999, and major carrier demand for "quality and experience" means that trained military pilots will continue to be valued assets to airlines.

In an interview, Darby noted that military pilots are in "fixed supply." Estimates are that commercial carriers hired more than 19,000 pilots in 2000, most drawn from the ranks of 700,000 licensed nonmilitary pilots in the United States. These carriers have turned to other sources of pilots because not nearly enough former military pilots are available, he said, and the 19,000 new hires will be the fifth consecutive record year for airline hiring.

Commercial carriers are actively gunning for military pilots. In a July press release, Aviation Information Resources announced the start up of an aviation job fair. "The Airline Pilot Career Seminar and Airline Forum is geared toward civilian and

Pilot Inventory Is Dropping Sharply and Remains Below Requirements



This chart appeared in RAND's "The Air Force Pilot Shortage: A Crisis for Operational Units?" The steep downward slope of the left side of the pilot inventory curve reflects high loss rates since 1997. Requirements have remained constant, and the shortage will grow to 2,000 pilots—15 percent below USAF's needs—by 2002.

Note: Assumes 1,100 new pilots per year.

military pilots who are seriously pursuing careers as airline pilots," read the statement.

Staff Positions Questioned

Although nonflying staff positions reserved for pilots account for a major portion of the pilot requirement, eliminating nonflying pilot positions is not an option, according to RAND. The study found that such a move would prove difficult not only because many of the positions belong to non-Air Force entities but also because cutting the positions would reduce the experience in important management posts.

"OSD has a staff—a big one," Hawley noted. "Congress certainly isn't short on staff. Why do they think the Air Force can operate without one?"

Further, pilot staff positions have been scrubbed several times in recent years as the service has attempted to find and reclassify positions that do not necessarily require pilots.

"I would not argue that every billet we have rated [for pilots] needs to be rated," Hawley said, because "there is a tendency in any organization to exaggerate requirements." However, he added, pilots are not getting a great deal of career-broadening management experience, and staff positions should not be considered candidates for indiscriminate cuts.

Being a pilot undoubtedly pays a career benefit to those who remain

in the service. All but one of the current Air Force four-star generals are pilots. The exception is Gen. Lester L. Lyles, an engineer, who is the head of Air Force Materiel Command.

Despite the complex case, the Air Force still has critics. One of these is Sen. Tom Harkin (D-Iowa), who has argued that the Air Force must change the way pilots are assigned and classified. Last fall, Harkin urged Secretary of Defense William S. Cohen to direct the service to clarify its needs by performing another scrub of pilot requirements.

Harkin said DoD should review staff requirements to determine if pilots are needed to fill these types of nonflying positions currently designated for them and more fully evaluate the merits of implementing a fly-only career path for pilots wishing to stay in the cockpit.

The need to fill staff positions with pilots has not been explained well, concluded a 1999 General Accounting Office report on the matter. The Congressional watchdog agency found that DoD had not "comprehensively assessed whether all of their required positions truly need to be filled with active duty military pilots."

Confusion reigns even on the issue of how many pilots are assigned to nonflying positions. According to RAND, 16 percent of the total Air Force pilot requirement is nonflying; GAO reported that "the Air Force's

nonflying positions currently represent slightly more than 20 percent of its total pilot requirements." Consequently, the severity of the shortage was unclear to GAO because, in its view, there may still be staff jobs reserved for pilots that could be filled by other officers.

The RAND study notes skeptically, "Some argue that nonflying billets do not represent valid requirements [and] so simply removing these requirements will substantially mitigate any apparent crisis." It countered that insufficient experience "can degrade the readiness and capability of operational units even if all the cockpits remain filled." The Air Force has reduced pilot requirements by 39 percent during the past decade, while nonflying positions have been cut by 56 percent, RAND notes, adding, "Any padding that may have existed in staff requirements certainly has been substantially reduced."

A Fly-Only Career?

What about moving toward a "fly-only" career path?

Senior Pentagon officials have said this "could be a consideration in the future." However, noted Hawley, the current pilot shortage has already created a de facto fly-only career path; most USAF pilots are doing nothing but flying.

"We've done that, essentially," he added, noting today a typical pilot probably spends about 17 years of his or her first 20 in the cockpit. This is what leads to the unfilled staff billets. However, formalizing such a fly-only program invites new problems such as creating a class structure that could overtax the non-fly-only pilots, who would become the only options for headquarters desk jobs.

