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AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION

MAGAZINE



The War On Terror
Homeland Defense
The Rediscovery of Danger

In the Shadow Of MAD
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About the cover: An F-16 from the Vermont Air National Guard flies Combat Air Patrol over New York City, where smoke rises from the World Trade Center area. USAF photo, courtesy 158th Fighter Wing. See "The War on Terror," p. 26.

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By John T. Correll, Editor in Chief

The Rediscovery of Danger

THE terror attacks on New York and the Pentagon have been likened to Pearl Harbor. The question was soon asked, as it was after Pearl Harbor: Why weren't we warned?

The fact is, we were warned. Two years ago, for example, a Presidential commission led by former Sens. Gary Hart and Warren Rudman predicted a terrorist attack on the United States and warned that "Americans will likely die on American soil, possibly in large numbers."

Not all of the commission's fears were realized on Sept. 11. Hart-Rudman said the attack might involve nuclear, biological, or chemical weapons.

In July 1999, Secretary of Defense William S. Cohen warned that we had "not a moment to lose" in preparing for a terrorist attack on the US homeland.

In testimony to Congress last March, the Defense Intelligence Agency forecast a major terrorist attack, either in the United States or abroad, over the next 12 to 24 months "with a weapon designed to produce mass casualties."

We had further warning from the car bomb attempt on the World Trade Center in 1993, as well as from the attacks on the Air Force's Khobar Towers barracks in Saudi Arabia in 1996, on US embassies in Kenya and Tanzania in 1998, and on USS *Cole* in Yemen last year. These atrocities generated no more than temporary outrage and perfunctory responses.

The warnings were there. We just didn't pay attention because we perceived no threat to our security. Then the terror attacks reordered our national priorities overnight. We have begun to take national security as a serious matter, but it is not clear whether the full import has sunk in yet.

In the immediate aftermath of the attacks, reaction focused on the vulnerability of airlines and airports. But airline security is only part of the terrorist threat, and terrorism is only part of the national security problem. Defeating terrorism, as vi-

tal as that is, is not our only requirement.

Prior to the attacks, we were deeply involved in a national defense review, aimed at correcting problems of the armed forces, accumulated over the past decade, and transforming them to meet the needs of a new century.

Until the attack, Americans saw no threat to their security.

The war on terror pushed those issues out of sight and made them seem long ago and far away. In reality, they are still there, and we cannot delay dealing with them much longer. In some ways, resolving them will be more difficult than before.

Until a month ago, the prevailing presumption was that we were in an interlude of "strategic pause." The nation perceived itself as between wars, and between significant threats.

Therefore, an assumption of the fundamental defense review, ongoing since February, was that we would be able to accept more risk in the short term and divert efforts and resources to the needs of the future.

It is now clear that we have serious, compelling national security requirements that are here and now. There is little margin for playing off the needs of today against the needs of tomorrow. We must attend to them both. Likewise, our counterterror requirements are in addition to, not instead of, other military requirements.

The emergency appropriation approved by Congress will bring much-needed improvements in counterterror capability. Some such improvements, especially in intelligence, surveillance, and reconnaissance, will have broader applicability, but most national de-

fense shortcomings are still where we left them six weeks ago.

The nation feels little urgency about stabilizing the slide of the armed forces, replenishing their stores of spare parts and munitions, or replacing their aging and worn out equipment. The newly awakened sense of national security does not go that far.

The Pentagon has declared homeland defense to be its paramount mission. It could hardly do otherwise. The United States is under attack.

However, defensive measures at home will not win the war on terror. It is not physically possible to defend everything all of the time.

The first time, it was a fuel-laden aircraft. Next time it may be a subway, a shopping mall, a football stadium, or the water supply.

As Secretary of Defense Donald Rumsfeld said, terrorists "don't live in Antarctica. They work, they train, and they plan in countries" from which they receive support. Defeating the terror networks means taking the fight to them. We must "drain the swamp they live in," Rumsfeld said.

In Operation Enduring Freedom, the armed forces began carrying the war to states that sponsor and export terror.

In the months ahead, the nation faces a test of will. With the rubble of the twin towers still smoldering—and before the first blow had been struck against the terrorists—the pacifists were in the streets, calling for gentle measures and American restraint. Three blocks from the White House, anti-war protesters burned a US flag.

It remains to be seen whether we will sustain the commitment to wipe out terror. Beyond that, there are additional threats to our national security. At the moment, they might seem distant, even far-fetched.

We should remember that the threat from terrorism seemed distant, too, right up to 8:45 a.m. on Sept. 11, when American Airlines Flight 11 struck the north tower of the World Trade Center. ■

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Misconception About the F-15E

I write this letter from the Seoul (Korea) Air Show where there is continued confusion among many Koreans about the differences between the older air-to-air F-15C and our Air Force's premier strike fighter, the state-of-the-art F-15E, which made its solo flying debut here. The F-15E is going through its paces to highlight the capabilities of the F-15K, the US entrant in the Korean FX procurement, a competition between us, the Russians, the Eurofighter, and Rafale.

The confusion in Korean minds comes in large part from claims made by Rafale that all F-15s are old and being retired and cannot match their "state-of-the-art" fighter. John Tirpak's October article, "Foreign Fighters Get Better" [p. 30], does give the Rafale its due as an air-to-air machine, noting it may have some future advantages over the older F-15 as it matures, but also notes that the Air Force's rigorous training should give the edge to our venerable fighter.

The problem with Tirpak's otherwise well-stated article is that to an uninitiated reader (and there are many out there), the Rafale claims can ring true, because the article doesn't specifically make what you and I see as a clear distinction between the older F-15Cs to be retired and the F-15E, which has capabilities far beyond anything Rafale can deliver and will be the deep interdiction cornerstone of the USAF Fighter Roadmap for more than 30 years to come.

An acknowledgement of this crucial point by your highly regarded staff would go a long way to clearing up misconceptions in Asia about our Air Force's premier multirole, state-of-the-art strike fighter.

Doug Kennett
The Boeing Company
St. Louis

■ *As the writer notes, the article focused only on the Air Force's F-15Cs, the average age of which is 15 years. It did not consider the capabilities of the F-15E, which USAF uses in a strike role.—THE EDITORS*

No Apology

The editorial [*"Defense and the Shrinking Surplus,"* p. 2] in the October issue is a low blow to the Social Security recipients, with the centerpiece statement: "The 'raid' on Social Security is a phony issue." A public apology is in order.

Walter J. Gerzin
Boynton Beach, Fla.

■ *An apology to whom and for what? The allegations of a "raid" on Social Security were and are a lot of malarkey, designed to scare senior citizens for political purposes. It was and is a phony issue.—JOHN T. CORRELL*

Bomber Questions

John Tirpak's focus on the precipitous decline in the US bomber fleet could not have come at a better time. [See "Bomber Questions," September, p. 36.] The United States is confronted by the prospects of having to fight a world war. This war will be of a character unlike any other the nation has faced in its 225-year history. But one thing is already certain. It will require that the military fully exploit its arsenal of long-range, agile, and stealthy assets.

In view of this, and the growing importance in military planning of long-range precision strike, it defies understanding that the Air Force, with the concurrence of the civilian leadership of the Department of Defense, would decide to reduce the bomber fleet. The emphasis in aircraft procurement continues to be on relatively short-range tactical fighters.

Do you have a comment about a current article in the magazine? Write to "Letters," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. (E-mail: letters@afa.org.) Letters should be concise and timely. We cannot acknowledge receipt of letters. We reserve the right to condense letters. Letters without name and city/base and state are not acceptable. Photographs cannot be used or returned.—THE EDITORS

Yet, as we have found out over the past several weeks, many nations are reluctant to have US forces, particularly offensive strike systems, based in their countries. While aerial refueling can extend the range of tactical fighters significantly, there remains the requirement to deploy large numbers of troops and amounts of equipment in theater.

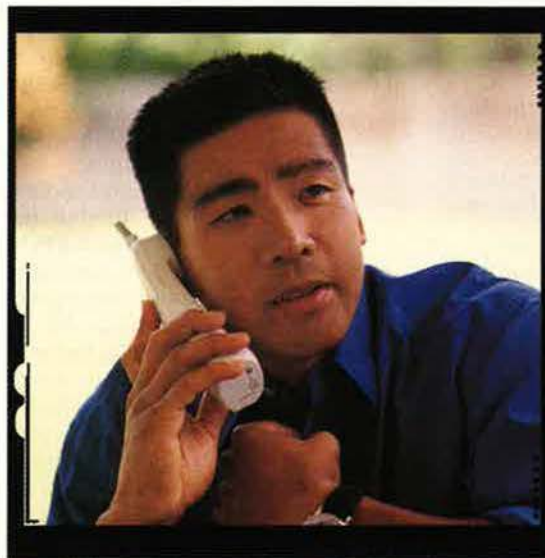
Strategic bombers provide a unique combination of global mobility, precision, extratheater basing survivability, and political acceptability. Yet, as Tirpak points out, we are on a path to reducing the number of strategic bombers available in the event of war to less than 100. Moreover, the Air Force is not prepared to field another strategic bomber until 2037. After the events of Sept. 11, it is the height of hubris to believe that we can anticipate the threats of the next several decades. We cannot predict where we will have to use military force and what countries will permit the stationing of US forces on their territory. Therefore, to believe that we can make do with less than 100 operational bombers and fewer than 20 operational B-2s, flies in the face of the evidence and common sense.

DOD needs to rethink its approach to strategic bombers and, in particular, the decision not to procure more B-2 bombers. An additional 40 long-range, stealthy, high-payload, precision strike B-2s would provide real near-term capability and an important hedge against uncertainty.

Daniel Goure
The Lexington Institute
Arlington, Va.

The article failed to address a fundamental question: Will the aircrew remain competent during the mission? Other than [retired] Gen. James McCarthy's perceptive but nonspecific remark about dealing with the "entire infrastructure," there was no mention of designing the mission or the hardware and software around the human aircrew that will be a major—and the most variable—component of bomber systems for the next 20 years, at least. We are in the

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unfortunate position of having to modify the human to fit the mission.

Fatigue can rob humans of the perceptual and cognitive skills required for the safe and effective operation of an aircraft. We know we will fly long-duration missions across continents and time zones using multiple aerial refuelings to extend aircraft range. But how do we manage the error risks associated with human fatigue caused by such missions?

In 1994, Bill Storm of our group [showed] how 30-hour Kosovo bombing missions could be accomplished more safely through the use of cockpit napping. Recently, Air Combat Command received permission from USAF to use the stimulant dextro-amphetamine to help bomber aircrews sustain alertness. While extremely useful, these measures are just a beginning. We can do more than asking a pilot to try to sleep on an aluminum cot or air mattress behind the seat or to take amphetamines.

Other available countermeasures include: quantitative predictions of periods during which aircrews are at high risk for making errors and during which cockpit naps should be most effective; the use of advanced sleep aids for premission and between-mission sleep when sleep must be obtained at inopportune times during the body cycle or when jet lag interferes with sleep; and quantitative management of the wake-rest cycle for optimal crew effectiveness during unique, sustained operations. These countermeasures should be employed more widely now.

With more study, a nonstimulant, wake-promoting substance used presently and effectively for narcolepsy may become a very useful countermeasure available to aircrews. Fortunately, our R&D program and participation in triservice and multiagency technical groups are allowing us to learn more about new pharmacological countermeasures like this and also about interactions among premission sleep aids and in-flight naps and stimulant use. We also plan to learn more about the effects of fatigue on crew resource management and communication and fatigue's effects on the situational awareness of the crew.

James C. Miller,
Warfighter Fatigue Countermeasures R&D Program
Air Force Research Laboratory
Brooks AFB, Tex.

The Strategic Pause

As Tuesday's events [*"Aerospace World: The September Massacre—Sept. 11, 2001," October, p. 9*] un-



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folded, I couldn't help but think back to John Correll's editorial about the strategic pause. [See "Opportunity Slips Away," April 1999, p. 4.]

Well, the pause has ended and now we will all suffer the consequences of the mismanagement over the last decade [when] we could have transformed and prepared for what we now face. God help us.

Capt. Doug Kennedy,
 AFRC
 Cannon AFB, N.M.

Lost a Harrier First

In the September issue, you reported the story of a downed F-16 over northern Iraq on July 18. [See "Aerospace World: First Jet Lost in No-Fly-Zone Operation," p. 20.] The article went on to say that it was the first loss of a [fixed wing] aircraft since Operation Northern Watch began. Whilst it may have been the first US aircraft lost, you should be aware that the Royal Air Force lost a Harrier GR7, also to suspected engine malfunction, in November 1993. I believe that the aircraft came down over northern Iraq.

Wg. Cdr. Reg Carey,
 RAF
 CAOC-X
 Langley AFB, Va.

■ Thank you. We should have been more precise.—THE EDITORS

Selectively Applied PC

Maj. Martha McSally took a pasting in the September "Letters" section as a result of her crusade against American servicewomen being forced to wear the abaya in Saudi Arabia. [See "To Abaya or Not," p. 12.] I was especially taken by the letter which compared her to "real" fighter pilots like Maj. Dick Bong.

I have to wonder what Bong's reaction would have been when ordered to wear a shirt which associ-

ated him with a religious faith he didn't believe in. I suspect he might have objected to wearing this shirt, which identified him as being inferior and subservient to every member of the opposite sex in the country he was serving in. Visiting town between sorties, he might have been confronted by the local religious police, given a sharp smack with a stick, and told to roll down his sleeves since his bare forearms were considered offensive.

Bong would have had a quiet, man-to-man talk with his superiors. Understanding the issue firsthand, they would have quickly jumped on it and worked it up the chain of command. The problem would have been speedily resolved and an announcement made that American fliers would not be treated as second-class citizens, no matter what country they happened to be in. Bong would have been pointed out as not just a great fighter pilot but a true leader—somebody who looks after the well-being of everybody in the squadron.

How sad that McSally is figuratively spat upon in the year 2001 for grabbing this issue and refusing to let go. How very disappointing that selectively applied political correctness has become more important than the values our servicemen and servicewomen are sworn to protect and defend.

CMSgt. David V. Jenkins
 Hickam AFB, Hawaii

The DFC

[About] the letter ["Speaking of the Last Flight," September, p. 6] concerning award of the Distinguished Flying Cross to the pilot of the EP-3 spyplane: This certainly was not the first time the DFC was awarded for a single, noncombat mission nor, I expect, will it be the last. I recall the mission during the 1950s in which [three] B-52s completed the first non-

stop flight around the world (with aerial refueling en route). The aircraft commanders were awarded the DFC for this mission.

I am far more concerned about the trend toward cheapening the award of medals or ribbons. It is not at all unusual to see a service member with no more than three or four years of active, noncombat service wearing three and four rows of ribbons. I also question the reasoning behind awarding eight to 10 or even more Air Medals for flying multiple sorties. The Silver Star has become almost a given since the late 1960s.

In World War II, I flew 50 B-25 unescorted combat bombing missions in China, Burma, and North Vietnam. I was a member of the 14th Air Force Flying Tigers. The 14th suffered significant losses to enemy aircraft and ground fire—far greater than in any subsequent US military engagement. During its entire existence in China (March 1943–August 1945), 14th awarded a single Medal of Honor and a handful of Silver Stars.

On completion of four years of service during the war, I was entitled to wear the DFC Air Medal (no clusters), the Asia-Pacific theater ribbon with three major campaign stars, and the American theater ribbon—a total of four ribbons. My roommate, a highly competent aircraft commander, flew 49 missions. He was awarded the Air Medal, the Asia-Pacific ribbon with three stars, and the American theater ribbon. These three ribbons and nothing more. Had he flown the 50th mission, he would have [earned] the DFC.

Lt. Col. Jim White,
 USAF (Ret.)
 Annandale, Va.

I was intrigued by some of the letters, particularly the one from Lt. Col. Rolland S. Freeman, USAF (Ret.).

Freeman, in expressing his outrage at award of the DFC to the EP-3 pilot, referred to it as a "precedent." In fact, at least once before, USAF awarded the DFC for extraordinary airmanship in bringing in a damaged aircraft that was not on a combat mission.

On July 16, 1955, at Donaldson AFB, S.C., Capt. Theodore Roosevelt, a seventh cousin of both former Presidents Roosevelt, received the DFC for bringing in safely a C-124C, with 79 paratroopers of the 82nd Airborne aboard. [He did this] after two of his four engines, both on the same side, went dead over the Pacific Ocean on July 14, 1955, during the return leg of Operation Gyroscope, the first time a fully equipped combat strength, com-

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bat ready infantry unit had been moved intercontinentally entirely by air.

In pinning the DFC on Roosevelt, Maj. Gen. Chester E. McCarty, commander of 18th Air Force, told Roosevelt to recommend his aircrew for appropriate awards or decorations. As a result, they received the Air Medal.

How do I know all of this? I was there! I was not a member of Roosevelt's crew; I was a member of Capt. Wally Malone's crew. We were several hours behind Roosevelt's stricken "Old Shaky" but kept close watch on his touch and go situation via radio. I happened to be Malone's radio operator. Roosevelt's act of airmanship was widely reported in the media at the time. And his in-flight emergency did not result from the provocative actions of some hot dog jet jockey.

So, the precedent for awarding the DFC for a heroic act of airmanship, even though it did not involve a combat mission or situation, was set at least 46 years earlier than the EP-3 incident, and I am unaware of a single combat pilot who begrudged Roosevelt his well earned and well deserved DFC.

James L. Seay
Rantoul, Ill.



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Aerospace World

By Peter Grier

Homeland Defense Now Key

In the wake of terrorist attacks on US territory, the Department of Defense needs to put great new emphasis on the defense of the homeland. So declared Gen. Richard B. Myers, the new Chairman of the Joint Chiefs of Staff, to members of the Senate Armed Services Committee.

Myers addressed the panel Sept. 13, two days after the hijacking massacre that unfolded in New York, Washington, D.C., and Pennsylvania. More than 6,000 Americans died in the attacks.

Exactly what the military's role should be in this area is unclear. Myers said that he and the nation's defense establishment had not yet developed a comprehensive new homeland defense outline. "I just know that the debate needs to take place now," he said.

The attacks on the World Trade Center and Pentagon made it clear that local civil authorities do not have all the resources they need to cope with a major catastrophe. If anything on such a scale ever happens in the US again, the US military will inevitably be involved.

Sorting through homeland defense issues now will ensure "we are ready to act in a unified way and a focused way," said Myers.

If weapons of mass destruction are involved, for instance, the National Guard might be called upon to play a larger role. Response to such a disaster is something Guardsmen can train for, according to the nation's new military chief.



USAF photo by SSGT. Jeremy T. Lock

USAF personnel build tri-wall aerial delivery system boxes to hold Humanitarian Daily Rations for Operation Enduring Freedom. On Oct. 8, C-17s air-dropped the first load of HDRs to refugees in Afghanistan.

"I think those missions are perhaps more natural for the National Guard than some of the current missions," said Myers.

Myers Affirms Transformation Effort

At the same hearing, Myers said transformation of the military to meet the threats of a new era is something on which DOD is now seeing a unified effort.

Under guidance from the Office of the Secretary of Defense, the services are developing joint operational

concepts. Much of the work is being done by US Joint Forces Command in Norfolk, Va. "They've got the role of experimentation, which you would think would lead our transformation efforts," said Myers.

Transformation is now likely to include changes in ways of using forces. Myers pointed out that the Air Force did scramble fighters, radar aircraft, and tankers in response to the terror attacks and would do so if another wave of attacks occurred.

Among his previous jobs, Myers was commander in chief of North American Aerospace Defense Command. The command had clear plans to deploy fighters against an external threat, he noted, but did not practice operations against aircraft flying within American airspace.

Bush Establishes Office of Homeland Security

President Bush, in a Sept. 20 address to a joint session of Congress, set in motion plans for creation of a new Cabinet-level Office of Homeland Security.

Named to head the new coordi-

McGuire Served as Crisis Port

McGuire AFB, N.J., served as an important transportation hub for federal emergency teams in the days following Sept. 11.

Technicians from the 305th Aerial Port Squadron worked around the clock to handle more than 250 tons of emergency management cargo. Some 250 members of Federal Emergency Management Agency search-and-rescue teams, as well as 300 military personnel, moved through the base within two days of the disasters.

"McGuire Air Force Base has served as an important staging area for several of our urban search-and-rescue teams," said Douglas Welte, of FEMA public affairs. "We appreciate their support. They've done a tremendous job."

nating organization was Republican Pennsylvania Gov. Tom Ridge, a military veteran and longtime friend of the President.

The new office is charged with finding ways to coordinate various federal, state, and local agencies to lessen the nation's vulnerability to terrorist strikes.

"Today, dozens of federal departments and agencies, as well as state and local governments, have responsibilities affecting homeland security," Bush said. "These efforts must be coordinated at the highest level."

Ridge will report directly to the President. He was sworn in Oct. 8.

White House officials provided only sketchy details of planning for the new office. Spokesman Ari Fleischer said the office will function in much the same way as the National Security Council, a White House office that has a "coordinating capacity involving State, involving Defense, involving CIA."

Reservists Called Up

On Sept. 14, President Bush authorized the call-up of up to 50,000 reservists to active duty. Of those, up to 13,000 could come from the Air National Guard and Air Force Reserve Command.

Pentagon officials did not quickly make a determination as to which units would be called up and how the call-ups would be distributed between the National Guard and Reserve. But those most likely to be mobilized would include specialists in port operations, medical support, engineer support, general civil support, and homeland defense.

The number of people involuntarily called to active duty will almost surely be significantly less than the personnel requirement, as volunteers will fill the majority of positions, predicted officials.

Guardsmen, Reservists Guaranteed Jobs Upon Return

The thousands of National Guard members and Reservists called to active duty in the wake of Sept. 11's terrorist attacks should rest easy on at least one matter—employment should be waiting for them when they return.

"Guardsmen and Reservists will have job protection," said Rep. Chris Smith, House Veterans Affairs Committee chairman.

Under the federal Uniformed Services Employment and Re-employment Rights Act of 1994, employers are required to re-employ Guard members and Reservists at the same position or better. They must also

Twelve Hours in America

What follows is a chronology of events on Sept. 11. Eastern Daylight Time is used throughout.

- 8:45 a.m. First hijacked aircraft, American Airlines Flight 11 from Boston, crashes into north tower of World Trade Center.
- 9:03 a.m. Second hijacked aircraft, United Airlines Flight 175 from Boston, slams into WTC south tower.
- 9:17 a.m. FAA shuts down all New York City area airports.
- 9:21 a.m. Authorities close New York area bridges and tunnels.
- 9:30 a.m. In Florida, President Bush says events of the morning are result of an "apparent terrorist attack."
- 9:38 a.m. Third hijacked aircraft, American Airlines Flight 77 from Dulles Airport near Washington, hits Pentagon, setting it ablaze.
- 9:40 a.m. FAA halts US flight operations, orders aircraft to land.
- 9:45 a.m. White House workers evacuate the building.
- 9:57 a.m. Bush departs Florida for Barksdale AFB, La.
- 10:00 a.m. WTC south tower collapses.
- 10:03 a.m. Fourth hijacked aircraft, United Airlines Flight 93 from Newark, N.J., and on a heading to Washington, crashes in Pennsylvania.
- 10:10 a.m. Part of Pentagon collapses.
- 10:13 a.m. United Nations building evacuates.
- 10:22 a.m. State and Justice Departments are evacuated.
- 10:24 a.m. FAA diverts all inbound trans-Atlantic flights to Canada.
- 10:28 a.m. WTC north tower collapses.
- 10:45 a.m. US evacuates all federal buildings in Washington.
- 10:46 a.m. Secretary of State Colin Powell departs Latin America for Washington.
- 11:02 a.m. Mayor Rudolph Giuliani orders evacuation of New York City, south of Canal Street.
- 12:04 p.m. Authorities evacuate Los Angeles Airport.
- 12:15 p.m. The INS imposes highest state of alert on borders.
- 1:04 p.m. Bush, at Barksdale, addresses nation, puts military on worldwide alert.
- 1:27 p.m. Officials declare state of emergency in Washington.
- 1:48 p.m. Bush departs Barksdale for Offutt AFB, Neb.
- 2:30 p.m. FAA bans commercial air traffic until further notice.
- 4:30 p.m. Bush departs Offutt for Andrews AFB, Md.
- 5:20 p.m. WTC Building 7 collapses.
- 6:40 p.m. Rumsfeld holds news conference, says DOD is functioning.
- 6:54 p.m. Bush arrives at White House.
- 8:30 p.m. Bush addresses the nation, declares US will pursue those who planned and executed the attacks and nations harboring them.

receive the same benefits and seniority they would have accrued had they not been on military leave.

"If they would have been eligible for a promotion during their leave, they must be given that promotion upon their return if they are qualified,

or allowed time to become qualified," said Smith.

USERRA also provides some protection for employers. Employees must provide notice when they are called to active duty, unless doing so might compromise military operations.

When NORAD Scrambled the Fighters

At a Sept. 13 hearing of the Senate Armed Services Committee, many questions were asked about how North American Aerospace Defense Command responded to the airborne terror attacks.

Gen. Richard B. Myers, then the vice chairman and now the Chairman of the Joint Chiefs of Staff, said NORAD ordered fighters into the air when notified of the hijackings. However, they never were in a position to take armed action against the hijackers.

The first three aircraft hit their targets before the defending fighters arrived. The fourth could have been intercepted, but it crashed before it threatened its target. (See below.)

"When it became clear what the threat was, we did scramble fighter aircraft, AWACS, radar aircraft, and tanker aircraft to begin to establish orbits in case other [threatening] aircraft showed up in the FAA system," said Myers.

"We had plans to deploy our fighters to defend from external threats," said Myers, a former NORAD commander in chief. "I never thought we'd see what we saw the last few days, where we had fighters over our cities, defending against a threat that originated inside the United States of America."

AA Flight 11 (Boston-Los Angeles)

FAA notifies NORAD's North East Air Defense Sector of problem	8:40 a.m.
Fighter scramble order (at Otis ANGB, Mass.)	8:46 a.m.
Airliner strikes WTC north tower	(estimated) 8:46 a.m.
Fighters airborne (two F-15s)	8:52 a.m.
Fighter time/distance from impact point: (not airborne)/153 miles	

UA Flight 175 (Boston-Los Angeles)

FAA notifies NEADS of problem	8:43 a.m.
Fighter scramble order (at Otis ANGB, Mass.)	8:46 a.m.
Fighters airborne (same two F-15s as above)	8:52 a.m.
Airliner strikes WTC south tower	(estimated) 9:02 a.m.
Fighter time/distance from impact point: approx. 8 minutes/71 miles	

AA Flight 77 (Washington Dulles-Los Angeles)

FAA notifies NEADS of problem	9:24 a.m.
Fighter scramble order (at Langley AFB, Va.)	9:24 a.m.
Fighters airborne (two F-16s)	9:30 a.m.
Airliner strikes the Pentagon	(estimated) 9:37 a.m.
Fighter time/distance from impact point: approx. 12 minutes/105 miles	

UA Flight 93 (Newark-San Francisco)

FAA notifies NEADS of problem	9:24 a.m.
Fighter scramble order (at Langley AFB, Va.)	9:24 a.m.
Fighters airborne (same two F-16s as above)	9:30 a.m.
Airliner crashes in Pennsylvania	(estimated) 10:03 a.m.
Fighter time/distance from impact point: approx. 11 minutes/100 miles	

Source: Sept. 17 NORAD release. All times EDT.

They must report for work within a specified number of days upon returning home.

Early Call-Ups Go Smoothly

So far call-ups haven't created much workplace tension. The need to mobilize in the fight against terrorism has been obvious to all, according to the Pentagon's ombudsman

for employers of Guard members and Reservists.

"Employers from across the country are asking what they can do to help," said Army Lt. Col. Jess Soto, director of ombudsman services at the National Committee for Employer Support of the Guard and Reserve.

Employers' major concerns are what happens when their employees

are called up and what benefits they must continue to provide. Health insurance must be maintained for up to 18 months for called-up workers, if they choose to stay with their employer's policy, for instance.

Employers can ask for deferral of a call-up on a case-by-case basis. The final decision rests with military authorities.

"If you are a small business operation a call-up can affect you more," Soto said.

Mortuary Soldiers Perform Difficult Duty

Two Army soldiers from Ft. Lee, Va., performed perhaps the toughest job in Washington this fall: mortuary duty at the Pentagon.

SSgt. James Frazier and Pvt. Khiran Corbitt, 54th Quartermaster Co., were on duty at the crash site the day after a hijacked airliner plowed into the building. Their job was to gather remains and transport them to a temporary morgue.

The remains were driven to Ft. Belvoir, Va., and then shipped to Dover AFB, Del.

Frazier and Corbitt are active duty mortuary specialists. "It is unbelievable, what happened here," said Frazier.

Dover Picks Up Mortuary Duty

Some 200 Air Force Reserve Command specialists volunteered for active duty in mid-September to help handle and process remains of Pentagon bombing victims at the US military's port mortuary facility at Dover Air Force Base.

The Reservists were drawn from AFRC's 10 port mortuary units from around the country. Overall, these units have 266 Reservists and another 48 individual mobilization augmentees.

The units provide 84 percent of the service's port mortuary capability.

While the job of identifying and handling the dead is a grim one, all were eager to help in this case.

"It's an important job. It helps the families of these people gain closure," said 1st Lt. Libby Itanen, an AFRC port mortuary officer.

Renovations Lessened Pentagon Damage

A recent renovation of the area of the Pentagon into which a hijacked jetliner crashed helped lessen the shock of the blow and saved lives within the building.

The hijacked airplane, traveling low and diagonally, hit a wedge section

Gallup Poll Found Strong Support for Retaliation

Even weeks after the terror attacks, the Gallup Organization found Americans supportive of mounting a military response.

The polling company announced Sept. 24 that, as of the weekend of Sept. 21–22, retaliatory military action was favored by some 90 percent of Americans.

Key conclusions from the Gallup survey:

- Given a choice, Americans favored a long-term war to defeat global terrorism networks over focusing on the specific terrorist groups responsible for the attacks.

- More than eight out of 10 Americans favored direct military action in Afghanistan, and more than seven out of 10 favored direct military action in Iraq.

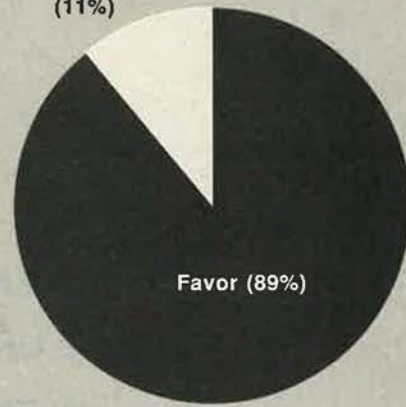
- Americans were willing to wait until the perpetrators were identified, rather than rushing in with immediate strikes.

- A strong majority of Americans supported military action against those responsible for the terrorism even when Americans are explicitly advised of possible negative consequences.

- There was strong support for conducting military action against the countries harboring the terrorists, as well as against the terrorists themselves.

- More than eight out of 10 Americans said it was very important to capture or kill Osama bin Laden.

Oppose/No Opinion
(11%)



Favor (89%)

The vast majority of Americans support the general idea of military action against the groups or nations responsible for the attacks. Support levels, in fact, are generally at or around an extraordinary 90 percent level. The most recent Gallup/CNN/USA Today poll, conducted Sept. 21–22, shows that 89 percent of Americans want action.

near the heliport on the Pentagon's west side. Floor-to-floor, interconnected vertical steel beams, sturdier windows, and Kevlar armor panels placed in the affected area's outer wall during a recent rebuilding project slowed the airplane and helped mitigate the effects of the blast.

"This was a terrible tragedy and people lost their lives," said Pentagon renovation manager Lee Evey in a Sept. 15 briefing for reporters. "But ... had we not undertaken this effort in the building, this could have been much, much worse."

The floors above the point of impact did not collapse for 30 to 35 minutes, noted Evey. This enabled many injured to escape.

The Pentagon has already awarded an initial \$145 million contract to Hensel Phelps Construction Co. of Chantilly, Va., to start repairs on the damaged section. The contract also covers renovation of remaining portions of the building and has a potential value of \$748 million.

USS Cole In Action Again

USS Cole, heavily damaged last year by a terrorist attack in the port of Aden, Yemen, was launched back into the water Sept. 14 after extensive repairs at Northrop Grumman's Pascagoula, Miss., shipyard.

After a bomb carried by a small craft nearly destroyed the ship, Cole was taken back to the United States aboard the Norwegian heavy-lift ship

US to Award Medals to DOD Victims

The Defense Department will award medals to those uniformed and civilian defense personnel who were killed or injured in the September terror attacks.

Secretary of Defense Donald Rumsfeld authorized the awards to recognize the sacrifice of those who were caught in the carnage.

Rumsfeld said Sept. 27 that military members would receive the Purple Heart. Civilians were to receive a new Medal for the Defense of Freedom. The Defense of Freedom medal will be the civilian equivalent of the Purple Heart.


The Pentagon chief described the dead and wounded as "combat casualties—brave men and women who risked their lives to safeguard our freedom, and they paid for our liberty with their lives."

As of the time of the announcement, about 90 DOD civilians qualified to receive the medal. The recipient must have been killed or wounded as a result of hostile actions.

The award can be made to DOD civilians killed or wounded at the Pentagon, at the World Trade Center, or aboard any of the four hijacked airliners.

The new medal is a golden medallion that hangs from a ribbon of red, white, and blue. The circle frames a bald eagle holding a shield. On the reverse side is a laurel wreath.





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Reservists Raced to Attack Site

Air Force reservists raced to the World Trade Center after it was struck by a hijacked jetliner—despite the fact that they had yet to be officially mobilized.

SrA. Edward Blunnie, a rapid runway repair specialist with Air Force Reserve Command's 514th Air Mobility Wing at McGuire AFB, N.J., was watching television in his Brooklyn, N.Y., home when the disasters struck. He called 14 other local airmen. All took quick leaves from civilian jobs and arrived at ground zero within hours.

"I just couldn't sit home and just watch this happen," said Blunnie.

Among those who joined him were Brooklyn-based recruiters, others from the 514th, and Air National Guard members from a nearby airport.

SSgt. Carlos Aponte, a member of the 514th Communications Squadron at McGuire, arrived two days after the attacks. An emergency medical technician in civilian life, Aponte also felt he couldn't just sit by and not help.

"I'll take every vacation day I have from work if that's what it takes," he said.

Capt. Brent Unger was not even in the area. An instructor with AFROTC Det. 440 at the University of Missouri, he was on leave from his job when he learned of the attacks.

He quickly changed his leave paperwork and drove 12 hours from Columbia, Mo., to New York City, where he was immediately put to work digging in the rubble.

Unger had been thinking of leaving the Air Force entirely. Now, he is thinking of staying as part of any military response to the attacks.

US is about fighting the era's new plague.

"A significant piece of this is going to be to bring our armed forces to the highest level of preparedness," he said.

DIA Wants New Strain of Anthrax for Tests

The Defense Intelligence Agency wants to cultivate a new Russian-developed strain of anthrax to help test the effectiveness of US vaccines.

In an effort code-named Project Jefferson, DIA has been working with a Russian agency to obtain a sample of a new or modified anthrax strain to use in tests to determine if current US vaccines will work against the strain. The project began in 1997, according to Pentagon spokeswoman Victoria Clarke, when reports that Russia might have developed a modified anthrax strain first surfaced in a medical journal.

DIA officials have asked the Russians for a sample but to date have not received one, Clarke told reporters Sept. 4.

Earlier this year, as part of Project Jefferson, DIA also began the legal and coordination process to be able to produce "small, limited quantities" of the agent to use in tests with US

Blue Marlin. In a construction bay in Pascagoula, workers made more than 550 tons' worth of steel structural repairs to the damaged exterior plating. They replaced or repaired other damaged equipment and recertified such critical systems as shafts and propellers.

Employees of Northrop's shipyard "display immense national pride in the restoration of *Cole*," said Capt. Philip N. Johnson, US Navy supervisor of shipbuilding, Pascagoula.

Work still to be completed includes alignment of machinery, energizing, testing of all systems, and completion of logistics and supply support outfitting.

Emergency Funding Headed Toward Pentagon

A significant portion of the \$20 billion in emergency funds requested by President Bush on Sept. 12 will go toward readying the US military to fight terrorism.

Deputy Secretary of Defense Paul Wolfowitz said Sept. 13 that he could not elaborate on exactly how much of the money would help which part of the military. He did say he hoped the enormity of the sums involved would help the world see how serious the

Air Force Implements Stop-Loss Order

In the wake of the terror attacks, the Air Force announced it implemented Stop-Loss effective Sept. 22, 2001.

Stop-Loss allows the Air Force to retain its members beyond established dates of separation or retirement. Donald Rumsfeld, the Secretary of Defense, authorized Stop-Loss to support the American campaign against terrorists and their nation-state accomplices.

The first phase of that operation, Noble Eagle, was superseded by Operation Enduring Freedom.

Lt. Col. Jan Middleton, chief of promotion, evaluation, and separation policy for the Air Force, made this statement:

"The purpose of this action is to meet mission requirements in support of Operation Noble Eagle and any follow-on operations regarding the Sept. 11 terrorist attacks on the nation."

The initial Stop-Loss period for all Air Force career fields will extend for at least 30 days.

The announcement said USAF will use a Total Force approach, calling on active duty, Guard, and Reserve forces to capitalize on the unique composition of its career fields.

All retirement, separation, or component transfer actions were to be suspended until termination of Stop-Loss, unless an exemption is applicable or waiver is granted.

The Defense Department instituted a Stop-Loss provision in the run-up to the 1991 Gulf War.

War on Terrorists—The Legal Foundation

S.J. Res. 23 Joint Resolution

To authorize the use of United States armed forces against those responsible for the recent attacks launched against the United States.

—Whereas, on Sept. 11, 2001, acts of treacherous violence were committed against the United States and its citizens; and

—Whereas, such acts render it both necessary and appropriate that the United States exercise its rights to self-defense and to protect United States citizens both at home and abroad; and

—Whereas, in light of the threat to the national security and foreign policy of the United States posed by these grave acts of violence; and

—Whereas, such acts continue to pose an unusual and extraordinary threat to the national security and foreign policy of the United States; and

—Whereas, the President has authority under the Constitution to take action to deter and prevent acts of international terrorism against the United States: Now, therefore, be it

Resolved by the Senate and the House of Representatives of the United States of America in Congress assembled,

Section 1. Short Title

This joint resolution may be cited as the "Authorization of Use of Military Force."

Section 2. Authorization for Use of United States Armed Forces.

(a) In General.—That the President is authorized to use all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks that occurred on Sept. 11, 2001, or harbored such organizations or persons, in order to prevent any future acts of international terrorism against the United States by such nations, organizations, or persons.

(b) War Powers Resolution Requirements.—

(1) Specific Statutory Authorization.—Consistent with section 8(a)(1) of the War Powers Resolution, the Congress declares that this section is intended to constitute specific statutory authorization within the meaning of section 5(b) of the War Powers Resolution.

(2) Applicability of Other Requirements.—Nothing in this resolution supercedes any requirement of the War Powers Resolution.

Approved Sept. 18, 2001.

Statement by the President

Today I am signing Senate Joint Resolution 23, the "Authorization for Use of Military Force."

On Sept. 11, 2001, terrorists committed treacherous and horrific acts of violence against innocent Americans and individuals from other countries. Civilized nations and people around the world have expressed outrage at, and have unequivocally condemned, these attacks. Those who plan, authorize, commit, or aid terrorist attacks against the United States and its interests—including those who harbor terrorists—threaten the national security of the United States. It is, therefore, necessary and appropriate that the United States exercise its rights to defend itself and protect United States citizens both at home and abroad.