GAO found some pilots were concerned about this fact as well. Though many welcomed the prospect of a fly-only career, others are concerned about the career imbalance. "Many pilots are now being asked to remain in cockpit positions, which means they are not being given the opportunity to serve in other types of career enhancing positions," said the GAO report. "Some of these pilots have become concerned that they will not be competitive for promotion."

Giving those staff positions to

other career fields would not be easy, either, Hawley said, because the Air Force is dealing with many other shortages in the officer ranks. "There's not a great surplus of other types of officer expertise out there," he said.

Inexperience Looms

In RAND's view, declining experience levels in flying units confronts the Air Force with its most serious immediate problem.

The report contends that a fly-only policy would further exacerbate existing problems in management positions, while not solving the inexperience issue either. "The only real way to fix this is on the demand side," Hawley explained, and the service has already increased pilot production to what it considers the highest sustainable level.

To resolve the experience level deficit and safely increase pilot production, "the most obvious [solution] is for units to fly more, but the additional flying hours need to be programmed into the Air Force budget," RAND states. "This difficult and time-consuming process is complicated by the recent inability of fighter units to generate enough training sorties to fly their currently programmed hours."

Consequently, says RAND, the service is unlikely to obtain approval for additional flying hours.

For years, the Air Force has been unable to accurately predict the number of flying hours needed. It consistently flies fewer hours than the number that is funded and reprograms the excess funds to pay other expenses. For example, in Fiscal 1999, hours flown were below expectations at the beginning and end of the year but surged to unpredictable highs during Operation Allied Force. The net result was that the service got its overall flying hour prediction nearly correct, but training hours were slashed to accommodate the demand for combat and support sorties, further slowing the accumulation of flying experience for inexperienced Stateside pilots.

Absent better flying hour predic-

tions and funding increases, solutions to the shortage will be hard to carry out.

Restructuring Benefits

Air Combat Command is attempting to increase fighter squadron sizes from 18 to 24 primary mission aircraft, a move ACC hopes will free up pilot staff positions through consolidation. While ACC has enlarged some of its wings and squadrons, its ability to further increase squadron sizes is hampered by a lack of base closure authority, officials say.

Since 1995, 12 combat air force squadrons have been enlarged from 18 primary aircraft to 24, and ACC is actively looking for more ways to consolidate the fleet, according to Lt. Col. Robert Burgess, chief of the global attack branch of ACC's plans and programs directorate. However, said Burgess, additional moves are "awful hard to do" without closing bases or purchasing additional aircraft.

More radical changes could result in even greater reductions in the pilot shortage, but these, too, require another base closure round, Hawley said.

As ACC commander, Hawley briefed Air Force Secretary F. Whitten Peters on a proposal that showed nine Numbered Air Forces require 216 pilots in staff positions, while a "potential restructure" that eliminated five NAFs would only require 139 pilots in staff positions.

Similarly, 20 fighter wings with 364 pilots could perhaps be reduced to 12 wings with 237 pilots, freeing 127 more pilots from staff positions, the proposal explained. All of this is a "good idea whose time has not yet come," Hawley said this summer.

Another recent RAND report shows that, for the time being, eliminating a NAF within ACC could create unacceptable problems. Currently, ACC can only count on about 80 percent of its Air Operations Center officials as experienced, under ideal conditions, according to the report "The Warfighting Capacity of [ACC's] Numbered Air Forces."

During wartime, the NAFs supply

personnel to run the AOC, coordinating the air campaign. There are shortages of key personnel in each of the three NAFs within ACC, meaning the units must pool resources to properly run an AOC for any operation larger than a small-scale combat operation, the study found.

It said, "Each NAF could itself barely provide the trained personnel" to support an operation requiring about 300 sorties per day from four independent bases, a deployment level known as a quick-response package. Further, the study found that, to support larger operations, each NAF "would have had to rely on people who may not have been adequately trained or experienced, and/or borrow properly qualified people from somewhere else."

The study was chartered by the Air Force to examine the possibility of eliminating one of the NAFs, thereby consolidating ACC operations into two NAFs.

A Total Force Solution

Total Force solutions to the shortage must be investigated, RAND believes. Some new pilots could serve in Guard or Reserve units, or experienced Guard or Reserve pilots could be used as instructors in active duty units to address the experience problem.

RAND found that these solutions offer great potential, but steps must be taken to ensure Total Force solutions do not harm pilots' careers—which would deter them from agreeing to participate—and that they do not actually inspire pilots to leave the active duty for Guard or Reserve duty, as was the case in an earlier trial during the 1980s.