In adopting this resolution in response to the latest terrorist acts committed against the United States and the continuing threat to the United States and its citizens from terrorist activities, both Houses of Congress have acted wisely, decisively, and in the finest traditions of our country. I thank the leadership of both Houses for their role in expeditiously passing this historic joint resolution. I have had the benefit of meaningful consultations with members of the Congress since the attacks of Sept. 11, 2001, and I will continue to consult closely with them as our nation responds to this threat to our peace and security.

Senate Joint Resolution 23 recognizes the seriousness of the terrorist threat to our nation and the authority of the President under the Constitution to take action to deter and prevent acts of terrorism against the United States. In signing this resolution, I maintain the long-standing position of the executive branch regarding the President's constitutional authority to use force, including the armed forces of the United States and regarding the constitutionality of the War Powers Resolution.

Our whole nation is unalterably committed to a direct, forceful, and comprehensive response to these terrorist attacks and the scourge of terrorism directed against the United States and its interests.

George W. Bush
The White House,
Sept. 18, 2001

vaccines, she said. Creating a small amount of agent would be in compliance with the 1972 Biological Weapons Convention, which allows purely defensive research, stated Clarke.

"We take the threat of the spread of biological and chemical warfare very, very seriously."

She spoke one week before the Sept. 11 terror attacks, which has measurably increased concern about biological warfare.

Reserve Chaplains Mobilize

Air Force Reserve Command chaplains and chaplain assistants mobilized to provide what comfort they could to the service personnel who handled the bodies of those killed in the attack on the Pentagon.

An AFRC chaplain team accompanied the port mortuary personnel who traveled from Travis AFB, Calif., to Dover AFB, Del., to help process remains. Individual mobilization augmentee chaplains also traveled to Dover to help ease the stress involved with this incredibly difficult task.

"People are vulnerable at this time," said Lt. Col. Jeffrey L. Neuberger, chief of personnel and readiness for Headquarters AFRC Chaplain Service. "These teams will need our ministry for days, weeks, and months after exposure to this situation."

Civil Air Patrol Springs Into Action in Disaster

At the request of US authorities, the Civil Air Patrol conducted dozens of flights across the country following the Sept. 11 terrorist attacks.

Among CAP's missions were three passes over the site of the World Trade Center the day after the disaster.

These flights, carried out by a Cessna 172 piloted by CAP Lt. Col. Jacques Heinrich, provided high-resolution digital images of the zone for the New York State Emergency Management Office.

"Civil Air Patrol provided the first direct aerial perspective of the disaster site for the state of New York," said Dan O'Brien, graphic information program manager for the state's emergency management operations center in Albany.

In other missions, CAP volunteers from North Carolina flew 50 cases of blood from Raleigh, N.C., to an American Red Cross facility in Baltimore.

The New York CAP wing flew 30 noise-canceling headsets to the New

Bereaved Americans Visit Pentagon

Family members and loved ones of those missing or dead in the crash of a hijacked jetliner into the Pentagon were taken to the site Sept. 15 for an emotionally wrenching close-up visit.

Holding hands, crying, clinging to each other, the group created a makeshift memorial by stacking flowers and personal mementos on a nearby flatbed truck.

The visit was prompted by questions asked at the twice-daily briefings of the Family (Casualty) Assistance Center at an Arlington, Va., hotel.

"Among the questions was, 'Will we have a chance to see the crash site?'" said a DOD spokesman, Navy Lt. Dave Guy. "The answer was always, 'Yes, that's our intention.' We took nearly 350 family members, loved ones, volunteers, and staff members to the site."

There was a dramatic change in some of the visitors on the way back to the hotel, according to Guy. Some seemed more at peace after actually seeing the site.

USAF Bolstered NY Rescue Crews

The horde of rescue workers that swarmed over the wreckage of the World Trade Center in the aftermath of the terror attacks included more than 100 Air Force reservists who are civilian policemen or firemen in their day jobs.

These airmen, Guardsmen and Reservists, were intensely affected by their experience at the site, as were all who rushed to help the thousands of victims.

"It's horrible," said TSgt. Nick Marchisello, a fireman with AFRC's 514th Civil Engineer Squadron at McGuire AFB, N.J., on Sept. 14.

Marchisello was in New York with the Clifton, N.J., fire department, working with rescue dogs in an attempt to locate any survivors in the pile of concrete that was once among the world's tallest buildings.

His military background has only helped him in his civilian career, he said.

"The [Air Force] fire program expects and encourages you to constantly upgrade and continue your education about the firefighting profession," said Marchisello. "People come to you because of the excellent training that you have received."

SSgt. Anthony Latona, a member of the Air National Guard's 105th Airlift Wing at Stewart Airport in Newburgh, N.Y., is also a Clifton firefighter. He could only describe the scene at the site in comparison to Rwanda, which he had seen while on Air Force active duty.

"I served in Rwanda. ... Going in there, you're expecting to see death and devastation, but to be here like this is just ..." he said, not finishing his sentence.

Air Force service helped him prepare for the difficulties of work in the midst of such a catastrophe, said Latona.

"Being in the military has made me a better fireman and prepared me to do what I have to do," he said.

A1C Francis Perillo, from the ANG's 106th Air Rescue Wing at Francis S. Gabreski Airport, N.Y., also helped at the World Trade Center site. As part of the New York City Emergency Response Team, he spent off-duty time combing the rubble.

"I felt something inside me," said Perillo, a native of Bayshore, N.Y. "I just had to do something."

York City area for use by rescue workers listening for faint sounds in the World Trade Center rubble.

The Connecticut, Massachusetts, and Rhode Island wing of CAP flew 12 sorties and delivered 3,000 pounds of medical supplies to New York's JFK Airport for delivery to Mount Sinai Hospital.

The Georgia CAP wing transported from Dobbins ARB, Ga., to Hanscom AFB, Mass., supplies for robots used by the US Army at the disaster sites.

The Tennessee Wing flew camera equipment to Trenton, N.J., from McGhee Tyson Airport, Tenn.

Many other wings provided communications, blood transport, and other services.

"For the first three days following the [attacks], Civil Air Patrol flights were the only nonmilitary aircraft in the skies," said Col. Rick Greenhut, Northeast Region commander. "The flights were authorized by NORAD, [which] invoked wartime aviation restrictions following the attack."

Guard's Civil Support Team Scrambles

The Sept. 11 attacks led to the first operational employment of a certified National Guard civil support team.

The 22-person New York National Guard Weapons of Mass Destruction Civil Support Team, based in Scotia, N.Y., was activated by the state within hours of the attacks on the World Trade Center and the Pentagon.

By 8:30 p.m., the team was near the site of the World Trade Center, sampling air to help ensure no biological or chemical contamination was present.

The air-sampling mission continued for some 18 hours. Subsequently, the team provided communications services for FBI agents at the site.

The team handled "satellite communications, secure e-mail, telephone and radio support—they're providing all types of communications for the FBI," said an ANG spokesperson Maj. Ellen Krenke.

Red Flag Gets Space-Related Twist

This year's Red Flag warfighting exercise came with a twist—adversary forces able to use space to their own advantage.

For the first time, the 527th Space Aggressor Squadron from Schriever AFB, Colo., took part in the annual test of the Air Force's best fighter pilots. A truck loaded with electronic warfare equipment from the 527th deployed to a far corner of Nellis AFB, Nev., and jammed Global Positioning System satellite signals during the Aug. 10–Sept. 7 exercise.

Loss of the signals denied GPS communications to “downed” airmen and rescue pilots. The move created enough problems for the search-and-rescue event that the truck eventually became a high-priority target for blue forces and was “killed” by an F-16 tasked with threat suppression.

“Times have changed and we have to look at the broader threat,” said Lt. Col. Conrad Widman, 527th commander. “Not only do we have to understand the things in the air, we have to understand how the loss of space capabilities affects combat operations.”

The Electronic Warfare Flight uses commercially available equipment and known adversary capabilities and tactics. The 527th's other units include an Imagery Exploitation Flight, which uses commercial satellite photos to piece together a picture of US forces and capabilities, and a Space Control Flight, which analyzes future countermeasure capabilities and develops new tactics to protect US space assets.

USAF Turns Away From X-33, X-37

On Sept. 7, the Air Force announced that it will not pick up responsibility for NASA's X-33 experimental technology demonstrator and will end support of NASA's X-37 program at the end of Fiscal 2002.

Both the X-33 and X-37 are unmanned vehicles. The X-33 was intended to test technologies usable in a replacement for the aging space shuttle system. The X-37 is a prototype of a reusable, flexible spacecraft that can be launched into space by another vehicle, maneuver using its own engine, and then re-enter the atmosphere to land.

In March, NASA allowed its X-33 contractor agreement to expire and deferred X-37 work.

Both programs have made significant contributions toward understanding spaceplane vehicle performance and cost and integration issues. But after a 60-day assessment the Air Force concluded that “neither of these programs provide a level of military utility needed to continue development and funding by the Air Force,” according to a news release announcing the decision.

White House Taps Six for Aerospace Commission

The White House announced Aug. 22 that it will nominate John W. Douglass, president of the Aerospace Industries Association, to the Presidential Commission on the Future of the US Aerospace Industry.

Other intended Administration ap-

pointments to the panel include Robert Walker, a former member of Congress and chairman of the Wexler Group; Buzz Aldrin, former astronaut and president of Starcraft Enterprises; Edward M. Bolen, president of the General Aviation Manufacturers Association; Heidi R. Wood, Morgan Stanley aerospace defense analyst; and Neil de Grasse Tyson, director of the Hayden Planetarium, American Museum of Natural History.

Congress established the aerospace panel last year in an effort to identify problems that might weaken the nation's

aerospace industry if left unaddressed. Among the specific items on its agenda are possible methods for increasing US aerospace access to the global economy and removal of barriers to public/private cooperation.

Earlier Congress appointed these individuals to the panel: John Hamre, former deputy secretary of defense; Robert J. Stevens, Lockheed Martin president and chief operating officer; William Schneider Jr., former under-secretary of state for security assistance, science, and technology; Tillie K. Fowler, former member of Congress; R. Thomas Buffenbarger, president of the International Association of Machinists and Aerospace Workers; and F. Whitten Peters, former Secretary of the Air Force.

Disorientation Caused Fatal Korea Crash

Pilot spatial disorientation was the likely cause of a June 12 F-16 crash 35 miles southeast of Kunsan AB, South Korea, according to the accident investigation report.

The pilot, 1st Lt. Randolph E. Murff, 35th Fighter Squadron, 8th Fighter Wing, was killed in the incident.

Murff was the wingman in a two-ship formation on a night training mission. He followed the lead pilot into a left turn at an altitude of about 20,000 feet. He then continued rolling left for 23 seconds while the nose of the F-16 dropped into a dive. He made no effort to correct the roll until his aircraft was plunging, inverted, toward the ground. Subsequent erratic control inputs were ineffective.



Randolph AFB, Tex., has been designated a national historical landmark in recognition of its role in the formation of military aviation and its unique architecture, such as this building, nicknamed Taj Mahal.



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According to Brig. Gen. Dale C. Waters, accident investigation board president, Murff apparently failed to check his attitude references because his attention was focused on watching his instructor pilot through his night vision goggles, with which he was relatively unfamiliar. This caused him to unknowingly begin his steep dive.

After he realized his situation, the pilot made unproductive efforts to regain control via rapidly alternating left and right rolls. This is evidence that he was experiencing incapacitating spatial disorientation, according to Waters.

Thirteen seconds after he began trying to pull out of his dive and one second before impact, Murff attempted to eject. At that point he was "outside the survivable envelope for the ACES II ejection system," summarizes the accident report.

Edwards Ready for ABL Tests

A team of military, civilian, and contract employees is working hard at Edwards AFB, Calif., to ready facilities for the upcoming tests of one of the Air Force's major development efforts—the Airborne Laser.

The ABL prototype, currently housed at a Boeing plant in Wichita, Kan., will be moved to Edwards by spring. The test effort is scheduled to reach its climax in 2003, with an attempt to shoot down a ballistic missile in flight using the laser aboard the ABL, a modified Boeing 747.

ABL is a unique test program for Edwards, said base officials. In part, that is because of the industrial grade chemicals needed to produce the laser beam.

Handling the chemicals will require support and cooperation from virtually every unit on the base.

"The only way this test program can succeed is to have total support from all Edwards organizations, not only the test wing but our medical clinic, fire department, transportation, security forces, among others," said Col. Howard Lewis, 412th Test Wing vice commander.

Unlike most Edwards test efforts, the ABL will also require significant initial ground integration and test. Work has almost been completed on a new 7,000-square-foot Systems Integration Laboratory to handle this job.

Once the laser technology is tested in the SIL, the Edwards team will integrate both it and the advanced laser optics into the ABL aircraft in preparation for flight testing—some-



NASM photo by Eric Long

The forward fuselage of the *Enola Gay* travels down Independence Avenue in Washington, on its way to the Garber restoration facility in Maryland.

Here Comes the *Enola Gay*

Motorists driving into Washington, D.C., Sept. 5 met an unusual sight: the forward fuselage of the *Enola Gay*—the B-29 that dropped the atomic bomb on Hiroshima—rolling along on a flatbed truck, gleaming brightly in the morning sunshine.

The historic bomber was on its way from the National Air and Space Museum downtown to the Paul E. Garber Preservation, Restoration, and Storage Facility in Suitland, Md., where it will be prepared for display as the centerpiece of a huge new museum annex that will open in 2003.

In 1994, a previous administration at the Air and Space Museum had planned to use the *Enola Gay* as a prop in a political horror show. The scheme began to untangle when *Air Force Magazine* exposed the plan in "War Stories at Air and Space" in April 1994. Under fire from Congress and public opinion, the museum canceled the horror show and fired the museum director.

A de-politicized exhibit, built around the 53-foot forward fuselage of the airplane and featuring facts, film, and artifacts from the mission, opened to the public in 1995. By the time it closed in May 1998, it had drawn nearly four million visitors, making it, by far, the most popular special exhibition in the museum's history. Since 1998, the forward fuselage has been stored in a walled-off section of the museum.

Fully assembled for the first time in many years, the *Enola Gay* will be on display at the museum's Udvar-Hazy Center when it opens in 2003 at Dulles Airport outside Washington. The entire airplane, 99 feet long with a wingspan of 141 feet, is too large for exhibit in current facilities.

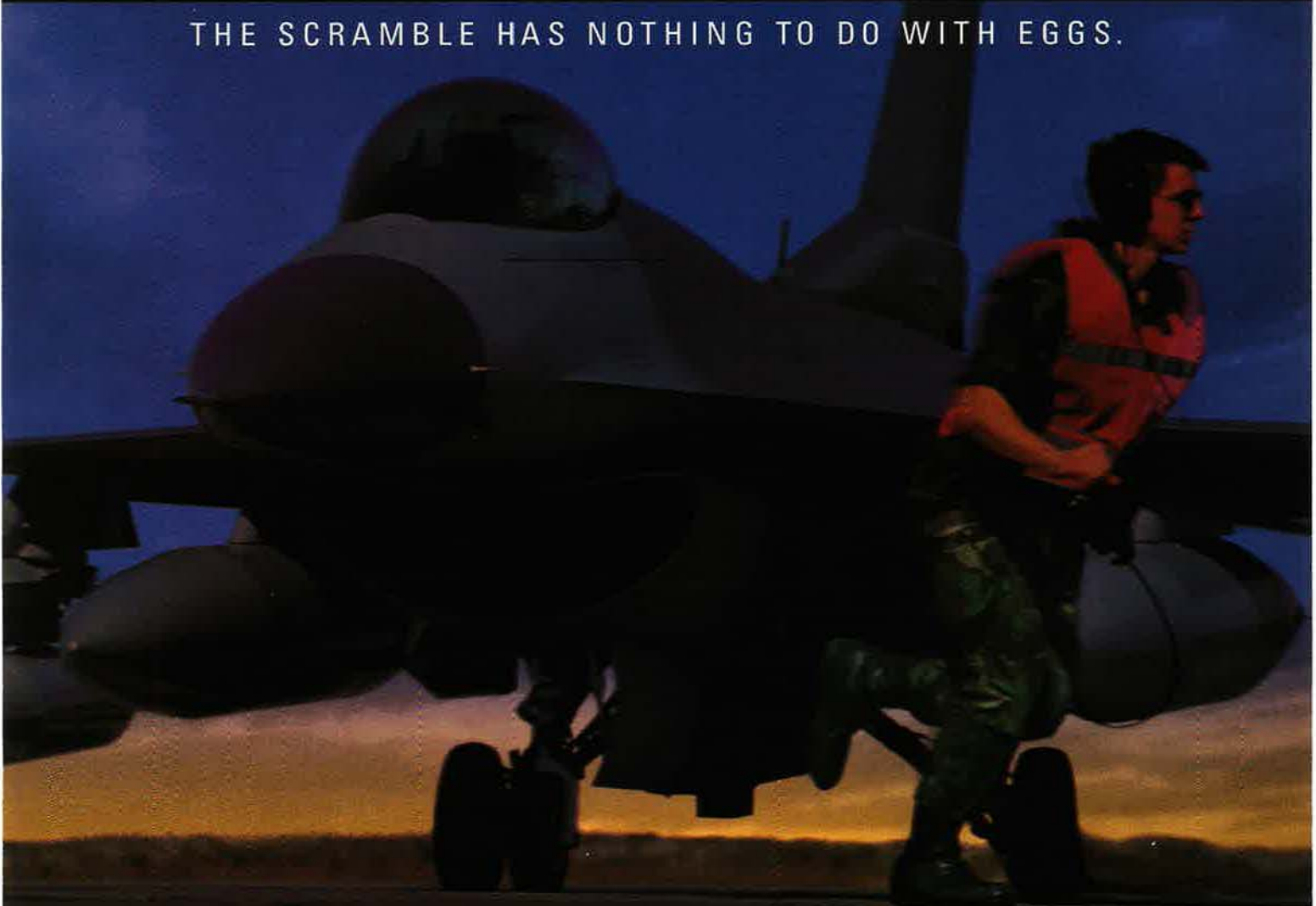
When the *Enola Gay* was brought to the museum for the 1994 exhibit, it was transported through the streets in the middle of the night. This time, museum officials decided to transport it openly and invited the news media to come watch.

The wide-load truck and escort vehicles moved from the west entrance to the museum along Independence Avenue and Pennsylvania Avenue into the Maryland suburbs and on to the Garber facility by Silver Hill Road.



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thing that will require the support of such neighbors as the Army's White Sands Missile Range in New Mexico.

New Path for USAF Leader Program

The Developing Aerospace Leaders initiative, originally a two-year chartered program, will be institutionalized as a long-term function within the Air Staff, according to Air Force officials.

The DAL program office began operation in March 2000. Its purpose has been to review current Air Force developmental policies and procedures and recommend any changes necessary to develop 21st century-ready service leadership.

The new organization will consist of a DAL Support Office and a DAL Advisory Board, which will report to the Chief of Staff.

"We must make the same commitment to our human resource development as we have to the development of our systems and platforms," said Gen. Michael E. Ryan, then Air Force Chief of Staff, when announcing the change on Sept. 5.

Housing, Recruitment Are Priorities

Improvement of bachelor and family housing is one of the biggest quality-of-life challenges facing the Department of Defense, said Charles S. Abell, assistant secretary of defense for force management policy, at a wide-ranging Aug. 31 briefing for reporters.

"Facilities are our first priority at

this point," he said. Pentagon officials have realized that military construction will not be able to build and renovate as much or as quickly as is necessary. All signs point to an increasing involvement of private contractors.

"Privatization ... that's where [Defense Secretary Rumsfeld's] priorities are," said Abell.

On other issues, Abell said DOD officials are continuing to study major changes in the military's long-standing up-or-out retention policies, as well as longer tours of duty, longer careers, and possible changes to the retirement system.

Both the services themselves and outside consultants will weigh in on this effort to develop comprehensive new human resource strategies.

All branches of the military will meet recruiting goals this year, added Abell. But that does not mean it is time for DOD to rest on its recruiting laurels.

The services "made their numbers because a lot of people worked 20-hour days, six and seven days a week, to attract and contract those high-quality young men and women," said Abell.