In 1999, the Air Force leadership agreed to reduce fighter pilot production slightly to 330 per year to help remedy the experience problem. It simultaneously decided that "30 new pilots [per year are] to be absorbed by Guard and Reserve units," RAND notes in the report.

Overall, RAND concludes, "We hope the Air Force will pursue the Total Force initiatives despite the implementation problems. These policies can be effective, however, only if the [aircraft utilization] rate problem is resolved in time to ensure that operational units will be able to fly their programmed flying hours." ■

Adam J. Hebert is associate editor of Inside the Air Force, a Washington, D.C.-based defense newsletter. His most recent article for Air Force Magazine—"For Bombers, Does START Equal Stop?"—appeared in the October 2000 issue.

SAIT photo by Gary Averb

Loggies vs. Contractors

The division of work between the depots and industry is once again a burning issue.

By Amy Butler

End of the line. KC-135s await depot-level work at Sacramento Air Logistics Center, McClellan AFB, Calif. The closing of this ALC and San Antonio ALC, Tex., were major reasons for gaps in production that led to a heavier-than-normal dependence on private sector maintenance.

THE Air Force's inability last year to manage its depot maintenance workload within Congressionally mandated standards has reignited a debate among lawmakers, government logisticians, and private industry over how to share the annual \$6 billion repair business between public and private vendors.

Under federal law, private contractors are to receive less than 50 percent of USAF's annual maintenance workload. At least half is to be reserved for its own Air Logistics Centers.

This so-called "50/50 rule" is sacrosanct for federal depot advocates. It guarantees government access to what law calls a "ready and controlled source of repair," they say. That ready and controlled source of repair must, at least in part, be organic, or kept in-house, to ensure the ability to surge during wartime, regardless of economic factors that might destabilize industry.

During Fiscal 2000, USAF failed to comply with the 50/50 limit. That failure reopened a fierce debate in Washington over how best to ensure the readiness of service weapon systems. All tend to believe that the actions USAF leaders and lawmakers will take in the coming year to rebalance the workload distribution could redefine maintenance management for the Air Force, which contains more aging aircraft than ever.

Most officials in industry and government agree that the best way to ensure readiness is to maintain a mix of federal and contractor maintenance capabilities. Some observers say USAF, by outsourcing, is modernizing its maintenance and management processes in step with the demands of service obligations.

Air Force statistics demonstrate USAF's recent reliance on industry. During the past decade:

- The private sector's share of depot maintenance funding jumped from 36 percent to 50 percent.

- Core maintenance work handled by the depots has dwindled from 27 million hours to 18 million hours.

- Long-term contracts held by industry swelled from a total of \$600 million five years ago to \$1.1 billion last year. They are expected to hit \$1.5 billion by 2004.

Such outsourcing arrangements, supporters say, save the government money and promise to provide better support to combat forces. Many who are opposed to the 50/50 maintenance law regard it as a federal jobs program, designed by legislators to sustain the employment of workers in the military's massive depots and ensure votes at election time.

Protecting Surge Capacity

Others, however, predict that the Air Force's recent reliance on private vendors will destroy its ability to surge its forces in a crisis and undermine its maintenance infrastructure of equipment and skilled personnel. The end result, these skeptics say, will be a USAF at the mercy of contractors and their prices for goods and services critical to a ready and deployable force.

Supporters of the 50/50 rule want to preserve this organic repair infrastructure. Key Senators and Congressmen, mainly members of the House Depot Caucus and House and Senate readiness subcommittees, view the depots' skilled workforce and management as irreplaceable national assets.

This debate has intensified because billions of dollars' worth of work and thousands of jobs are at stake. The economic factors drive the politics of the debate, but the discussion is—at its root—a clash of philosophies over how best to ensure military preparedness, as noted by one former depot commander.

Said Maj. Gen. Richard N. Goddard, USAF (Ret.), the former commander of Warner Robins ALC, Ga.: "Private industry maintains capacity to meet current contracts while the public depots must be able to meet day-to-day needs [and] instantly surge to meet wartime demands. Clearly, we need private industry to help meet vital wartime needs, but industry is simply not capable of

doing it all on its own. In the final analysis, private industry will be responsible to stockholders. Public depots must be responsible to our warfighters.”