B-52 Launches Updated CALCM

A Reserve B-52 crew from the 93rd Bomb Squadron, Barksdale AFB, La., carried out the first operational launch of an AGM-86C Block 1A Conventional Air Launched Cruise Missile on Aug. 16.

The successful test was carried out at the Utah Test and Training Range, near Ogden, Utah. Among

other things, it provided the Reservists with a higher level of training than their normal day-to-day flying.

The shot was "a great chance for us to train with real weapons," said Maj. Rob Burgess, mission aircraft commander.

The AGM-86C is an air-to-ground strategic cruise missile with a range of more than 1,500 miles. Block 1A enhancements include better precision strike accuracy, Global Positioning System anti-jamming, and an improved terminal flight profile.

Top DOD Officials Oppose Spectrum Reallocation

The Pentagon leadership is urging Congress to delay reallocation of government-controlled communications bands until a comparable spectrum can be identified for Defense Department use.

"DOD must not be forced to relocate to other spectrum prematurely," wrote Secretary of Defense Donald Rumsfeld and then Joint Chiefs Chairman Gen. Henry H. Shelton in an Aug. 27 letter to Senate Majority Leader Tom Daschle.

At issue is the 1755 to 1850 MHz band of the radio spectrum. The Federal Communications Commission is considering this slice of the dial as the spectrum of choice for third-generation commercial wireless communications.

Defense officials are concerned that this range of electromagnetic emissions overlaps with satellite control, precision guided munitions, tactical radio relays, and Global Positioning System signals.

Allowing private firms access to 1755-1850 MHz before considering its full impact would "have serious consequences on our national security and increase the risk to military personnel," wrote Rumsfeld and Shelton.

Engine Failure Caused F-16 Crash

Air Force accident investigators have determined that engine failure caused the crash of an F-16 from the 27th Fighter Wing, Cannon AFB, N.M., on March 21.

The pilot received minor injuries after ejecting.

Failure of the No. 3 main thrust bearing was the specific cause of engine shutdown, according to the accident report. Two other factors, in turn, led to the bearing failure. First, a crew chief did not perform a proper preflight maintenance inspection. Second, maintenance personnel missed the fact that a pump filter

USAF photo by Leigh Anne Bierstine



Maj. Kelly Latimer, Air Force Test Pilot School instructor pilot, prepares for takeoff in the Long EZ with its owner Tom Staggs. TPS students at Edwards AFB, Calif., broaden their flying experiences with the canard-controlled, propeller-driven craft.

in the engine's oil system was contaminated.

News Notes

■ James G. Roche, Secretary of the Air Force, and Gen. John P. Jumper, USAF Chief of Staff, on Sept. 13 issued a joint statement thanking all Air Force personnel who had joined the rescue and recovery tasks in the wake of the Pentagon and World Trade Center attacks. "Many of you have performed superhuman feats of heroism and courage," they said.

■ Air Force Reserve Capt. Bernetta Lane was one such hero. A nurse at the DiLorenzo Tricare Health Clinic in the Pentagon, she helped set up patient care facilities in the parking lot and retrieve medical supplies from the damaged building. "I just focused on maintaining my bearing and working with everyone to pull through this," she said.

■ US Department of Defense representatives met with counterparts from China on Guam on Sept. 14 and 15 to discuss principles and procedures for the safety of military aircraft and ships operating in the vicinity of one another. The meeting was "conducted in a professional atmosphere," according to the Pentagon.

■ On Sept. 10, Secretary of Defense Donald Rumsfeld kicked off the 2001 Acquisition and Logistics Excellence Week with a speech that called on Pentagon employees to launch an all-out campaign to shift DOD resources from the bureaucracy to the battlefield. "The modernization of the Department of Defense is a matter of some urgency—in fact, it could be said that it's a matter of life and death," said Rumsfeld.

■ When Air Force Reserve Command pilots from Homestead ARS, Fla., patrol the skies over Iraq on



USAF photo by TSgt. Mark Bucher

Contractors implode Minuteman III silo H-22, near Petersburg, N.D., on Aug. 24. It was the last silo required to be destroyed under START I.

Minuteman Facility Likely To Be Preserved

A Minuteman silo and a missile alert facility in North Dakota are likely to be preserved as a static display of Cold War-era history.

One hundred forty-nine ICBM silos and 14 controlling missile alert facilities spread across the Great Plains have already been destroyed in accordance with START (Strategic Arms Reduction Treaty) I.

But silo N-33 and alert facility O-0, both located near Cooperstown, N.D., and operated by units from Grand Forks Air Force Base, may not share their fate. The Air Force intends to turn both over to the North Dakota State Historical Society as soon as details can be worked out.

"The missiles have been an important part of North Dakota's history, and the state wants the opportunity to preserve some of [that history] through this effort," says Heidi Durako, 319th Civil Engineer Squadron environmental flight cultural resource manager.

Under terms of the START pact, the silo and alert facility must still be rendered inoperable. Facility O-0 has already been stripped of its ability to launch missiles. Silo N-33 must be filled with gravel to within a half-meter of the bottom of the launcher closure door. The door will then be welded shut after a 30-day period in which treaty partners (Russia, Belarus, Kazakhstan, and Ukraine) have the option to inspect silo tube destruction.

Senior Staff Changes

PROMOTIONS: To **General:** Robert H. Foglesong. To **Lieutenant General:** Teed M. Moseley. To **ANG Lieutenant General:** Daniel James III. To **ANG Major General:** Ronald J. Bath, Frederick H. Forster, Juan A. Garcia, Michael J. Haugen, Steven R. McCamy, Jerry W. Ragsdale, William N. Searcy, Giles E. Vanderhoof. To **ANG Brigadier General:** Higinio S. Chavez, Barry K. Coln, Alan L. Cowles, James B. Crawford III, Marie T. Field, Manuel A. Guzman, Roger P. Lempke, George R. Niemann, Frank Pontelandolfo Jr., Gene L. Ramsay, Terry L. Scherling, David A. Sprengle.

CHANGES: Brig. Gen. Elizabeth A. Harrell, from Dir., Logistics & Security Assistance, EUCOM, Stuttgart-Vaihingen, Germany, to Dir., Maintenance, DCS, Instl. & Log., USAF, Pentagon ... Lt. Gen. (sel.) Daniel James III, from Adjutant Gen., Austin, Tex., to Dir., ANG, Arlington, Va. ... Maj. Gen. (sel.) Quentin L. Peterson, from Cmdr., 97th AMW, AETC, Altus AFB, Okla., to Chief, Office of Defense Cooperation to Turkey, EUCOM, Ankara, Turkey ... Maj. Gen. Craig P. Rasmussen, from Chief, Office of Defense Cooperation to Turkey, EUCOM, Ankara, Turkey, to Dir., Log. & Security Assistance, EUCOM, Stuttgart-Vaihingen, Germany. ■

deployment this fall, they will be doing it with more powerful engines. The 482nd Fighter Wing received the last of 17 F-16s equipped with peppy Block-30 GE engines earlier this year.

■ The Space Based Infrared System High team, led by Lockheed Martin Space Systems, successfully completed an Air Force system critical design review Aug. 31.

■ ACS Government Services of Rockville, Md., signed a contract with the Defense Finance and Accounting Service to provide pay services to 2.5 million military retirees and annuitants. This outsourcing move by DOD is expected to save \$20 million over the life of the contract. The transition to ACS should be completed by Janu-

ary 2002. Some current DFAS employees may be hired by ACS.

- An Air Force T-37 jet trainer from Columbus AFB, Miss., crashed Sept. 5 in an unpopulated area near Montpelier, Miss. The student pilot, 2nd Lt. James King, ejected safely from the aircraft.

- The Air Force received three firefighting awards at the annual DOD Fire-Rescue International Training Conference in New Orleans in late August. SSgt. Kile W. Stewart from the 18th Civil Engineer Group, Kadena AB, Japan, was named DOD Military Firefighter of the Year and Joseph R. Suddarth from the 96th Civil Engineer Group, Eglin AFB, Fla., DOD Civilian Firefighter of the Year. The 35th Civil Engineer Squadron's fire protection flight, Misawa AB, Japan, earned the DOD Outstanding Fire Department of the Year honor.

- The first guided launch of a Joint Direct Attack Munition from an F/A-18E Super Hornet successfully hit its target at the Navy's China Lake, Calif., test range Aug. 29.

- The Department of Defense needs to make it easier for reservists to come on board for active duty, according to a top reserve official. "I've been told there are 32 ways to come on active duty, depending upon what organization you're in and where you're going and for how long," Charles Duehring, acting assistant secretary of defense for reserve affairs, told reporters Aug. 30. "We've got to ... try to reduce that number with a goal of making it a very seamless transition."

- On Sept. 5 the Federal Services division of Delta Dental Plan of California announced that the Tricare Retiree Dental Program is now open to all Medal of Honor recipients.



SSgt. Merle Hudson, a combat arms instructor with the 355th Security Forces Squadron at Davis-Monthan AFB, Ariz., oversees other base personnel as they attempt to qualify with 9 mm pistols—in preparation for possible deployment.

- An A-10 Thunderbolt II from the 23rd Fighter Group, Pope AFB, N.C., crashed Sept. 3 in Arizona near Mesquite, Nev. The pilot, Capt. Frederick H. Sellers, ejected safely and was released from the hospital that afternoon.

- A launch team at Vandenberg AFB, Calif., successfully launched a prototype rocket motor booster Aug. 31. The prototype is intended for use with the Ballistic Missile Defense Organization's ground-based mid-course interceptor.

- Civil Air Patrol leaders elected Brig. Gen. Richard L. Bowling as the Air Force auxiliary's national commander during CAP's annual convention in Cincinnati, Aug. 15-18.

- EC-18B Advanced Range Instru-

mentation Aircraft made their final ARIA flight at Edwards AFB, Calif., on Aug. 24. The two ARIA airplanes, which can record and relay telemetry from space vehicles, are being transferred to the Joint STARS program.

- Maj. Barry R. Cornish was presented with the 2001 Koren Kolligian Jr. Trophy in a Pentagon ceremony Aug. 24. The award recognizes actions taken to avert or minimize the impact of an aircraft accident. While assigned to the 58th Fighter Squadron, Eglin AFB, Fla., in January 2000, Cornish was able to safely land an F-15 aircraft after failure of a main landing gear upon initial touchdown caused severe damage to the F-15. His swift reaction prevented loss of life and aircraft.

- General Atomics Aeronautical Systems' Predator B Unmanned Aerial Vehicle reached a milestone altitude of 42,000 feet during flight envelope expansion tests at Edwards AFB, Calif., on Aug. 17.

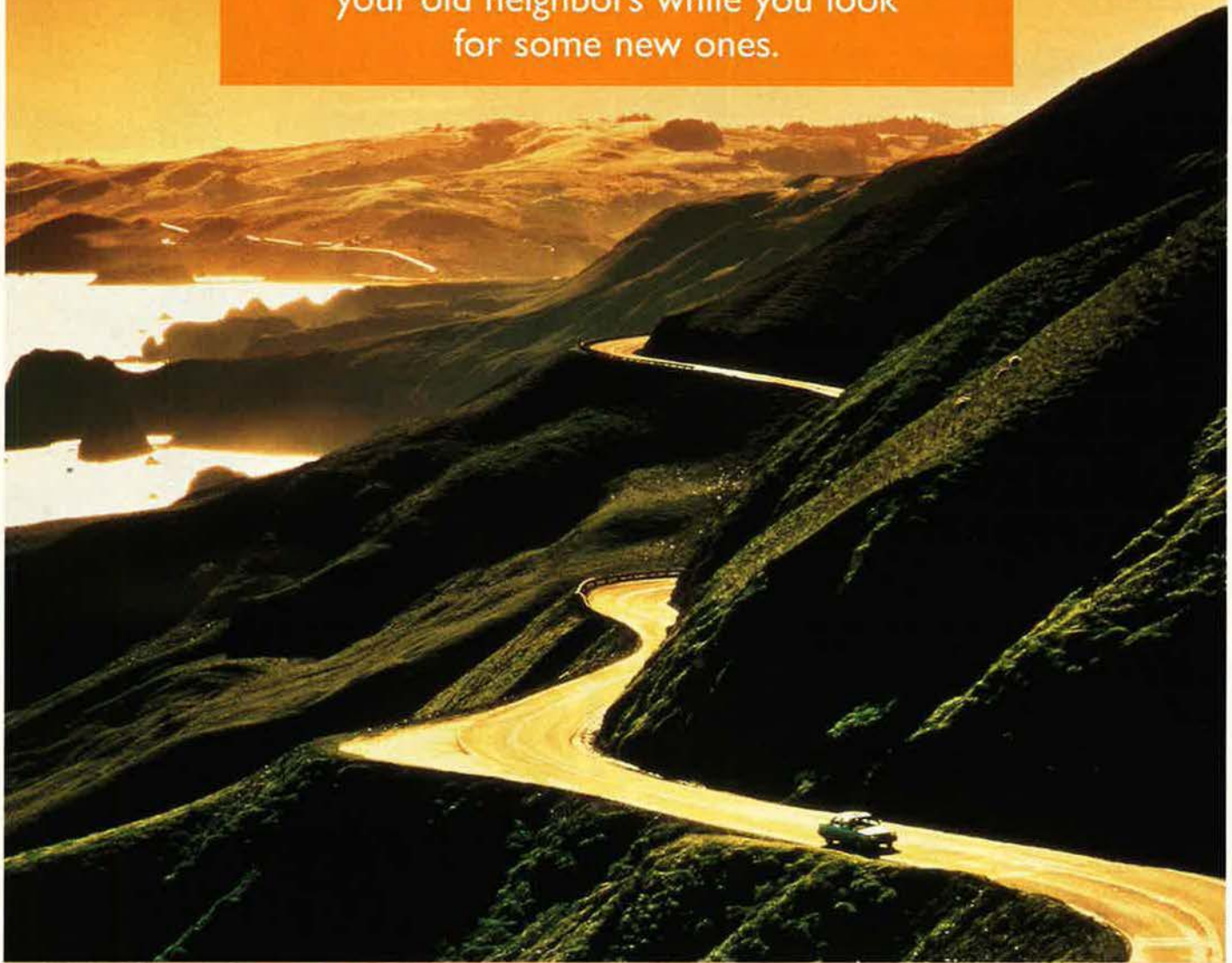
- Air Force Research Laboratory's Information Directorate awarded a contract to Logicon, a Herndon, Va.-based firm, to develop a prototype "Network Early Warning System" capable of alerting DOD of impending Internet-based attacks on department computer networks.

- Beginning Oct. 1, Air Force Reserve Command increased the maximum amount of aid available under its Tuition Assistance Program to \$3,500 a year. At the same time, the program was expanded to include courses up to a master's degree. ■

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Obit photo by Kenn Mann

An aerial photograph of New York City, showing the dense urban grid and the Hudson River. In the upper left corner, the tail section of an F-15 fighter jet is visible, flying towards the right. The sky is clear blue with some light clouds near the horizon.

A Massachusetts Air National Guard F-15 with live missiles refuels from a KC-10 tanker over New York City. After the Sept. 11 attacks, F-15s and F-16s have been flying Combat Air Patrol over New York, Washington, D.C., and other cities, ready to intercept kamikaze-style attackers. A number of intercepts have been made on airliners reporting on-board disturbances.

Operation Enduring Freedom began in earnest in early October with air strikes against terrorist and military targets and humanitarian relief airdrops in Afghanistan.

The War on Terror

Photography by DOD photographers

Destination secret, nameplates painted over, and patches removed, an F-15E crew of the 48th Fighter Wing from RAF Lakenheath, UK, gears up to deploy to Southwest Asia for Operation Enduring Freedom. The initial strikes of the operation aimed at terrorists in Afghanistan and the Taliban regime that supports them. Below, an F-15E carries a multipurpose load of air-to-air and air-to-ground ordnance—both laser-guided and “dumb” bombs—extended-range fuel tanks, targeting pods, and a data link pod.



USAF photos by SSGT. William Greer



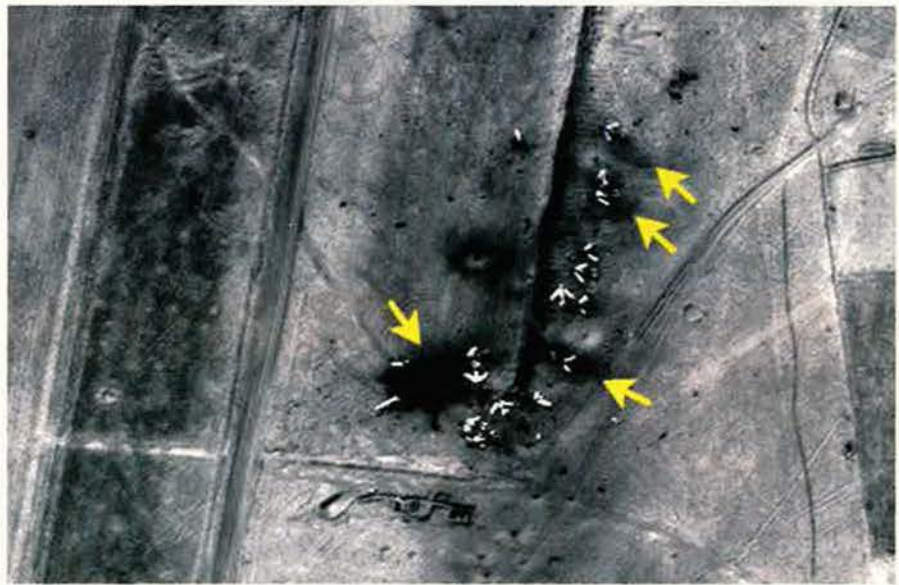
Laser-guided bombs get the preflight once-over. Planning for air strikes goes right down to the clothing and footwear.



The Afghanistan campaign involves two fronts: terrorism and starvation. Operating from Ramstein AB, Germany, C-17s drop humanitarian food relief to Afghans already suffering from famine. The airdrops of Humanitarian Daily Rations were made from extreme altitudes, to protect the aircraft and crews as air defenses had not yet been beaten down.



USAF photo by TSgt. Cary Humphries



All three types of Air Force heavy bombers—B-52s, B-1Bs and B-2s—have seen action in Afghanistan. At top, a B-52H armed with satellite-guided 2,000-pound bombs gets a rousing send-off from crews at Diego Garcia, a British atoll in the Indian Ocean. Above and right, a lineup of MiG fighters and a cargo airplane at Herat Airfield, Afghanistan, before and after US precision attacks. No enemy fighters came up to challenge US warplanes.



Left, a B-1B launches from Diego Garcia. The B-2s participating in the operation flew 44-hour missions from Whiteman AFB, Mo., attacking targets and recovering at Diego Garcia, where fresh crews took the controls for the long trip home.

Long after the attack, the ruins of the World Trade Center still smolder. The twin towers and other buildings were demolished by the Sept. 11 attacks, which killed more than 5,000 from the US and other countries. Below, a grim reminder of the toll on the first responders: 343 firefighters and 23 police officers died as the buildings collapsed.



USAF photo by Gary Ell

US Navy photo by Jim Watson



USAF photo by Capt. Jim Fabio

New Jersey firefighter Anthony Latona, awaiting the order to enter the rubble of the north tower, is also a staff sergeant in the New York Air National Guard. Many firemen and police officers are Guardsmen or Reservists; call-ups after the attacks strained their ranks.

An MH-53 Pave Low special operations helicopter from Hurlburt Field, Fla., swoops toward the South Battery. Working from McGuire AFB, N.J., the aircraft's crew transported search-and-rescue teams into the area near the World Trade Center.



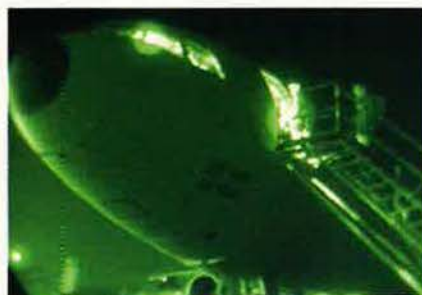
USAF photo by Gary Ell



McGuire Air Force Base quickly became a hub of USAF activity in the rescue and recovery effort. Above, Federal Emergency Management Agency supplies are off-loaded; at right, FEMA search-and-rescue personnel go home to California after 10 days of exhausting effort.