Waiver Sparks Debate

These maintenance management problems burst into view one year ago. In January 2000, Air Force Secretary F. Whitten Peters waived the 50/50 requirement for Fiscal 2000. The 50/50 law allows a waiver if breaching the outsourcing limit is critical to national security, which Peters cited as the basis for his decision. Two factors contributed to the waiver: transitioning workload from closing facilities to other areas and the demands of Operation Allied Force, NATO's 1999 air war in the Balkans, he said.

At the time, USAF was in the midst of closing Air Logistic Centers in California and Texas, eliminating 40 percent of its repair infrastructure. USAF redistributed those workloads, including specialized tooling and machinery, among various private vendors and its remaining depots—Warner Robins ALC, Ogden ALC, Utah, and Oklahoma City ALC, Okla.

The transition produced some gaps in production, while equipment was en route and while new workers were being trained, according to Grover L. Dunn, Air Force associate director of maintenance.

USAF logisticians had compensated for those gaps, but they had not

anticipated a second problem: urgent demands caused by Allied Force.

This combination of events generated heavier-than-normal dependence on private sector maintenance and predicated the need for the waiver, Peters said. “In the midst of these workload transfers, the Air Force is simultaneously experiencing abnormally high operational demands and unusually low mission capable rates for key warfighting assets,” he explained. “This has placed added stress on all depot capabilities just as the workloads from the closing depots are being transitioned.”

To compensate, Dunn said, USAF awarded several “bridge contracts” to private vendors to manage surge requirements during Allied Force and fill production gaps during the transfers. These short-term gap-filler agreements, though necessary, gave private firms an unlawfully large share of the business.

Lt. Gen. Michael E. Zettler, deputy chief of staff for installations and logistics, later pegged the amount of contractor work at about \$200 million.

Lawmakers were disappointed and were concerned USAF could not lawfully manage the workload. Outspoken lawmakers include Sen. James Inhofe (R-Okla.) and Reps. Saxby Chambliss (R-Ga.), Tillie Fowler (R-Fla.), James Hansen (R-Utah), Solomon Ortiz (D-Tex.), and Ciro Rodriguez (D-Tex.), each representing

states with large repair workloads. Despite their disappointment, many in Congress viewed the waiver as a positive step, because service leaders publicly acknowledged the problem and pledged to remedy it, said Bill Johnson, the legislative director for Hansen, a leading depot advocate.

USAF portrayed the problem as temporary. Peters, Zettler, and Gen. John W. Handy, vice chief of staff, personally promised to rebalance the workload distribution and ensure additional waivers would not be needed in the future.

Criticism From Within

In March 2000, only two months later, the issue flared anew. At a hearing of the Senate Armed Services Committee's readiness subcommittee, Inhofe produced memos by senior Air Force logisticians indicating that they and top service acquisition officials were in fundamental disagreement about how to manage depot workloads.

In a Feb. 16, 2000, memo, Brig. Gen. Stanley A. Sieg, then Air Force Materiel Command's director of logistics, expressed concern about future compliance with the 50/50 rule. Failure to meet the 50/50 requirement, wrote Sieg, was not a mere quirk but was the logical outcome of DoD and USAF acquisition practices.

“[T]hese ‘bridge’ contracts merely represent a symptom of a much larger problem and should not be the only justification to support the Air Force's waiver,” he wrote. “The problem is much larger.” In a handwritten note on the memo, Sieg added, “I am concerned that Secretary Peters has an impression that FY '01 will not be a problem. It will be.”

The lawmakers already were wary of the Air Force's intense focus on outsourcing practices, Johnson said, and the memo served only to increase their concerns. Under questioning from Inhofe, Peters assured the panel, “The integrated process that General Ryan and I have put in place is specifically intended to stop willy-nilly migration to the private sector. We understand the 50/50 requirement.”

During the March 3 hearing, Peters conceded that service acquisition officials sometimes acted on their own, making critical mainte-

Staff photo by Guy Acelo



Supporters of the 50/50 rule want to preserve the organic repair infrastructure to ensure a wartime surge ability and to keep a skilled workforce—including civilians such as this one repairing a KC-135.

nance decisions without consulting the logisticians.

"I am concerned, as you are, about a tendency in the acquisition community to go to outside maintenance," he said. "That is fundamentally inconsistent with management to [meet the] 50/50 [requirements]."

Peters assured lawmakers that USAF was working to integrate input from both communities when making decisions that could affect weapon system maintenance plans.

An integrated process is necessary because the actions of one group spill over into what the other views as its mission. Early in the life cycle of a weapon system, acquisition officials choose a strategy for development and procurement. Such decisions, though they do not specifically deal with maintenance, can later dictate maintenance options and cost. Because up to 80 percent of a system's life-cycle costs are associated with maintenance, service logisticians feel their input is valuable during design and manufacture of a weapon system.

To better fuse the expertise of both communities, USAF employs the newly codified Source of Repair Assignment Process. Ronald D. Baty, head of AFMC's depot maintenance division, said SORAP weighs contractor and government repair options and, after taking 50/50 rules into account, leads to a decision about workload assignment.

Baty acknowledges that recent SORAP decisions have resulted in several lucrative contract awards to private contractors.

Focus Turns to Outsourcing

Additionally, the Air Force's acquisition officials have lately embraced a new, and some say innovative, outsourcing concept called Total System Performance Responsibility.

TSPR marks a major break with prior practice. Dunn noted that in the past, when an aircraft was produced, the Air Force would turn from the prime contractor and manage the equipment manufacturers directly. Formation of program offices helped in this task, but management of individual parts was scattered throughout dozens of Air Force and DoD agencies.

Keeping Team Together

With TSPR, said Dunn, "We keep [together] the team that was created

in production. ... The government can manage the vendor instead of trying to manage all those pieces."

Dunn said TSPR has become popular because it promises to reduce depot infrastructure. Under TSPR arrangements, contractor profits are linked to total life-cycle performance of a system. The TSPR arrangements often are struck early in a system's life, forming a long-term government-contractor partnership, Dunn added.

Similar concepts include Total System Support Responsibility for support of the E-8C Joint STARS radar aircraft, Flexible Sustainment for support of the C-17 aircraft, and Virtual Prime Vendor for management of parts.

Although these arrangements have promise, Dunn said the service must pay special attention to the performance parameters of its contracts to ensure warfighter support. Last March, Dunn said two Virtual Prime Vendor contracts produced disappointing results because performance metrics were not properly identified. These contracts were with Hamilton Standard for C-130 propeller work and Lockheed Martin for C-5 depot support.

"Frankly, we have not been pleased with either," Dunn said. "The reason is partly because they weren't set up right. They weren't long-term partnerships."

On the other hand, USAF hails its TSPR agreement with Lockheed Martin for F-117 support, calling it highly successful. Under that arrangement, about 90 percent of F-117 support dollars go to Lockheed for management of system technological support, avionics system sustainment, reliability maintenance, aircraft flight manuals, and item management. The Air Force projects a savings of at least \$170 million over eight years. Additionally, USAF trimmed its oversight personnel ranks from 226 to 55, and the F-117 maintains a mission capable rate of 83 percent.

TSPR is not without controversy. Goddard, the former Air Logistics Center commander, said logisticians are concerned about long-term effects of TSPR.

"The part of TSPR that makes me uncomfortable is the fact that it is sole-source; there is no competition," he noted. "There are those who would say the competition is at the sub-

vendor level. I certainly don't think that [kind of competition] is significant. ... I believe TSPR really does walk away, to a degree, from the concept of competition."

TSPR contracts are long term. Because work won't often be re-competed, the contractor's incentive to innovate—as well as a would-be competitor's drive to challenge a prime—could vanish. Skeptics warn that this concern also applies to a prime's motivation to contain costs.

More and more, USAF officials are using TSPR in major acquisition programs. Although the Air Force reported a number of major systems, such as the B-2 and C-17, it had placed under TSPR arrangements, the GAO thought that several others, for instance, the Space Based Infrared System, should also be considered TSPR and reported as such.

In the most recent major long-term contractor support development, the Air Force in September awarded to Northrop a Joint STARS support contract valued at \$512.5 million over six years.

Old Systems, Old Technology

Georgia lawmaker Chambliss, concerned that Air Force reliance on TSPR and similar programs had become excessive, asked GAO to investigate the program. The watchdog agency's April report found that the Air Force was using TSPR, or a similar arrangement, in the management of 44 programs and planning to use it for another 31. The GAO outlined deeply held concerns from logisticians about TSPR's effect on their ability to operate now and in the future.

GAO said AFMC logisticians were worried that the organic depots "are not getting work involving new, advanced technology weapon systems that they would need to have if they are to establish and maintain core capabilities in these areas."

One such complaint was made public in March during Inhofe's Senate hearing. Thomas L. Miner, executive director of Ogden ALC in Utah, warned in a February memo to AFMC that depots would not remain viable by performing work only on old systems.