USAF photos by Scott H. Spitzer



An Air Force civilian worker hooks up telephone and computer lines as McGuire gears up for the recovery effort, far left. And then the war: A KC-10 prepares to head out.

American Airlines Flight 77 slammed into the Pentagon at 9:38 a.m. on Sept. 11. This area of the building had recent renovations and many personnel had not yet moved back into the section hit. Anti-terrorist measures—blast-proof windows, steel reinforcement, Kevlar shielding—helped contain the damage.



USMC photos by Cpl. Jason Ingersoll

US Navy photo by Mark D. Farrah



Triage on the helipad: Instead of evacuating the area, many of the uninjured Pentagon employees turned around and helped with the rescue. Preparation and quick thinking on the part of many kept casualty numbers from being far graver. Aside from those on the airplane, 125 were killed by the Pentagon attack.

It took days to extinguish the fire at the Pentagon. Crash, fire, and water damage claimed about one-third of the entire structure. Still, the rest of the building never stopped functioning.



US Navy photo by Robert Houlihan



USAF photo by MSgt. Don Taggart



The terrorist assaults prompted the invocation of Article 5 of the NATO treaty: the provision for mutual defense. NATO AWACS aircraft were dispatched to the US to control CAP fighters such as the F-16 at top, freeing USAF AWACS to go abroad and support Operation Enduring Freedom. The UK offered the most overt help: Tomahawk missiles, aircraft, and use of Diego Garcia for staging, right. Above, Taliban SAM sites knocked out as shown in reconnaissance photo.

The faces of USAF crews have taken on a new determination. As US and international leaders have said: The war against terrorists and any nation that supports them will be fought on many fronts and will not be easy or quick.



USAF photo by S/A. Rebecca M. Luquin

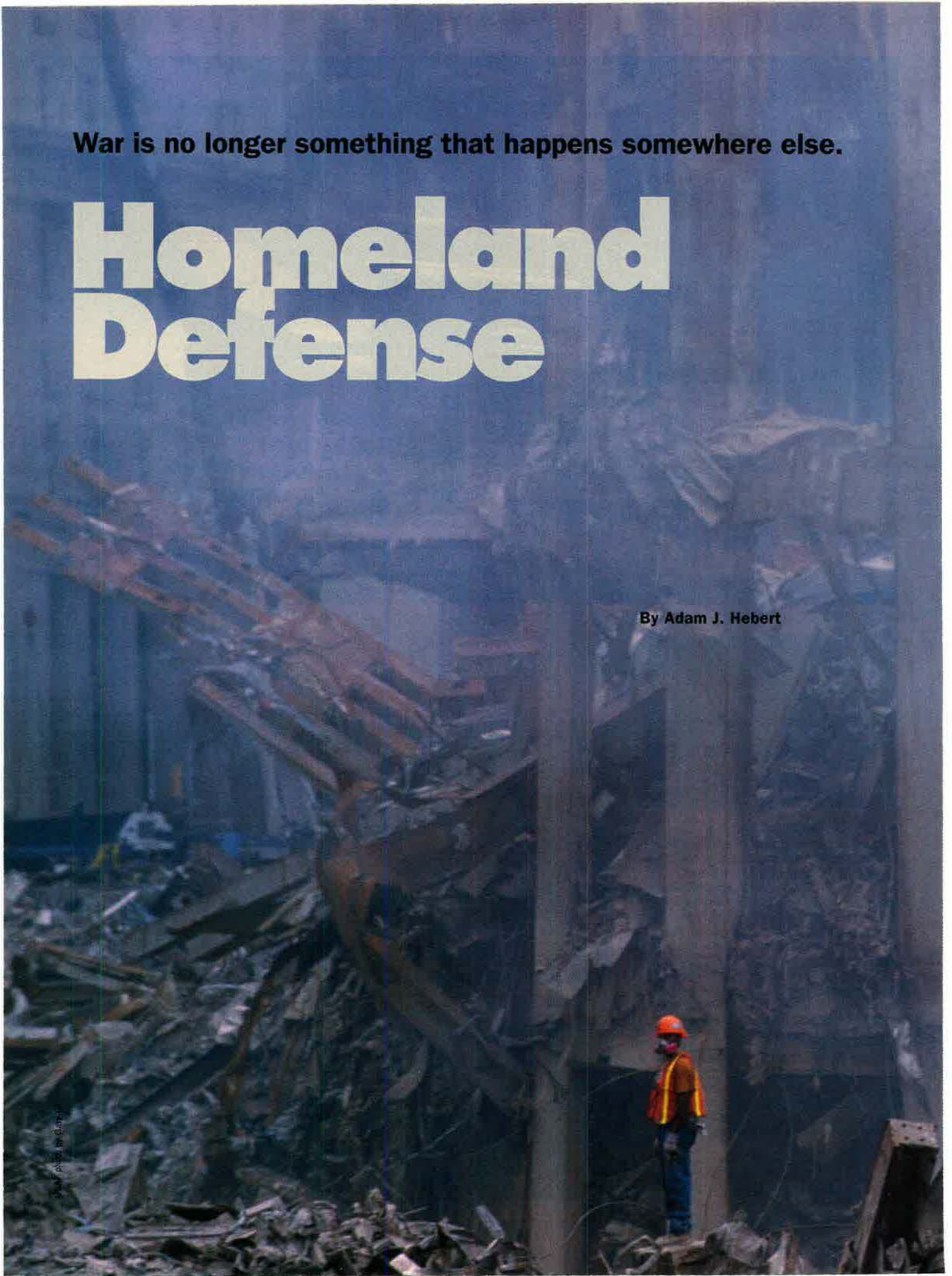


"Global Reach" has gained sharp definition, as USAF goes to war from the skies over Manhattan to the mountains of Asia, literally on opposite sides of the world.

War is no longer something that happens somewhere else.

Homeland Defense

By Adam J. Hebert





ALL previous American wars of the modern era—two World Wars, plus conflicts in Korea, Vietnam, and the Persian Gulf—had at least one important feature in common: They took place somewhere else.

Each of these conflicts was fought “over there,” far from American soil. The Japanese attack on Pearl Harbor brought war to US territory, true, but thousands of miles of Pacific Ocean stood between the battle and the mainland. Even the Cold War with the Soviet Union focused largely on Europe.

Protected for nearly two centuries by broad oceans and docile neighbors, the United States simply has not had to face a significant military threat “over here.”

All of that changed utterly on Sept. 11. In the aftermath of the devastating September terrorist attacks on

the World Trade Center towers in New York and the Pentagon in Washington, D.C., the national homeland is now squarely on the front lines.

The attacks, which killed thousands of American civilians, not only brought a war to US soil but instantly vaulted homeland security issues from a series of warnings in studies to a top national priority.

Declaring a war on terrorism, top leaders across the government said that those who support terror will be hunted and killed or punished, and radical changes in the way the United States defends its territory, citizens, and assets are being investigated.

There is much at stake. As President Bush noted in the aftermath of the attacks that left thousands dead, “This is a fight for freedom. This is a fight to say to the freedom-loving people of the world we will not allow ourselves to be terrorized by

somebody who thinks they can hit and hide in some cave somewhere. It’s going to require a new thought process. And I’m proud to report our military ... understands it’s a new type of war, it’s going to take a long time to win this war.”

Despite doom and gloom in many quarters, that was not the attitude of Air Force Maj. Gen. John L. Barry, director of strategic planning at USAF headquarters in the Pentagon, in an interview conducted before Sept. 11. Barry said the nation already has significant homeland security capabilities in place—though they exist at this time somewhat by default through capabilities provided for their primary missions.

Warnings

A series of high-profile studies have concluded that the American homeland had become increasingly

vulnerable to threats from crude nuclear weapons, cruise missiles, cyber-war, biological agents, and other "asymmetric" types of attack. As September's outrages demonstrated, it did not take an actual invasion of the United States to kill thousands and rock the national business, political, and military establishments.

According to members of the Defense Science Board in a report "Protecting the Homeland" (which was released before the attacks), the nation faces not only new vulnerability as a result of advances in the means of attack but also difficulty in even responding to the threat. The Pentagon has to overcome bureaucratic lethargy, find the money for new investment, and rethink the whole concept of open borders, it said.

The Defense Department is expected to play a key role in future homeland security missions, these experts said, because the department (and the Air Force in particular) already has many of the resources and capabilities needed to prevent or respond to an attack on US society.

Still, much work needs to be done to protect the US, and evolving the Defense Department to better meet the threat will be an expensive and time-consuming process—a point top officials freely admit.

The Threat

US military dominance in areas such as fighter aircraft, tanks, and

submarines means adversaries are highly unlikely to challenge the nation head-on. This makes America a target for asymmetric attack, as were the September attacks on the twin towers and the Pentagon, presumably engineered by exiled Saudi extremist Osama bin Laden.

By taking advantage of failures in aviation security, hijacking US airlines from domestic airports, and turning them into guided missiles to strike targets elsewhere in the United States, terrorists were able to bypass existing security and defense measures.

Even NORAD at the time was outward-looking, focused on tracking aircraft entering US airspace. NORAD did not respond to the developing terrorist incident until notified of the hijackings by the Federal Aviation Administration.

Complicating the matter, there is no shortage of other options adversaries may use to bypass US strengths to strike the homeland directly. "Biological, chemical, and information technologies are very inexpensive and widely available," said the DSB's report. "The trend is toward lower cost, higher performance, and even wider availability."

The report presented a lengthy outline of the homeland security challenge, describing parts of the threat as "grim" for the United States. Outlining the "gravity of the problem," the DSB determined the threat is real and growing.

The report concluded that "unconventional" nuclear weapon attacks, those not coming via peer ballistic missiles, present the largest single asymmetric risk to the United States—but are also the most preventable.

Still, according to the DSB task force, "the ability to protect against an [unconventional nuclear] attack is sorely lacking. This point is increasingly disconcerting given the magnitude and timescale of devastation associated with a successful attack."

Most homeland defense advocates find missile defenses to be a critical element, needed to defend against the threat from expanding and proliferating cruise and ballistic missile technology. When these missiles can be nuclear-armed, the threat to the United States is magnified.

At the time of the September Massacre, Congress and the Administration were bracing for a showdown over Bush's plans for a robust and expensive national missile defense system. Some critics such as Sen. Carl Levin (D-Mich.), chairman of the Senate Armed Services Committee, immediately called for the debate to be set aside while a plan is formulated to respond to the attacks. But Levin also noted that the attacks confirmed his belief that the nation should be focusing more resources on the types of attacks the US is more likely to see. One requirement is for more human intelligence and better processing capability for the information that is collected, he said in September.

Although the threat of nuclear ballistic missile attack from a so-called rogue nation such as North Korea received the most attention in homeland security circles prior to this fall, other, less publicized nuclear threats remain important, the DSB determined.

The report stated the greatest nuclear threat comes from state actors, not roaming terror organizations, and the threat continues to grow because "more than 1,500 tons of weapon-grade materials in Russia [are] under loose control," while smaller nuclear weapons could be carried and concealed in a backpack or truck.

Transportability creates a major problem when viewed in conjunction with our nation's open borders. Keeping backpack-sized nuclear

USAF photo by Capt. Jim Fabio



Workers survey the destruction at the World Trade Center in New York City. As Air National Guard aircraft patrolled the sky, an ANG pararescue team helped pull a survivor from the ruins the day after the attack.

weapons or chemical and biological agents out of the United States will always require good intelligence, because random checks are unlikely to do the job.

Retired Air Force Gen. Charles G. Boyd, executive director of the US Commission on National Security/21st Century, said that US borders are the most porous in the world and will probably remain that way.

"You can stand on the Ambassador Bridge [between the US and Windsor, Canada] and observe eight lanes of traffic coming into Detroit. There's no way you can examine more than a half of one percent of the traffic coming in," he said, adding "more than 1.3 million people cross our borders a day." Little can be done about that aspect of the homeland threat, Boyd noted.

There is talk in the aftermath of the recent attacks to better control the constant influx of people into the United States, possibly through controversial measures such as the profiling of potential terrorists.

Porous borders also contribute to the emergence of threats from chemical or biological weapons. If spread effectively, they could, in many cases, be as devastating as a successful nuclear attack upon the United States. As horrific as the Sept. 11 attacks were, experts have cautioned that the devastation could have been exponentially worse if the terrorists had used chemical or biological weapons in conjunction with the hijacked airliners.

In 1995, a Japanese cult released sarin nerve gas into Tokyo's crowded subway system. The crime turned out to be relatively unsuccessful. However, it demonstrated the challenge posed by chemical weapons. As Charles Cragin, who was then acting Pentagon reserve affairs chief, noted in 1998, "The Tokyo first-responders didn't have a clue for the first three hours on what they were dealing with, so people exposed to sarin gas wandered into hospitals, potentially contaminating them."

Considered even more deadly is the threat from biological weapons such as anthrax. Defense Department preparations for the biological warfare threat are not sufficiently advanced, the DSB found. Russia has created enough anthrax to "kill the world's population four times over," and the US health care system's abil-



Photo by Paul Kennedy

Overseas US forces, such as these in South Korea, conduct regular drills in donning biochemical warfare gear, but a Defense Science Board report considers the US ability to handle a biological warfare attack ineffective.

ity to deal with mass casualties is suspect.

"This nation does not have an effective, early capability to assess the BW [bioweapon] threat, and as a consequence, cannot prevent such a crisis," the report stated. "The task force paints a grim picture of the effectiveness of biological warfare. For example, an attack on a city with 100 kilograms [220 pounds] of bio-agent would kill one to three million people." Further, it is much more difficult for the United States to monitor bioweapon development than it is to track nuclear weapons programs.

Recently thrust into the spotlight is the cyber-threat, typified by the sudden emergence of a series of computer worms and viruses. According to Army Maj. Gen. J. David Bryan, commander of DOD's Joint Task Force for Computer Network Operations under US Space Command, there has been "significant growth" in the tempo, complexity, and destructiveness of computer threats over the past two years.

Commonly known viruses and worms such as Melissa, I Love You, Anna Kournikova, and Code Red (as well as many less well-known ones) have all affected the Defense Department to varying degrees. These broad threats and other outright attacks directed at DOD represent an ever-growing challenge, Bryan said.

Meanwhile, at least 20 nations are "developing tools to attack computer-

based infrastructure," while at their disposal is an Internet that "actually provides a superb command-and-control system, which was part of its original intent," the Defense Science Board noted.

In the immediate aftermath of the twin towers and Pentagon attacks, it was widely suggested that the terrorists were able to prevent their planning from being detected by the US Intelligence Community by communicating via Internet rather than telephone.

Lawmakers are already calling for revisions in the rules counterterrorism units must follow when tracking threats. For example, one proposal would give police agencies permission to connect eavesdropping to a person instead of an individual telephone number—in recognition of the fact that mobile phone proliferation allows a single terrorist to use many different phones.

Phone and Internet service can also be a liability for DOD in other ways. Heavy reliance upon the commercial world for telecommunications and Internet access also poses a challenge to the Defense Department, the Defense Science Board found, as the department "leases the vast majority of those services from private industry, which for economic reasons tend to use the most cost-effective option rather than the most secure."

With all these threats still emerging, defense experts assert that the nation can no longer effectively ad-



A New Jersey ANG weapons load crew raises an AIM-120A missile to transport it to an F-16C going out on stateside Combat Air Patrol. Since Sept. 11, the Guard has maintained aircraft aloft over various cities and on "strip alert."

dress national security by concentrating on forward perimeter defenses in Europe, the Middle East, and Asia—the approach taken throughout the Cold War. The September attacks show that perimeter defenses can be bypassed, bringing the conflict directly to America.

Not Helpless

Barry, USAF's top strategic planner, said these high-profile reviews detailing homeland security shortcomings do serve a purpose. He noted that the studies "identify the areas where we are not strong," a critical first step in correcting shortcomings. Barry also noted that, although the list of homeland security shortcomings is likely to be immense at first, identification will help the Air Force prioritize its investments.

In the meantime, homeland security capabilities already in place mean the Air Force is not starting from a "clean sheet of paper" when facing the problem.

The Air Force's ability to respond to homeland threats encompasses well-developed capabilities—although some areas of the homeland defense mission certainly need improvement, Barry said.

"I don't want to paint a rosy picture here that we've got this thing licked, because there is a lot of work to do," said Barry. "There are concepts, organization, there are technological elements that have to be resolved—and we have to get better

at it. So, we've got a long way to go."

The Air Force also needs to "take credit for what is already out there," said Barry. "NORAD, with US Space Command, certainly has a role" in defending the homeland against missile and electronic attacks, for starters. NORAD is able to provide early warning notification that missiles or hostile aircraft are approaching US airspace.

Now, it looks like NORAD will have a new dimension to its operations—surveillance of internal airspace. In the September attacks, terrorists were able to sidestep NORAD observation by commandeering airplanes already operating within US airspace. According to command officials, NORAD did not begin tracking and responding to the hijacked airliners until it was notified of the developing crisis by the FAA.

Barry also called attention to the role of existing air and space-borne Air Force intelligence, surveillance, and reconnaissance capabilities in homeland security, assets that are expected to play critical roles in responding to the attacks militarily.

These observational capabilities "can be brought to the table" to deter potential threats to the homeland before they ever occur—or to help respond to attacks after the fact, he said. Systems such as the E-8 Joint STARS ground surveillance and E-3 AWACS airborne warning and control aircraft "are not exclusive capa-

bilities," he said. "Whether we are working the front end of the problem before we get hit, or consequence management after we get hit, there are some common elements on both ends of that spectrum."

Although the aftermath of a homeland attack is often perceived as a civil matter to be dealt with by the FBI and Federal Emergency Management Agency, Barry noted the Air Force also has much to offer when recovering from an attack.

"We can do retaliation," he observed. "We clearly would focus on that capability where we would go after the culprits ... to destroy their capability."

DOD's National Guard and Reserve components are expected to have a significant role in dealing with homeland attacks. Current reserve affairs chief Craig Duehring said in August that the department is continuing to expand the number of civil support teams designed to respond to attacks with weapons of mass destruction. Ten of 32 planned emergency response teams, designed to respond to attacks anywhere in the United States within four hours, are in place now. Each is staffed with 22 Air and Army National Guard responders.

Meanwhile, the Air National Guard stepped into action as the September attacks unfolded, scrambling fighters based at Otis ANGB, Mass., and Langley AFB, Va., to defend New York and Washington.

Days after the attacks, Vice President Dick Cheney revealed in an interview with Tim Russert of NBC's "Meet the Press" that Bush had authorized the pilots of the Air Guard aircraft to shoot down any civilian airliners that appeared to be threatening a city. They have continued to perform their Combat Air Patrol missions in the days and weeks since the September attacks.

"It doesn't do any good to put up a Combat Air Patrol if you don't give them instructions to act," Cheney said. "If the plane would not divert, if they wouldn't pay any attention to instructions to move away from the city, as a last resort our pilots were authorized to take them out."

Shortly after the attacks, Air Force F-15 and F-16 fighters with supporting tankers and AWACS aircraft were flying CAP over about 30 American

cities. Defense officials have declined to be specific about how many fighters will continue to remain airborne and over what locations, but they said aircraft are on "strip alert," ready to fly within 10 to 15 minutes, at 26 bases.

Who's in Charge?

Cheney, in his role as vice president, had been named as a possible homeland security czar, a position that could be established in response to the mismatch of civil and military agencies expected to pitch in to prevent and respond to homeland threats.

Before the attacks, the US Commission on National Security/21st Century (known informally as the Hart-Rudman Commission) recommended establishment of a Cabinet-level homeland security agency and czar. Under the proposal, FEMA and related organizations, including the Customs Service and Coast Guard, would be combined into a new National Homeland Security Agency.

The Hart-Rudman Commission also suggested that a new assistant secretary of defense for homeland security be created to oversee the military side of the equation. Currently US Space Command at Peterson AFB, Colo., and US Joint Forces Command at Norfolk, Va., are just two of the commands playing key roles in the homeland security mission.

The DSB report also suggested creation of a high-level office to assume

responsibility for the homeland defense mission, without suggesting who should take the lead. The DSB took notice of a "mismatch between those formally in charge and those that actually have capability."

Barry noted that a clear chain of command up to a unified leader does not exist for military homeland security, although Air Force Gen. Ralph E. Eberhart—Commander in Chief of NORAD and US Space Command—comes close.

Asked if Eberhart, as CINCSPACE, is therefore a logical choice to assume a mission of homeland security CINC, Barry said such decisions must come from the President.

President Bush did announce Sept. 20 in his address to the nation that he was creating "a Cabinet-level position reporting directly to me, the Office of Homeland Security." Pennsylvania Governor Tom Ridge will lead the office. His role will be to coordinate the efforts of all the agencies involved, including DOD.

Defense Department activity definitely is on the rise. Even before the attacks, however, Barry felt that much work still had to be done. "We do clearly have to do better on this organization, as several commands all have a piece of the puzzle," he said.

Uncomfortable Challenge

American traditions of freedom of speech and movement, restrictions against unreasonable search-and-seizure, and open borders all make

homeland security especially challenging. As analysts have noted, the relationship between the nation's law enforcement and military communities is an uneasy one, but the consensus is that more cooperation will be needed.

"Homeland security encompasses all aspects of the government," said Barry. "These kinds of attacks affect not just the military; they can affect the whole country."

Other changes suggested by the review groups may not be popular with the Pentagon, further complicating the establishment of new homeland security capabilities. Boyd, who retired in 1995 as deputy commander of US European Command, warned that implementing the recommendations advanced by the Hart-Rudman Commission will be a long-term challenge.

The Pentagon bureaucracy will challenge homeland defense initiatives, he said. "How do you stop the services, for example, from doing all the things they know how to do—and that they like to do?" Boyd asked. "They've got to do some things that they're not so interested in," such as deal with "the asymmetrical threats that have us worried."

The DSB also forecasted a difficult institutional road to homeland security. In a telling passage from the homeland report's executive summary, the authors wrote:

"It has been observed, 'Here is the Defense Science Board *again* making recommendations to spend money, and there is just no money.' The DSB believes that this situation must be regarded as something quite different. This is not a case of 'yet another aircraft to go along with the many aircraft we now have.' These threats are different, and the DSB sees a more fundamental need for the DOD and the Intelligence Community to restructure their investment balance."

Perhaps one small bright spot emerging from this September's attacks is that the homeland security mission and requirements can no longer be given simple lip service.

Effective homeland security requires layered, nontraditional protection—and the DSB report said homeland defense funding should be increased. For example, DOD has not prioritized information defenses properly, the DSB task force con-



Utah ANG members stand watch at Salt Lake City Airport on Sept. 30. The Sept. 11 hijackers took advantage of lax aviation security and the US military's focus on aircraft coming from outside US territory.

USAF photo by MSgt. Mark Savage



An American flag rises above the ruins at the World Trade Center. The DSB report said that Americans typically viewed terrorism as annoying rather than a true threat to the homeland. Not now.

tended. "Too much money and time is being spent on the lower-level threats to the nation's networks (e.g., hackers) and not enough on figuring out how to protect information systems from state and terrorist warriors who understand how to exploit compromised data," the report read.

After the attacks, analysts suggested that the US had focused too much on the high and low extremes of homeland threats—at the top, ballistic missile attacks and, at the bottom, car bombs. Consequently, the government missed the midlevel threat that became a horrifying reality.

Intelligence, Considered Broadly

The DSB suggested that DOD and the Intelligence Community rethink their investment balance "which is always hard in a large bureaucracy." The board noted that in the Fiscal 2001 budget, roughly \$264 billion was devoted to "detering regional conflicts to protect allies, friends, and American interests," while only \$3 billion was allocated to protecting the "homeland against biological, chemical, information, and unconventional nuclear attacks."

This is not likely to be an issue in the future. Just the very first bills to recover from the Sept. 11 attacks and to begin planning for a way forward came to \$40 billion. Much more cost and planning are expected.

Reprioritization is needed, experts say, because homeland defense is not a mission that should simply be

dropped on top of existing DOD responsibilities.

Traditionally, homeland threats "are equated in peoples' minds with 'terrorism,' and 'terrorism' is viewed more as an irritating, annoying mosquito bite than as a true threat to the homeland," the DSB noted. "This is not the case"—not that anyone in the US will ever overlook terrorism again.

The problem is larger, and the solution must be more comprehensive, the DSB said. For example, good intelligence can not only deter potential adversaries by creating better attribution but can also be a key factor in heading off and responding to almost every type of possible homeland attack.

Critics such as Levin said there was apparently a complete intelligence failure before the attacks. Analysts had warned for years about the threat of a "space Pearl Harbor" or a "cyber-Pearl Harbor" but seemingly ignored was the likelihood of a Pearl Harbor-style terror attack using domestic airliners.

Barry agreed that more is needed. "It's a bigger issue than intelligence. ... We are all looking at how to improve [Intelligence, Surveillance, and Reconnaissance] and what forks in the road we need to work to get the

most ISR and the optimum ISR complex," he said. "That ISR challenge is going to be a big part" in the future, he said, and the service's leadership is cognizant of the need.

Air Force Secretary James Roche "has said this is probably the biggest intellectual challenge we have for the future," Barry observed. "This is a major point for this new Administration," he said, and the service is attempting to determine "what is the role that United States Air Force aerospace power can provide for homeland security?"

The ultimate goal is to "go to a global perspective where we can find, fix, assess, track, target, and engage any target. That brings home how valuable ISR is," he said.

An Attention Getter

The attention heaped upon the homeland security mission began to catch DOD's attention even before Sept. 11. When Deputy Defense Secretary Paul Wolfowitz announced five principles that would guide the Quadrennial Defense Review and military transformation earlier this summer, four of the priorities had a clear homeland security perspective when the resources needed to sustain operations have to be protected.

"Protecting our bases of operation and being able to defeat nuclear/biological/chemical weapons and ballistic missile attack" is a top planning priority, Wolfowitz said.

The other key points in the planning guidance are to "project and sustain US forces in distant anti-access or area-denial environments. ... Be able to deny enemy sanctuary through various means, particularly long-range precision strike of different kinds. ... Be able to conduct space operations. And ... to ensure joint and combined interoperability integration of long-range strike and deep maneuver forces."

With a much smaller "garrison force" than in the past—requiring operations based and controlled in the United States—homeland security has become more than a simple protection issue. It is now a national priority. ■

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By Robert S. Dudley, Executive Editor

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"To kill Americans and their allies, both civil and military, is an individual duty of every Muslim who is able, in any country where this is possible, until the Aqsa Mosque [in Jerusalem] and the Haram Mosque [in Mecca] are freed from their grip and until their armies, shattered and broken-winged, depart from all the lands of Islam, incapable of threatening any Muslim. ... By God's leave, we call on every Muslim who believes in God and hopes for reward to obey God's command to kill the Americans and plunder their possessions wherever he finds them and whenever he can."—**Osama bin Laden, declaration in *Al-Quds al-Arabi*, *Foreign Affairs*, 2-23-98.**

"Today, our fellow citizens, our way of life, our very freedom came under attack in a series of deliberate and deadly terrorist acts. The victims were in airplanes or in their offices: secretaries, businessmen and -women, military and federal workers, moms and dads, friends and neighbors. Thousands of lives were suddenly ended by evil, despicable acts of terror."—**President Bush, Oval Office remarks, 9-11-01.**

"Our nation saw evil, the very worst of human nature. And we responded with the best of America, with the daring of our rescue workers, with the caring for strangers and neighbors who came to give blood and help in any way they could."—**Bush, Oval Office remarks, 9-11-01.**

"I've directed the full resources of our intelligence and law enforcement communities to find those responsible and bring them to justice. We will make no distinction between the terrorists who committed these acts and those who harbor them."—**Bush, Oval Office remarks, 9-11-01.**

"At this critical moment, the United States can rely on its 18 allies in North America and Europe for assistance and support. NATO solidarity remains the essence of our alliance. Our message to the people of the United States is that we are with you. Our message to those who perpetrated these unspeakable crimes is equally clear: You will not get away with it."—**North Atlantic Council statement, 9-11-01.**

News Media Abbreviations Used

<i>Christian Science Monitor</i>	CSM
<i>Inside the Air Force</i>	ITAF
<i>International Herald Tribune</i>	IHT
<i>Los Angeles Times</i>	LAT
<i>New York Times</i>	NYT
<i>Wall Street Journal</i>	WSJ
<i>Washington Post</i>	WP
<i>Washington Times</i>	WT
<i>USA Today</i>	USAT

"This is indeed the most tragic hour in America's history, and yet I think it can be its finest hour."—**Sen. John Warner, at a DOD briefing, 9-11-01.**

"As for those that carried out these attacks, ... their barbarism will stand as their shame for all eternity."—**British Prime Minister Tony Blair, 9-11-01.**

"Anyone who can blow up the Pentagon has my vote."—**Richard Berthold, a University of New Mexico professor, remarks to his class on 9-11-01.** He later apologized, saying, "I was a jerk, but the First Amendment protects my right to be a jerk."

"We're going to find out who did this and we're going after the bastards."—**Sen. Orrin Hatch, statement on CNN, WP, 9-12-01.**

"Anyone who says this is not an intelligence failure is blowing smoke. This is an intelligence failure and a security failure. The security guys will blame it on the intelligence guys, and the intelligence guys will tell us the great successes they had in the past."—**Retired US Army Lt. Gen. William Odom, former director of the National Security Agency, *Time*, 9-12-01.**

"It was not the plane that brought it down. It could have withstood that. What it could not withstand was 24,000 gallons of aviation fuel that melted the steel of the building. ... You don't design for a fire that includes 24,000 gallons of aviation fuel."—**Hyman Brown, 1967 project engineer for builder of the twin towers, *Rocky Mountain News*, 9-12-01.**

"This is going to be a dividing point in history. If they still teach history 100 years from now, children will still be reading about this day. We haven't seen such destruction on our own soil since the Civil War."—**Historian David McCullough, WP, 9-12-01.**

"We have tried our best in the past and we are willing in the future to assure the United States in any kind of way we can that Osama is not involved in these kinds of

activities.”—**Taliban Foreign Minister Wakil Ahmad Muttawakil, WP, 9-12-01.**

“He is suspected of being involved in a number of attacks on the US, going all the way back to Mogadishu [in 1993]. ... At a certain point, somebody’s public statements deserve to be taken at face value. Bin Laden means what he says. He’s declared war with the United States.”—**L. Paul Bremer III, chairman of the National Commission on Terrorism, WP, 9-12-01.**

“What happened today underlines the relevance of the offer of Russia to unite the powers of the international community in the fight against terrorism, the plague of the 21st century.”—**Russian President Vladimir Putin, WT, 9-12-01.**

“We can find out who these people are, and then we need to be relentless. You can’t mount a systematic attack like this unless you have a place to plan and train. That means a geographic space. So states that harbor terrorists, look out.”—**Former Secretary of State George Shultz, WP, 9-12-01.**

“I believe this will now be the catalyst that causes a significant change in our policy toward terrorism, and that change should be to hold responsible governments that support terrorism. It’s been our policy to hold individual terrorists accountable rather than the governments who support them, and that policy has failed.”—**Defense Department advisor Richard Perle, WP, 9-12-01.**

“It is clear now, as it was on Dec. 7, 1941, that the United States is at war. The question is, with whom?”—**Former CIA Director James Woolsey, WP, 9-12-01.**

“In one horrible moment, the need for homeland defense has gone from being a theoretical risk to a grim reality. Not one of us in government or counterterrorist experts outside government believed that anyone was capable of launching an attack with this degree of lethality and coordination.”—**Former Defense Department official Anthony Cordesman, USAT, 9-12-01.**

“This is a war between good and evil and between humanity and the bloodthirsty, ... a turning point in the war against international terror.”—**Israeli Prime Minister Ariel Sharon, WP, 9-12-01.**

“This is a turning point in the international war on terrorism. This is a war between good and evil. The fight of the free world against the forces of darkness.”—**Sharon, WT, 9-12-01.**

“The people here are gloating over the American grief. ... Palestinians have been crying and suffering, and now it is time for Americans to cry and suffer.”—**Emad Salameh, taxi driver in Gaza, WP, 9-12-01.**

“I send my condolences, the condolences of the Palestinian people to American President Bush and his government and to the American people for this terrible act. We completely condemn this serious operation. ... We were completely shocked.”—**Palestinian Authority President Yasser Arafat, WP, 9-12-01.**

“Barbarous terrorist acts aimed against wholly innocent people cause us anger and indignation. ... There is no doubt that such an inhuman act must not go unpunished.

The entire international community should unite in the struggle against terrorism.”—**Putin telegram to Bush, Moscow Times, 9-12-01.**

“I’ve been chilled by a lot of things, but this is something I just can’t begin to comprehend. They put this together very, very neatly.”—**Lewis Schiliro, former head of FBI’s NY field office, LAT, 9-12-01.**

“Maximum fuel. They turned those planes into bombs and wanted the biggest bang they could get. They certainly knew what they were doing.”—**Unnamed “federal official,” WT, 9-12-01.**

“America is in the most threatened position it has ever been in in its history.”—**Sen. James Inhofe, press statement, 9-12-01.**

“This is a formidable enemy. To dismiss it as a bunch of cowards perpetrating senseless acts of violence is complacent nonsense. People willing to kill thousands of innocents while they kill themselves are not cowards. They are deadly, vicious warriors and need to be treated as such. Nor are their acts of violence senseless. They have a very specific aim: to avenge alleged historical wrongs and to bring the great American Satan to its knees. Nor is the enemy faceless or mysterious. We do not know for sure who gave the final order, but we know what movement it comes from. The enemy has identified itself in public and openly. Our delicate sensibilities have prevented us from pronouncing its name. Its name is radical Islam.”—**Washington Post columnist Charles Krauthammer, WP, 9-12-01.**

“The deliberate and deadly attacks which were carried out yesterday against our country were more than acts of terror; they were acts of war.”—**Bush, Cabinet Room statement, 9-12-01.**

“The American people need to know that we’re facing a different enemy than we have ever faced. This enemy hides in shadows and has no regard for human life. This is an enemy who preys on innocent and unsuspecting people, then runs for cover. But it won’t be able to run for cover forever. This is an enemy that tries to hide, but it won’t be able to hide forever. This is an enemy that thinks its harbors are safe, but they won’t be safe forever.”—**Bush, Cabinet Room statement, 9-12-01.**

“This will be a monumental struggle of good vs. evil, but good will prevail.”—**Bush, Cabinet Room statement, 9-12-01.**

“This battle will take time and resolve. ... Those in authority should take appropriate precautions to protect our citizens. But we will not allow this enemy to win the war by changing our way of life or restricting our freedoms.”—**Bush, Cabinet Room statement, 9-12-01.**

“I remind my colleagues that in war, the first shots are never the last, and the first strike is never the worst. What happened yesterday was terrible—horrendous—but we must prepare ourselves and steel ourselves for the possibility of worse until we achieve our goal.”—**Sen. John Kerry, Senate floor statement, 9-12-01.**

“Yesterday was the darkest day in American history. Pearl Harbor pales in comparison.”—**Rep. Ike Skelton, press statement, 9-12-01.**

"We will find out who is responsible for this and they will pay for it."—**Secretary of State Colin Powell, State Department briefing, 9-12-01.**

"[The US is] going after and dealing with the sources of support that they have, whether that source of support might come from a host country or other organizations that provide them. We have to make sure that we go after terrorism and get it by its branch and root."—**Powell, State Department briefing, 9-12-01.**

"We're building a strong coalition to go after these perpetrators, but more broadly to go after terrorism wherever we find it in the world. It's a scourge not only against the United States but against civilization, and it must be brought to an end."—**Powell, State Department briefing, 9-12-01.**

"We will hold accountable those countries that provide support, that give host nation—if you can call it that—support and facilities to these kinds of terrorist groups. ... We will be directing our efforts not only against terrorists but against those who do harbor and do provide haven and do provide support for terrorism."—**Powell, State Department briefing, 9-12-01.**

"The important thing for us now is to do our job, to run to ground a vicious foe, one without heart or pity. A foe who has killed Americans but who hopes in vain to kill the ideals and values that define all of us as Americans."—**CIA Director George Tenet, statement to CIA workforce, 9-12-01.**

"The shield of fanaticism—wielded by those ready to forfeit their lives to achieve their twisted dreams—is not easily pierced. But it has been pierced before and it will be pierced again."—**Tenet, statement to CIA workforce, 9-12-01.**

"I guess I'm kind of old-fashioned. I'm inclined to think that if you're going to cock it, you throw it, and you don't talk about it a lot."—**Secretary of Defense Donald Rumsfeld, DOD briefing, 9-12-01.**

"Anyone who thinks it's easy is wrong. I think that it will require a sustained and broadly based effort. And I don't think that people ought to judge outcomes until a sufficient time is passed. ... It's not restricted to a single entity—state or nonstate entity. It is an attack on a [terrorist] way of life."—**Rumsfeld, DOD briefing, 9-12-01.**

"It is my duty as head of this department to tell you that more, much more will be asked of you in the weeks and months ahead. This is especially true of those who are in the field. We face powerful and terrible enemies, enemies we intend to vanquish, so that moments of horror like yesterday will be stopped."—**Rumsfeld, videotaped address to troops, 9-12-01.**

"Whether you declare it, or however you describe it, we are at war."—**Senate Minority Leader Trent Lott, WT, 9-13-01.**

"You are either with America in our time of need or you are not."—**Sen. Hillary Clinton, WT, 9-13-01.**

"They were good neighbors, as far as neighbors go. They were quiet. They kept the lawn mowed. They put

the garbage out when it was needed to be put out."—**Hank Habora, resident of Vero Beach, Fla., comments about the hijackers, LAT, 9-13-01.**

"If you just want to level Kabul, that's a fixed target. We can do that. It's not that hard to do. But it doesn't mean bin Laden himself, because he's not a fixed target, and we've never been very good at hitting mobile targets."—**Retired Gen. Merrill McPeak, former USAF Chief of Staff, WP, 9-13-01.**

"Americans ... will make the sacrifices and show the resolve necessary to prevail. I say to our enemies, we are coming. God may show you mercy. We will not."—**Sen. John McCain, NYT, 9-13-01.**

"We have reason to believe that bin Laden's people are connected with the events currently taking place in our ... Chechnya. We know his people are present there. Our American partners cannot but be concerned about this circumstance. So we have a common foe, the common foe being international terrorism."—**Putin, WP, 9-13-01.**

"I say bomb the hell out of them. If there's collateral damage, so be it. They certainly found our civilians to be expendable."—**Sen. Zell Miller, NYT, 9-13-01.**

"The political war will cease. The war we have now is the war against terrorism. And that's going to be the No. 1, 2, and 3 priority for the rest of the year."—**Sen. John Breaux, NYT, 9-13-01.**

"We need to demonstrate political and institutional solidarity with the President, ... but I'm not ready to concede abrogating the ABM Treaty in the interest of national unity."—**Sen. Joseph Biden, WP, 9-13-01.**

"This was not an intelligence success, clearly. We have had great successes in intelligence, but this was an intelligence failure."—**Sen. Richard Shelby, WT, 9-13-01.**

"[Clinton Administration] guidelines were issued that deter [CIA] recruitments of people with human rights violations in their backgrounds. But if you are trying to recruit inside Hezbollah or Osama bin Laden's organization, there is nobody in there but human rights violators."—**Woolsey, WT, 9-13-01.**

"The American cowboy is reaping the fruits of his crimes against humanity. It is a black day in the history of America, which is tasting the bitter defeat of its crimes and disregard for peoples' will to lead a free, decent life."—**Iraqi television broadcast, The Times of London, 9-13-01.**

"Everyone should put human considerations above political differences ... and offer aid to the victims of this gruesome act."—**Col. Muammar Qaddafi, the Libyan leader, The Times of London, 9-13-01.**