Miner's memo said, "[I]nfusion of new technology workloads from new weapon systems is essential to maintain core [repair capabilities]."



The first C-17 composite horizontal stabilizer is readied at Northrop Grumman. Ogden ALC's director said a viable depot must introduce new workloads, such as C-17 landing gear, to its workforce to maintain core repair capabilities.

Therefore, the future of the ALC is contingent upon acquiring workloads in each technical repair center that will continue to provide a viable organic source of repair for the using commands.

"The core determination process is weighted heavily towards older, high-surge workloads," Miner continued. "Depots are provided new workloads often only after the original equipment manufacturer loses interest."

Air Force depot strategy, called Core Plus, calls for three viable public depots that can perform contract or vanishing-vendor work to fill excess peacetime capacity. That excess capacity can be shifted to handle surge requirements during war. Miner's memo questions whether the service is acting to meet that strategy. He noted that, while the Air Force has identified C-17 avionics and instruments as core functions, hydraulics and landing gear were not. C-17 landing gear, like landing gear on other aircraft, should be maintained in the public facility, Miner argued.

Additionally, he said, a viable depot depends on introducing new workloads to its workforce.

As a result of these revelations, Inhofe proposed shifting 50/50 waiver authority from the services to the President. The measure would curtail what Inhofe saw as Peters's abuse of the waiver clause to allow unlawful outsourcing.

Opposing Inhofe's provision were

DoD and the Industry Logistics Coalition. They said shifting waiver authority would complicate and delay the waiver process and subject the system to unwarranted political pressure.

The coalition also argued against the 50/50 law entirely, calling it "an artificial constraint" on service abilities to "effectively and efficiently manage depot-level maintenance and repair workloads."

Most proponents and critics of the law agree it is an artificial restraint. However, supporters of the rule claim it is the only method to keep a workload balance among private and public facilities, which are both critical to the Pentagon's industrial base.

Though Congress didn't adopt Inhofe's language, it did express concern that "the Secretary of the Air Force has not taken the actions necessary to ensure the Air Force complies with the requirement" and restated a belief that the law "is essential to maintain the core maintenance capability necessary to preserve a ready and controlled source of repair and maintenance."

Vagabond Workloads

In the months ahead, Air Force attempts to redistribute its workload will face major obstacles.

USAF officials stated that, to re-

balance the scales, the Air Force must shift at least \$145 million of workload in Fiscal 2001 from private sector to government-owned Air Logistic Centers. Many say the actual amount will be even higher. As a result, the Air Force is considering a shift in J69 and JH85 engine work (the bulk of which is performed by Sabreliner in Missouri) and T-38 aircraft maintenance (performed mainly by Lear Siegler Services in Texas).

However, shifting workloads is a massive task that involves physically moving tools and machinery, retraining workers at new sites, and possibly paying penalties to alter current contracts. Many more workloads are being eyed as possible transfer candidates.

Clearly, any workload shift is certain to be controversial and politically explosive. Private companies and some lawmakers are working to block a shift. They are joined by Sen. Christopher Bond (R-Mo.), who lobbied Peters not to terminate Sabreliner's engine contracts, and several Texas lawmakers who wrote a letter in defense of Lear Siegler's longtime support of the T-38.

Air Force officials refined their workload transfer options late last year and devised a plan to remedy the imbalance. Plans called for submitting that plan to Congress this month.

Gen. Lester Lyles, AFMC commander, said the Air Force might also propose changes in the 50/50 law to weaken its requirement. However, Johnson said the Air Force should first stabilize its workload allocation process before seeking legislative relief.

Zettler said that, although Air Force officials are working to regain a balance in the workload distribution, the service is not willing to sacrifice readiness to redistribute workloads.

This month, the Air Force may gain some guidance on this issue as a long-awaited study of DoD's core requirements is due to be completed. PricewaterhouseCoopers, under a contract, conducted the study to re-define core, which will affect future sustainment decisions. ■

Amy Butler is an associate editor of Inside the Air Force, a Washington, D.C.-based defense newsletter. This is her first article for Air Force Magazine.

AFA State Contacts



Following each state name are the names of the communities in which AFA chapters are located. Information regarding these chapters or any of AFA's activities within the state may be obtained from the appropriate contact.

ALABAMA (Birmingham, Huntsville, Mobile, Montgomery): **Austin S. Landry**, 154 Lucerne Blvd., Birmingham, AL 35209-6658 (phone 205-879-2237).