"Regardless of ... human feelings on what happened yesterday, America is reaping thorns sown by its rulers in the world. He who does not want to reap evil should not sow evil."—**Saddam Hussein, quoted by Iraqi News Agency, WP, 9-13-01.**

"I hope this is going to make us serious enough to go

beyond just looking for the specific perpetrators and take on the governments and other backers who provide suicide bombers, funding, technological capabilities, intelligence—all the different groups and functions enabling terrorist organizations to operate like multinationals.”—**Perle, IHT, 9-13-01.**

“It is my desire to lay [down] my life in the cause of God. ... The Americans want to kill me, but it will not solve their problem. Several other Osamas would rise if I am killed.”—**bin Laden, *The Times of London*, 9-13-01.**

“What we saw on Tuesday, as terrible as it is, could be minuscule if in fact God continues to lift the curtain and allow the enemies of America to give us probably what we deserve. ... The ACLU’s got to take a lot of blame for this, ... throwing God out of the public square, out of the schools. The abortionists have got to bear some burden for this, because God will not be mocked. And when we destroy 40 million little innocent babies, we make God mad. I really believe that the pagans and the abortionists and the feminists, and the gays and the lesbians, ... the ACLU, People for the American Way, all of them who have tried to secularize America—I point the finger in their face and say, ‘You helped this happen.’”—**Jerry Falwell, televised remarks, 9-13-01.**

“We will go after that [bin Laden] group, that network, and those who have harbored, supported, and aided that network, to rip the network up. And when we’re through with that network, we will continue with a global assault against terrorism in general.”—**Powell, State Department briefing, 9-13-01.**

“Now that war has been declared on us, we will lead the world to victory.”—**Bush, White House news conference, 9-13-01.**

“This nation is sad. But we’re also tough and resolute, and now is an opportunity to do generations a favor by coming together and whipping terrorism, hunting it down, finding it, and holding them accountable. ... This is now the focus of my Administration.”—**Bush, White House news conference, 9-13-01.**

“It’s not just simply a matter of capturing people and holding them accountable but removing the sanctuaries, removing the support systems, ending states who sponsor terrorism.”—**Deputy Secretary of Defense Paul Wolfowitz, DOD briefing, 9-13-01.**

“We are entering into a campaign against terrorism that has to be sustained and broad and effective. ... You don’t do it with just a single military strike, no matter how dramatic. You don’t do it with just military forces alone; you do it with the full resources of the US government. It will be a campaign, not a single action.”—**Wolfowitz, DOD briefing, 9-13-01.**

“We are in a different era. I think the President has made that clear. The Secretary of Defense has made that clear. Everything is going to change.”—**Wolfowitz, DOD briefing, 9-13-01.**

“Obviously, a significant piece of this is going to be to bring our armed forces to the highest level of preparedness, to be able to execute whatever it is the President may ask them to do. ... I think what this means is there are also going to be some huge requirements to build up our military for the next

year and maybe longer.”—**Wolfowitz, DOD briefing, 9-13-01.**

“We’re pretty good if the [airborne] threat’s coming from outside. We’re not so good if the threat’s coming from inside.”—**Air Force Gen. Richard Myers, at Senate Armed Services Committee confirmation hearing to be Chairman of the Joint Chiefs of Staff, 9-13-01.**

“I can hear you. The rest of the world hears you. And the people who knocked these buildings down will hear all of us soon.”—**Bush, remarks to rescue workers at “ground zero” in New York, 9-14-01.**

“All instruments of power to the Iraqi state should be destroyed: the Republican Guard, everything associated with Saddam Hussein, everything associated with their weapons of mass destruction program.”—**Woolsey, WP, 9-14-01.**

“We’re never going to stop it completely, but we can reduce the magnitude of the incidents if we make it much harder for them to operate. About the only thing we can do—apart from getting better intelligence, which is not easy to do—is to go after the governments who support [terrorists]. ... It will make a significant difference. ... Let’s hope [Bush] comes to the conclusion that about the only thing we can do ... is apply such pressure to countries that support these people. I think we can reduce the money available to them ... by 90 percent if we can stop governments from writing the checks. And if you take away the money, you take away the intelligence, the communications, the use of the diplomatic pouch to move things—you take all that away and it’s much, much harder to mount operations.”—**Perle, ITAF, 9-14-01.**

“It’s war. We didn’t organize a tribunal to decide [which individual] was responsible for Pearl Harbor. ... We held the country responsible. If there are countries that are supporting terrorism and working with these guys, then we’ve got to hold them responsible. We’ve got to cut [terrorists] off from their life-support system.”—**Perle, ITAF, 9-14-01.**

“It would be catastrophic to allow this to result in a clash of civilizations. [To avoid that] it is essential the US define the coalition in an inclusive way [with] all parts of the civilized world. It must be remembered that many, many victims of this kind of terrorism have been Muslim.”—**Former Deputy Secretary of State Strobe Talbott, CSM, 9-14-01.**

“We are not interested in reading them their Miranda rights. We are interested in taking them out, lock, stock, barrel, root, limb.”—**Rep. Bob Barr, NYT, 9-14-01.**

“I don’t think the Musharraf government is stupid enough to [oppose the US]. Once you’ve been branded a state that supports terrorism, the consequences are horrific.”—**Rifaat Hussain, university professor in Islamabad, Pakistan, NYT, 9-14-01.**

“Your excellency realizes the repercussions of ... speculations being made by some in the media in the United States and attempts to openly accuse Arabs and Muslims in general. ... Arabs and Muslims stand aloof from such acts that no sane and God-believing individual would commit.”—**Saudi Crown Prince Abdullah bin Abdul Aziz, in telephone call to Bush, WP, 9-14-01.**

"The terrorists think democracies are soft. And of course they are soft most of the time. But when they get aroused they are far more resolute and harsher than an authoritarian system."—**British military historian John Keegan, NYT, 9-14-01.**

"The soldiers of militant Islam and Pan-Arabism do not hate the West because of Israel; they hate Israel because of the West, ... Zionism as an expression and representation of Western civilization."—**Former Israeli Prime Minister Binyamin Netanyahu, WP, 9-14-01.**

"Terrorism is the cancer of our age. For the past decade, a lot of countries wanted to deny that or make excuses for why they could go on dealing with terrorists. But after what's happened in New York and Washington, now everyone knows. This is a cancer. It's a danger to us all. So every country must now decide whether it wants to be a smoking or nonsmoking country, a country that supports terrorism or one that doesn't."—**Israeli Foreign Minister Shimon Peres, NYT, 9-14-01.**

"Can anyone doubt that if the terrorists behind Tuesday's attacks had had access to a ballistic missile, they would have used it? Why settle for toppling the World Trade Center if you can destroy all of New York in an instant?"—**Editorial, WSJ, 9-14-01.**

"Many families have been devastated tonight. This is just not right. They did not deserve to die. If someone did this to get back at Bush, then they did so by killing thousands of people who DID NOT VOTE for him! Boston, New York, D.C., and the plane's destination of California—these were places that voted AGAINST Bush! Why kill them?"—**Filmmaker Michael Moore, WSJ.com, 9-14-01.**

"The only way to fully understand this is to recall the effects of another hate-filled ideology—Nazism—which also started as a local movement and which, in just a few years, became a world force. Nazism 60 years ago, like fundamentalist Islam today, was also initially directed only against Jews and other local minorities. It quickly became clear, however, that its passionate hatred was directed against our entire civilization. Then, as now, the democracies were late in appreciating the horrendous implications to our societies of a fanatic ideology bent on world domination and lacking any inhibition about destroying lives in the process."—**Netanyahu, WSJ.com, 9-14-01.**

"War has been waged against us by stealth and deceit and murder. This nation is peaceful but fierce when stirred to anger. This conflict was begun on the timing and terms of others. It will end in a way, and at an hour, of our choosing."—**Bush, remarks at National Cathedral, 9-14-01.**

"Our responsibility to history is already clear—to answer these attacks and rid the world of evil."—**Bush, National Cathedral, 9-14-01.**

"I think it was the heroism of the passengers on board that brought it [the fourth hijacked airliner, over Pennsylvania] down, but the Air Force was in a position to do so if we had had to."—**Wolfowitz, PBS "Newshour," 9-14-01.**

"One has to think about, if necessary, larger forces. One has to think about accepting casualties. One has to think

about sustained campaigns. One has to think about broad possibilities. And we're trying to present that full range of possibilities to the President."—**Wolfowitz, "Newshour," 9-14-01.**

"We know that they would, if they could, go further and use chemical or biological or even nuclear weapons. ... We have been warned by the events of Sept. 11. We should act on the warning."—**Blair, statement to House of Commons, 9-14-01.**

"I was raised a soldier. And you're trained: There is the enemy occupying a piece of ground. We can define it in time, space, and other dimensions, and you can assemble forces and go after it. This is different. The enemy is in many places. The enemy is not looking to be found. The enemy is hidden. The enemy is, very often, right here within our own country. And so you have to design a campaign plan that goes after that kind of enemy, and it isn't always blunt-force military, although that is certainly an option. It may well be that the diplomatic efforts, political efforts, legal, financial, other efforts, may be just as effective against that kind of an enemy as would military force be."—**Powell, State Department briefing, 9-14-01.**

"America is against Osama because he is a true Muslim and a defender of Islam, not like our Pakistani leaders who are so-called Muslims. The Americans bombed Hiroshima, and they can do it to Afghanistan now, but history will never forgive them."—**Pakistani citizen Mohammed Rafiq, WP, 9-15-01.**

"The American people need to go about their business on Monday but with a heightened sense of awareness that a group of barbarians have declared war on the American people."—**Bush, remarks at Camp David, 9-15-01.**

"The message is for everybody who wears the uniform: Get ready. ... We're at war. There has been an act of war declared upon America by terrorists, and we will respond accordingly."—**Bush, remarks at Camp David, 9-15-01.**

"This act will not stand. ... We will smoke them out of their holes, we'll get them running, and we'll bring them to justice."—**Bush, remarks at Camp David, 9-15-01.**

"It could be a very fruitful marriage between Saddam and bin Laden. Bin Laden gets the publicity he wants, while Saddam is the sleeping partner who gets revenge and causes disruption, while still selling his oil and keeping the support of Russia and China."—**Woolsey, The Times of London, 9-15-01.**

"This operation isn't going to be quick, or pretty, or certain. To do anything at all is to invite an element of ambiguity. There's going to be casualties and collateral damage. That's why we call it war."—**Cordesman, NYT, 9-15-01.**

"This is the wealthiest nation on Earth, and please don't tell me that you can't put enough money out there to make certain that men with hand knives and box cutters can't hijack four American planes within an hour. Now we know that every airplane that takes off in America is a bomb, fully loaded. So deal with it."—**Former Sen. Bob Kerrey, NYT, 9-15-01.**

"We in the kingdom of Saudi Arabia are fully prepared to cooperate with you in every way that may help identify and pursue the perpetrators of this criminal incident."—**Saudi Crown Prince Abdullah in telephone call to Bush, NYT, 9-15-01.**

"This is a unique chance to develop a real and close military cooperation with the United States and NATO. Now, it is finally clear to all that the West and Russia have a common enemy—Islamic fundamentalist terrorist organizations. If we are not complete idiots, we must not let this opportunity slip."—**Russian Maj. Gen. Alexander Vladimirov, Collegium of Military Experts, LAT, 9-15-01.**

"Those who make war against the United States have chosen their own destruction."—**Bush, radio address, 9-15-01.**

"Victory against terrorism will not take place in a single battle but in a series of decisive actions against terrorist organizations and those who harbor and support them. We are planning a broad and sustained campaign to secure our country and eradicate the evil of terrorism."—**Bush, radio address, 9-15-01.**

"We must not only go after the perpetrators but after the whole curse of terrorism on the face of the Earth."—**Pakistani Foreign Minister Abdul Sattar, WT, 9-16-01.**

"If any regional or neighboring country helps the United States attack us, it would spark extraordinary dangers. It would draw us into a reprisal war. ... We would attack such countries and occupy their territories."—**Abdul Salam Zaeef, Taliban ambassador to Pakistan, WT, 9-16-01.**

"The costs are going to be huge in both dollars and lives. [But] what is the alternative—to live in fear of the people who did this for the rest of our lives?"—**Retired Marine Lt. Gen. Paul Van Riper, WP, 9-16-01.**

"[If there is a true Western-led war on terrorism,] Russia will have to make a strategic decision, and it's going to be a painful one, no matter which way it goes. This is war. And in war, it's very hard to hold the middle ground."—**Pavel Felgenhauer, Russian military analyst, NYT, 9-16-01.**

"Just as your beautiful skyscrapers were destroyed and caused your grief, beautiful buildings and precious homes crumbled over their owners in Lebanon, Palestine, and Iraq because of American weapons used by the Zionists. If your rulers respect and cherish the blood of your people, why do you find it easy to shed the blood of others, the blood of Arabs and Muslims? Americans should feel the pain which they have inflicted on other peoples so that when they suffer, they will know the best way to treat it."—**Saddam Hussein, "letter" to the American people read on Iraqi TV, WP, 9-16-01.**

"They want change that is so radical as to defy any concept of negotiations. ... They are conducting a war, not seeking entrance into the status quo. These guys want to roll back 1,300 years of history. They believe that their violence is divinely justified and that great goals require dramatic means, and the dramatic means is mass bloodshed."—**Daniel Benjamin, director of the Office of Transnational Threats in the Clinton White House, WP, 9-16-01.**

"[They are] freed from ordinary constraints of morality. ... There is less inhibition to kill in quantity and a greater willingness to die in the process."—**Brian Jenkins, RAND expert on terrorism, WP, 9-16-01.**

"The assumption [among Western terrorism experts] was that the average suicide bomber was a psychologically damaged 19-year-old with a limited education. What is extraordinary about this episode is that these people were preparing for their mission for months, leading normal lives with wives, taking the garbage out, taking kids to McDonald's, taking flying lessons, living in comparatively pleasant places, all the while knowing that on some date they were going to kill themselves and thousands of people."—**Jenkins, WP, 9-16-01.**

"The money comes from a lot of countries, often under pretext of helping freedom fighters in Palestine and Kashmir, ... and some of it goes to bin Laden. He's sort of the Ford Foundation of terrorists."—**Stephen Phillip Cohen, a South Asia expert and former State Department official, WP, 9-16-01.**

"The terrorists will go elsewhere. They look for the places where you are vulnerable and attack you there, when they can catch you flat-footed. They are always looking for the places where you're not looking. They study you."—**James M. Lindsay, a former National Security Council director of global issues and multilateral affairs, WP, 9-16-01.**

"The United States has fought suicidal opponents before. Germans often fought with fanatical intensity in World War II, and Japan was intent on national self-immolation. Then as now, it seemed grotesquely contrary to our cultural ethic and frightening, because we suspected our opponents were willing to pay a higher price than we were. Five thousand Japanese kamikaze pilots sacrificed themselves, beginning in October 1944, sinking 34 US ships, damaging hundreds of others, and fraying American morale. Japan also trained 4,000 suicide divers intent on destroying Allied vessels with manned torpedoes or mines detonated next to ship hulls. New tactics—new thinking—by American commanders led to pre-emptive strikes on kamikaze bases, elaborate picket lines with submarines and surface ships, unprecedented barrages of anti-aircraft fire, new evasion techniques, aggressive fighter plane sweeps, and robust firefighting and damage control innovations. Ten months after kamikazes first appeared, Japan surrendered."—**Rick Atkinson, military author, WP, 9-16-01.**

"There may well be other operations that have been planned and are, in fact, in the works."—**Vice President Dick Cheney, NBC's "Meet the Press," 9-16-01.**

"If you're going to deal only with sort of officially approved, certified good guys, you're not going to find out what the bad guys are doing. ... It is a mean, nasty, dangerous, dirty business out there, and we have to operate in that arena."—**Cheney, "Meet the Press," 9-16-01.**

"What we have to do is take down those networks of terrorist organizations. ... I think this is going to be a struggle that the United States is going to be involved in for the foreseeable future."—**Cheney, "Meet the Press," 9-16-01.**

"[We've] got a broad range of capabilities, and they may well be given missions in connection with this overall

task and strategy. We also have to work, though, sort of the dark side, if you will. We've got to spend time in the shadows in the intelligence world. A lot of what needs to be done here will have to be done quietly, without any discussion, using sources and methods that are available to our intelligence agencies, if we're going to be successful. That's the world these folks operate in."—**Cheney, "Meet the Press," 9-16-01.**

"He's [bin Laden's] the target at the moment, but I don't want to convey the impression that somehow, you know, if we had his head on a platter today, that that would solve the problem. It won't."—**Cheney, "Meet the Press," 9-16-01.**

[If offered bin Laden's head on a platter], I would take it today."—**Cheney, "Meet the Press," 9-16-01.**

"If the plane would not divert, if they wouldn't pay any attention to instructions to move away from the city, as a last resort our pilots were authorized to take them out. Now people say, you know, that's a horrendous decision to make. Well, it is. You've got an airplane full of American citizens, civilians, captured by ... terrorists and you are going to, in fact, shoot it down ... and kill all those Americans on board."—**Cheney, "Meet the Press," 9-16-01.**

"You have to ask yourself: If we had had Combat Air Patrol up over New York, and we'd had the opportunity to take out the two aircraft that hit the World Trade Center, would we have been justified in doing that? I think absolutely we would have."—**Cheney, "Meet the Press," 9-16-01.**

"They came in and said, 'Sir, we have to leave immediately' and grabbed me ... and, you know, your feet touch the floor periodically, but they're bigger than I am and they hoisted me up and moved me very rapidly down the hallway, down some stairs, through some doors, and down some more stairs into an underground facility under the White House, and as a matter of fact, it's a corridor locked at both ends. And they did that because they had received a report that an airplane was headed for the White House."—**Cheney, "Meet the Press," 9-16-01.**

"I said [to President Bush], 'Delay your return. We don't know what's going on here, but it looks like, you know, we've been targeted.'"—**Cheney, "Meet the Press," 9-16-01.**

"We'd have been absolute fools not to go into button-down mode [during the Washington phase of the attacks], make sure we had successors evacuated, make sure the President was safe and secure."—**Cheney, "Meet the Press," 9-16-01.**

"There are a number of countries that are harboring terrorists. They in some cases facilitate them, in some cases finance, in other cases just tolerate. But these people could not be functioning around the globe with the success they are unless they had that help from countries. And those countries, some of them do in fact have armies and navies and air forces, and they do have capitals and they do have high-value targets. And we are going to need them to stop tolerating terrorists."—**Rumsfeld, press remarks, 9-16-01.**

"It is time for us to win the first war of the 21st century decisively."—**Bush, remarks on South Lawn, 9-16-01.**

"They have roused a mighty giant, and make no mistake about it: We're determined."—**Bush, South Lawn, 9-16-01.**

"It's a new kind of war. ... It will be political, economic, diplomatic, military. It will be unconventional, what we do."—**Rumsfeld, "Fox News Sunday," 9-16-01.**

"You yourself [the United States] trained them to be the best guerrilla force in the world. Some of these Taliban were the CIA's superstars."—**Unnamed former Pakistani intelligence official, WP, 9-17-01.**

"[Americans] must not judge each other by our fanatics. We all have them—Christians, Jews, and Muslims."—**Joan Brown Campbell, former general secretary of the National Council of Churches, USAT, 9-17-01.**

"When I take action, I'm not going to fire a \$2 million missile at a \$10 empty tent and hit a camel in the butt. It's going to be decisive."—**Bush, Newsweek, 9-17-01.**

"This [possibly firing on a civilian airliner] is new territory for all of us. Aircrew members are going through a lot of soul-searching."—**Maj. Gen. Paul A. Weaver, director of Air National Guard, LAT, 9-17-01.**

"There are areas of our laws and procedures which give us better tools against organized crime—against illegal gambling, for example—than we have against terrorists."—**Attorney General John D. Ashcroft, WP, 9-17-01.**

"This is sort of against my DNA—I'm actually pulling for [Bush] now."—**Democratic political consultant James Carville, WP, 9-17-01.**