ALASKA (Anchorage, Fairbanks): **Steven R. Lundgren**, P.O. Box 71230, Fairbanks, AK 99709 (phone 907-459-3291).

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By Frances McKenney, Assistant Managing Editor

AFA Leaders Hold Combined Meeting

By his count, Michigan State President James W. Rau has been to the annual Air Force Association state presidents' orientation meeting five times.

But this one had a new twist: This time AFA's region presidents joined the state presidents for two days of information and training sessions at AFA headquarters in Arlington, Va. Region presidents had until now been meeting separately.

AFA National Chairman of the Board Thomas J. McKee opened the orientation sessions by noting another first: For the first time in 15 years AFA and the Aerospace Education Foundation have undergone a change of all national officers at once.

McKee also spoke about his recent visit with 9th Air Force to the first Middle East Air Symposium in the United Arab Emirates. He said such outreach efforts give exposure to AFA, as well as inform him about the latest Air Force issues.

John J. Politi, AFA National President, asked the region and state presidents to focus on four goals: To educate the public about the need for a strong national defense and Air Force; to act as an advocate, not lobbyist, for the issues outlined in AFA's Statement of Policy; to support USAF through Air Force and ROTC activities in their regions; and to implement AEF programs.

AEF and the Air Force Memorial provided briefings during the first day of information sessions, as did AFA departments.

Government Relations Department Director Ken Goss, for example, pointed out that there are "15,000 associations and nonprofits here, chasing members of Congress." AFA is the only military organization covering the full spectrum in its membership, from cadets to retirees, and the full spectrum of issues, including weapons. He urged the audience to use the post-election period to talk to their Congressional members about AFA and the USAF presence in their community and to learn who the new



Photo by John A. Tirpak

AFA Chairman of the Board Thomas McKee (in flight suit) visits with troops at "The Rock," a fuels storage and maintenance area at Prince Sultan AB, Saudi Arabia. As a guest of 9th Air Force, McKee traveled to the Middle East in October to attend the first Mideast Air Symposium, held in Abu Dhabi, United Arab Emirates.

Congressional staffers are. The goal, he said, is to get them "to think about coming to AFA to have questions answered."

Region presidents met with McKee and Politi the next day, while the state presidents attended workshops conducted by Thomas J. Kemp, a national director, and Craig E. Allen, past Utah state president.

Reunion and Information Items on Web

The Members Only section of the AFA Web site now offers space for members to post reunion and other notices. These include queries for information on individuals, units, and aircraft and those wanting to collect, donate, or trade USAF-related items.

AFA's Member Services Department can assist in the one-time registration procedure to join this online community and can help with posting messages. Member Services can be reached at 1-800-727-3337 (when prompted, choose 3 for the Member Services Department) or by addressing an e-mail to service@afa.org.

Far East Perspective

The **Columbia (S.C.) Chapter's** quarterly dinner featured Richard Walker, former ambassador to South Korea, who gave his assessment of events and leaders in several Asian countries.

According to Roger Rucker, state and chapter president, Walker told the audience he continues to be concerned about the hard-line Communist leadership of North Korea, despite recent signs of a better relationship with South Korea. Rucker said the audience, gathered at the Ft. Jackson officers club, also asked questions about China.

During World War II, Walker drew on a family missionary background in China and intensive language training in the Army to serve as a Chinese interpreter with Gen. Douglas MacArthur's headquarters in the Pacific Theater. He was recalled to active duty for the Korean War and later lived and worked in East Asia. He served as ambassador to South Korea from 1981 to 1986.

Rucker and P. Wayne Corbett,

chapter vice president, first met Walker in 1961, when he arrived at USC to found its Institute of International Studies. They were undergraduates in his international studies class.

On USAF Issues

Lt. Gen. Charles H. Coolidge Jr., vice commander of Air Force Materiel Command at Wright-Patterson AFB, Ohio, gave a comprehensive presentation to the **Lexington (Ky.) Chapter** in September.

He discussed the Expeditionary Aerospace Force concept, USAF deployments, and recruiting and retention challenges. He also pointed out the impact of AFA, telling the audience how it was instrumental in helping to secure the recent pay raises and other legislation benefitting Air Force active duty personnel and veterans.

As part of the meeting, Coolidge and W. Ron Goerges, Great Lakes region president, formally presented the region's Teacher of the Year award to David Helm. Helm is an anatomy, physiology, and biology teacher at Tates Creek High School in Lexington. He has been a coordinator and taught at an annual summer aviation camp, which this year received a chapter matching grant from AEF.

Honors, Awards, and JSOU

Lt. Gen. Maxwell C. Bailey, commander, Air Force Special Operations Command, Hurlburt Field, Fla., received the Jerry Waterman Award at the **Hurlburt Chapter's** first awards banquet. The award is AFA Florida's highest honor for an active duty USAF service member.

Daniel C. Hendrickson, AFA National Secretary, made the presentation, along with Bruce E. Marshall, Florida state executive vice president, and Emil "Max" Friedauer, chapter president. They also presented several national-level AFA awards (noted in the November issue, p. 74). Earl W. Harden, chapter vice president for communications, received a state-level Exceptional Service Citation.

Army Brig. Gen. Kenneth Bergquist, first president of the new Joint Special Operations University, presented a briefing on the school. It was recently established by the commander in chief of US Special Operations Command to be a focal point for the unique educational needs of Special Operations Forces and to enhance the understanding of special operations by national security decision makers. The university is collocated with the USAF Special Operations School at Hurlburt.



Photo by Terri Politi

Jack Gross, a former AFA National Chairman of the Board (1963-64), is delighted to receive an AFA coin from National President John Politi (left). Politi made the October visit to gain insights from Gross on the challenges facing the association.

The evening's program, held at the all-ranks club at Hurlburt, concluded with an induction of chapter officers by Raymond Turczynski Jr., Florida northwest area vice president. The officers are Friedauer, president, David M. Loar, vice president, Norman D. Dykes, secretary, and Carroll Sullivan, treasurer.

Fall Ball

The annual Fall Ball in New Jersey brought together individuals from many AFA chapters around the Garden State.

In fact, it was a sellout.

Mercer County Chapter's Almalinda B. Fairlie, who headed the ball planning committee, said she had to turn away some latecomers who wanted to attend.

Brig. Gen. Richard A. Mentemeyer, who became commander of the 305th Air Mobility Wing at McGuire in June 1999, was the keynote speaker. He spoke about the wing, which provides C-141 and KC-10 aircraft for strategic airlift, airdrop, and air refueling missions around the world. The 305th's mission statement says it is "America's eastern gateway for rapid mobility."

CMSgt. Walter J. Tafe of the **Thomas B. McGuire Jr. Chapter** served as master of ceremony. Northeast Region President Raymond "Bud" Hamman headed the list of AFA VIPs, along with Ethel Mattson, current state president, and Flavio J. "Cy" LaManna, William Ramsay, and Martin T. Capriglione, all past state presidents.

Among the 90 guests were many chapter officers, including Chapter Presidents Zgyumnt Wozniak, **Aerospace Founders**; James E. Young, **Hangar One**; Robert Nunamann, **Highpoint**; Robert W. Ehrhardt, **Hudson**; CMSgt. John Dodsworth Jr., McGuire; Arthur Beach, Mercer County; Joseph M. Capriglione, **Sal Capriglione**; and Jack Tomlinson, **Union Morris**.

Fairlie, who spends six months planning the traditional Fall Ball, said they will be reserving a larger room for next year's event.

Schriever Fellow

At a **Central Florida Chapter** awards and installation dinner in September, Robert E. Ceruti was named a Gen. Bernard A. Schriever fellow.

A \$2,500 donation will be made by the chapter in Ceruti's name to the Aerospace Education Foundation.

Ceruti joined the chapter when he was a professor of aerospace studies at the University of Central Florida in Orlando, Fla.

He went on to serve with the chapter in many roles, including three terms as president.

Current chapter President Tim Brock and Tommy G. Harrison made the presentation.

Have AFA/AEF News?

Contributions to "AFA/AEF National Report" should be sent to *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Fax: (703) 247-5855. E-mail: afa-aef@afa.org. ■

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Pieces of History

Photography by Paul Kennedy

In a Long War



Airmen like the maintainer depicted in this display at the US Air Force Museum put in long days during the Vietnam War. Among the aircraft they kept in the air was the F-105G in the background. This two-seat Thunderchief began its wartime service in Southeast Asia in 1967 as an F-105F with the 355th Tactical Fighter Wing in Thailand. It was later converted for the defense-

suppression role of a "Wild Weasel" aircraft. This "Thud" bears the markings of an F-105G from the 561st Tactical Fighter Squadron in 1972, when it flew out of Korat RTAB, Thailand.

Courtesy US Air Force Museum, Wright-Patterson AFB, Ohio



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