"Arafat chose a strategy of terrorism and established a coalition of terrorism. Terrorist actions against Israeli citizens are no different from bin Laden's terrorism against American citizens."—**Sharon, remarks to the Knesset, NYT, 9-17-01.**

"I would like to assure the world that I did not plan the recent attacks, which seem to have been planned by people for personal reasons. I have been living in the Islamic emirate of Afghanistan and following its leaders' rules. The current leader does not allow me to exercise such operations."—**bin Laden, remarks broadcast on Gulf TV station Al Jazeera, NYT, 9-17-01.**

"The terrorist attacks were major atrocities. In scale they may not reach the level of many others, for example, Clinton's bombing of the Sudan with no credible pretext, destroying half its pharmaceutical supplies and killing unknown numbers of people, ... not to speak of much worse cases, which easily come to mind."—**MIT Professor Noam Chomsky, WSJ.com, 9-17-01.**

"Where is the acknowledgement that this was not a 'cowardly' attack on 'civilization' or 'liberty' or 'humanity' or 'the free world' but an attack on the world's self-proclaimed superpower, undertaken as a consequence of specific American alliances and actions? How many citi-

zens are aware of the ongoing American bombing of Iraq? And if the word 'cowardly' is to be used, it might be more aptly applied to those who kill from beyond the range of retaliation, high in the sky, than to those willing to die themselves in order to kill others."—**Susan Sontag, novelist, *New Yorker*, 9-17-01.**

"We have more than enough means to defeat them—we can find them."—**Retired Army Gen. Wesley K. Clark, former SACEUR, *Boston Globe*, 9-17-01.**

"I know that this is a different type of enemy than we're used to. It's an enemy that likes to hide and burrow in, and their network is extensive. There are no rules. It's barbaric behavior. They slit throats of women on airplanes in order to achieve an objective that is beyond comprehension."—**Bush, remarks at Pentagon, 9-17-01.**

"I want justice. There's an old poster out West, as I recall, that said, Wanted: Dead or Alive."—**Bush, Pentagon, 9-17-01.**

"Once we get them running, we have got a good chance of getting them."—**Bush, Pentagon, 9-17-01.**

"It is not enough to get one individual, although we will start with that one individual."—**Powell, State Department briefing, 9-17-01.**

"It will not be over until we have gotten into the inside of this organization, inside its decision cycle, inside its planning cycle, inside its execution capability, and until we have neutralized and destroyed it."—**Powell, State Department briefing, 9-17-01.**

"All roads lead to ... Osama bin Laden."—**Powell, State Department briefing, 9-17-01.**

"It is not one individual. It's lots of individuals, and it's lots of cells. ... Osama bin Laden is the chairman of a holding company. And within that holding company are terrorist cells and organizations in dozens of countries around the world."—**Powell, State Department briefing, 9-17-01.**

"We have a choice, either to change the way we live, which is unacceptable, or to change the way that they live, and we have—we chose the latter."—**Rumsfeld, DOD briefing, 9-18-01.**

"The terrorists do not function in a vacuum. They don't live in Antarctica. They work, they train, and they plan in countries. They're benefitting from the support of governments. They're benefitting from the support of non-governmental organizations that are either actively supporting them with money, intelligence, and weapons or allowing them to function on their territory and tolerating if not encouraging their activities. In either case, it has to stop."—**Rumsfeld, DOD briefing, 9-18-01.**

"We'll have to deal with the networks. One of the ways to do that is to drain the swamp they live in. And that means dealing not only with the terrorists but those who harbor terrorists."—**Rumsfeld, DOD briefing, 9-18-01.**

"It sounds like you might have had two or three more teams here, that had other targets in mind. That wouldn't surprise me at all. Four got through, but maybe two didn't.

That's a pretty good percentage."—**Robert M. Blitzer, former FBI counterterrorism official, WP, 9-18-01.**

"The public ought not get itself set on hoping on immediate gratification. Even if the best happens and they're able to capture bin Laden and all his senior lieutenants, that is swatting a number of very deadly mosquitoes. But that doesn't get rid of malaria. You're got to clear out the swamp."—**Woolsey, USAT, 9-18-01.**

"Bin Laden is one person who is unambiguously a terrorist. The al-Qaeda network is a broad, multiheaded organization. If bin Laden were not there, the organization would continue doing what it's been doing. So clearly the problem is much bigger than bin Laden."—**Rumsfeld, CBS's "Early Show," 9-18-01.**

"Sen. Frank Church [helped] gut the CIA's Directorate of Operations in the 1970s. What he carelessly left undisturbed then fell afoul of the Carter Administration's hit man, Stansfield Turner. That capability has never been replaced."—**Novelist Tom Clancy, WSJ, 9-18-01.**

"I make no apology—I make no apology—for being forceful in our enforcing the law and requiring adherence to the law. This investigation will pursue violators and use every tool available to us to curtail and prevent and disrupt any effort to further inflict this kind of damage on the United States or our citizens."—**Ashcroft, press remarks, 9-19-01.**

"It's important for the world to understand that there are no beaches to storm, there are no islands to conquer, there are no battle lines to be drawn."—**Bush, remarks to press, 9-18-01.**

"I don't know whether we should use the word 'war.'"—**French President Jacques Chirac, WT, 9-19-01.**

"Osama will be the last person to leave Afghanistan."—**Taliban's senior leader, Mullah Mohammad Omar, to Pakistani intelligence chief, Gen. Mahmood Admed, WP, 9-19-01.**

"If you took every terrorist in Afghanistan, you could not make a light brigade. They are spread all over. They hide in mountains and caves. They do not lend themselves to being targeted."—**Zinni, NYT, 9-19-01.**

"When we looked at Afghanistan before, the sense was we were going to bomb them up to the stone age. There is just so little to attack. It is the most target-impooverished environment conceivable."—**Unnamed Clinton Administration official familiar with planning past strikes against bin Laden's terrorist network, NYT, 9-19-01.**

"If America were to enter Pakistan and dispatch forces to Afghanistan so as to expand its might in the region, its problem will multiply daily."—**Iran's Ayatollah Ali Khamenei, Iranian TV interview, WT, 9-19-01.**

"For the Americans, introducing land forces would not lead to anything good. It would not bring anyone laurels."—**Former Soviet Gen. Boris Gromov, WP, 9-19-01.**

"Going to Syria for help in this war is ludicrous. It's like going to the Genovese family to help out in a war on organized crime."—**Perle, CSM, 9-19-01.**

"We fully understand that some nations will be comfortable supporting overt activities. Some nations will be comfortable supporting covert activities; some nations will only be comfortable in providing information; others will be helpful and only feel comfortable helping on financial matters. I understand that."—**Bush, remarks to press, 9-19-01.**

"I think that we know who we're dealing with and what we're dealing with here, and we've known for a long time."—**Condoleezza Rice, President Bush's national security advisor, WP, 9-20-01.**

"If the Constitution is shredded, the terrorists win. We want to do this [write new anti-terrorism laws] carefully."—**Sen. Patrick Leahy, WP, 9-20-01.**

"Osama has denied his involvement. It is unfortunate that America does not listen to us and levels all sorts of charges and threatens military action."—**Taliban leader Omar, speech, WT, 9-20-01.**

"If the price you pay for a coalition is that you can't fight the war, what's the point of the coalition?"—**Perle, USAT, 9-20-01.**

"We should not, I don't think, go around and indiscriminately start bombing countries that we suspect the terrorists are in because there are terrorists everywhere, here in the United States. What were [Oklahoma City bombers] Terry Nichols and Timothy McVeigh but terrorists?"—**CNN founder Ted Turner, WP, 9-20-01.**

"The government is trying to close the barn door. The horse left a long time ago. And it's not coming back."—**Angelo M. Codevilla, former Senate Intelligence Committee staffer, NYT, 9-20-01.**

"The pattern to Afghanistan's foreign and domestic wars seems to go as follows: Foreign interventions aimed at dominance founder on the belligerence of the population, who abandon internecine conflict to combine against invaders, and on the country's severe terrain. In the absence of foreign interference, however, Afghans fall easily into fighting each other, often seeking outside help, which provokes intervention, thus restarting the cycle. Limited campaigns of penetration, aimed simply at inflicting punishment, can succeed, as long as the punitive forces remain mobile, keep control of the high ground, and are skillful at tactical disengagement."—**Keegan, London's Daily Telegraph, 9-20-01.**

"Tonight, we are a country awakened to danger and called to defend freedom. Our grief has turned to anger and anger to resolution. Whether we bring our enemies to justice or bring justice to our enemies, justice will be done."—**Bush, address to joint session of Congress, 9-20-01.**

"The evidence we have gathered all points to a collection of loosely affiliated terrorist organizations known as al Qaeda. ... Al Qaeda is to terror what the Mafia is to crime."—**Bush, address to Congress, 9-20-01.**

"By aiding and abetting murder, the Taliban regime is committing murder. And tonight the United States of America makes the following demands on the Taliban.

Deliver to United States authorities all the leaders of al Qaeda who hide in your land. Release all foreign nationals, including American citizens, you have unjustly imprisoned. Protect foreign journalists, diplomats, and aid workers in your country. Close immediately and permanently every terrorist training camp in Afghanistan, and hand over every terrorist and every person in their support structure to appropriate authorities. Give the United States full access to terrorist training camps, so we can make sure they are no longer operating. These demands are not open to negotiation or discussion. The Taliban must act and act immediately. They will hand over the terrorists, or they will share in their fate."—**Bush, address to Congress, 9-20-01.**

"Our war on terror begins with al Qaeda, but it does not end there. It will not end until every terrorist group of global reach has been found, stopped, and defeated."—**Bush, address to Congress, 9-20-01.**

"We are not deceived by their pretenses to piety. We have seen their kind before. They are the heirs of all the murderous ideologies of the 20th century. By sacrificing human life to serve their radical visions, by abandoning every value except the will to power, they follow in the path of fascism, Nazism, and totalitarianism. And they will follow that path all the way to where it ends, in history's unmarked grave of discarded lies."—**Bush, address to Congress, 9-20-01.**

"We will direct every resource at our command—every means of diplomacy, every tool of intelligence, every instrument of law enforcement, every financial influence, and every necessary weapon of war—to the disruption and to the defeat of the global terror network."—**Bush, address to Congress, 9-20-01.**

"Every nation in every region now has a decision to make: Either you are with us, or you are with the terrorists. From this day forward, any nation that continues to harbor or support terrorism will be regarded by the United States as a hostile regime."—**Bush, address to Congress, 9-20-01.**

"The only way to defeat terrorism as a threat to our way of life is to stop it, eliminate it, and destroy it where it grows."—**Bush, address to Congress, 9-20-01.**

"I have a message for our military: Be ready. I've called the armed forces to alert, and there is a reason. The hour is coming when America will act, and you will make us proud."—**Bush, address to Congress, 9-20-01.**

"Our nation, this generation, will lift the dark threat of violence from our people and our future. We will rally the world to this cause by our efforts, by our courage. We will not tire, we will not falter, and we will not fail."—**Bush, address to Congress, 9-20-01.**

"I will not forget the wound to our country and those who inflicted it. I will not yield, I will not rest, I will not relent in waging this struggle for freedom and security for the American people. The course of this conflict is not known, yet its outcome is certain. Freedom and fear, justice and cruelty, have always been at war, and we know that God is not neutral between them."—**Bush, address to Congress, 9-20-01.**

"We have received a wake-up call from hell."—**Netan-**

yahu, remarks to a US House of Representatives committee, 9-20-11.

"[The war against terrorism will be] a marathon, not a sprint."—**Rumsfeld, DOD briefing, 9-20-01.**

"We have no intention of surrendering Osama bin Laden to the United States. He is a free man and he can move to any place that he wishes, but we are not going to expel him."—**Statement of Afghanistan's Taliban leadership, NYT, 9-21-01.**

"I don't know where the Taliban gets some of their ideas. Many of them have nothing, absolutely nothing, to do with Islam."—**Religious scholar Anis Ahmed of Pakistan's Islamic University, USAT, 9-21-01.**

"These folks [anti-Taliban rebels], they know the lay of the land. They know, in some cases, some targets that are useful; they have ideas about how to deal with the Taliban. I think that one has to say that they can be useful in a variety of ways."—**Rumsfeld, "Fox News," 9-21-01.**

"It [Bush's address to Congress] was an arrogant speech. Americans are always telling us things are not black and white, that there are always grays. When we learn this from them, they say, no, you are either in or out, with us or against us. I am not allowed to use 'buts.'"—**Abdel Bari Atwan, editor of the London-based pan-Arab daily *Al-Quds al-Arabi*, NYT, 9-22-01.**

"We are Afghans. We can defend. We have offered two million for our independence. We are ready to offer two million more."—**Suhail Shaheen, Afghan deputy ambassador to Pakistan, NYT, 9-22-01.**

"The great speculators wallow in an economy that every year kills tens of millions of people with poverty—so what is 20,000 dead in New York? Regardless of who carried out the massacre, this violence is the legitimate daughter of the culture of violence, hunger, and inhumane exploitation."—**Dario Fo, Italian playwright, NYT, 9-22-01.**

"The world has changed. Science fiction has become reality. We've talked about the chemical and biological weapons being deployed over cities and toxins being put into cities' water supplies. These have all been bad nightmares that we've pushed aside, but now we've got to think about these unconventional threats."—**Robertson, London's *Daily Telegraph*, 9-22-01.**

"We told the members of the board of broadcast governors that we didn't think it was appropriate for the Voice of America to be broadcasting the voice of the Taliban into Afghanistan, and we didn't think it was consistent with their charter."—**State Department spokesman Richard Boucher, referring to VOA's decision not to air an interview with Taliban head Omar, WP, 9-23-01.**

"I was stunned, absolutely stunned. It goes against every principle of journalistic ethics."—**Unnamed VOA journalist, angered by the VOA's no-broadcast decision, WP, 9-23-01.**

"They are unlike the Mafia, which built loyalty out of criminal enterprise but where personal and even family relationships could be overcome with money or deals with those in prison. [Islamic informers] would have to

give up their religious beliefs to become sources [for the FBI], and that is potentially more dangerous than threat of death."—**Unnamed former FBI official, WP, 9-23-01.**

"There's a greater risk of dying on the highway than from exposure to anthrax."—**Jonathan B. Tucker, a germ-weapons expert, Monterey Institute of International Studies, NYT, 9-23-01.**

"We will not be able to reach all of the necessary targets cleanly, nor should we try to economize on the use of our power, which is our great strength. The military is a killing instrument; if we want finesse, we should hire a ballet company."—**Military affairs commentator Ralph Peters, WP, 9-23-01.**

"I think in the near future, we will be able to put out a paper, a document, that will describe quite clearly the evidence that we have linking [bin Laden] to the attack."—**Powell, NBC's "Meet the Press," 9-23-01.**

"The fact is that the Taliban do know where the al Qaeda organization is."—**Rumsfeld, remarks to press, 9-23-01.**

"The ultimate victory in this war is when everyone who wants to can do what everyone of us did today, and that is get up, let your children go to school, go out of the house and not in fear, stand here on a sidewalk and not worry about a truck bomb driving into us, and able to be free in speech and thought and activity and behavior."—**Rumsfeld, remarks to press, 9-23-01.**

"They know where he [bin Laden] is. ... They know their country. ... It is just not believable that the Taliban do not know."—**Rumsfeld, CBS's "Face the Nation," 9-23-01.**

"It's a very repressive and terrible regime. The Afghan people would be better off without it. We will see what means are at our disposal to do that."—**Rice, NYT, 9-24-01.**

"We are not going to declare that there are good terrorists and bad terrorists. There's terrorism. And if you sponsor terrorism, you are hostile to the United States."—**Rice, WT, 9-24-01.**

"Money is the lifeblood of terrorist operations. Today, we're asking the world to stop payment."—**Bush, remarks in Rose Garden, 9-24-01.**

"The only reason Desert Storm worked was because we managed to go up against the only jerk on the planet who actually was stupid enough to confront us symmetrically."—**Zinni, WSJ, 9-25-01.**

"It is certain that, if someone has done great harm to society, and there is a danger that if he remains free he may be able to do it again, you have the right to apply self-defense for the society which you lead, even though the means you may choose may be aggressive."—**Vatican spokesman Joaquin Navarro-Valls, describing the Pope's views, in an interview with Reuters, WP, 9-25-01.**

"I don't foresee a need to do that [resume the military draft]."—**Rumsfeld, DOD briefing, 9-25-01.**

"The mission needs to define the coalition, and we ought not to think that a coalition should define the mission."—**Rumsfeld, DOD briefing, 9-25-01.**

"There's no question but that some steps will be visible, as in a traditional conflict, and in other cases they will be not visible. It will not be an antiseptic war, I regret to say. It will be difficult. It will be dangerous. ... The likelihood is that more people may be lost."—**Rumsfeld, DOD briefing, 9-25-01.**

"There's not going to be a D-Day as such, and I'm sure there will not be a signing ceremony on the *Misouri* as such. This is not something that begins with a significant event or ends with a significant event. It is something that will involve a sustained effort over a good period of time."—**Rumsfeld, DOD briefing, 9-25-01.**

"[The \$40 billion emergency spending bill is] just a down payment. We were only getting started there."—**Breaux, WSJ, 9-26-01.**

"The dogs of war are not the only critters who have slipped the leash. Under the guise of fighting terrorism, repairing damage, fighting recession, you could fit almost anything."—**Mitchell Daniels, the White House budget director, WSJ, 9-26-01.**

"The more [military] power you have, the more diplomatic and political power you have. You don't know when you may have to use massive power to rescue a special forces operation if something unexpected were to happen. And deterring other countries like Iraq is important as well. Iraq is not a sideshow. It is there, and it has chemical and biological weapons."—**Cordesman, LAT, 9-26-01.**

"The American people must know that the sad events that took place recently were the result of their government's wrong policies. Your government is perpetrating all sorts of atrocities in Muslim countries. Instead of supporting your government's policies you should urge your government to reconsider their wrong and cruel policies."—**Taliban leader Omar, London's Daily Telegraph, 9-26-01.**

"George [CIA Director George Tenet] and I have been spending a lot of quality time together. There's a reason. I've got a lot of confidence in him, and I've got a lot of confidence in the CIA."—**Bush, remarks to CIA employees, 9-26-01.**

"When you scrub it all down, if you're going to get good intelligence on terrorist groups, it's going to come from somebody who by definition is a terrorist. If we're not prepared as a nation to do that, then we're not going to get this intelligence. ... This kind of intelligence is not going to come by wandering down to the League of Women Voters and seeing who you find there."—**Bremer, in House Select Intelligence subcommittee testimony, 9-26-01.**

"If somebody had called us and said, We have a hijacking 100 miles out coming from Europe or South America, there are terrorists on board, and they've taken over the airplane, that's a scenario we've practiced. We did not practice—and I wish to God we had—a scenario where this takes off out of Boston and minutes later crashes into New York City. This is a whole new ball game."—**USAF Gen. Ralph E. Eberhart, commander in chief of NORAD, NYT, 9-27-01.**

"I hope we don't make the mistake of abandoning our principles to protect ourselves. It never works over the long term. We're far better off sticking to what we believe."—**Perle, WP, 9-27-01.**

"We must be aware of the superiority of our civilization, a system that has guaranteed well-being, respect for human rights, and—in contrast with Islamic countries—respect for religious and political rights, a system that has as its values understandings of diversity and tolerance. ... The West will continue to conquer peoples, like it conquered Communism."—**Italian Prime Minister Silvio Berlusconi, press remarks, WP, 9-27-01.**

"Islamic Iran will not participate in any measure that is led by the United States. ... It is true that America's dignity has been badly damaged, but that does not mean that it can make an arrogant face and force other countries to give in to its demands. It is wrong to say that those who are not with us are with the terrorists. No, we are not with you, and we are not terrorists."—**Iran's Ayatollah Ali Khamenei, NYT, 9-27-01.**

"These assaults have brought the battlefield home to us. ... The world has changed; ... we can no longer count on future wars being waged safely in their regions of origin."—**Rumsfeld, DOD briefing, 9-27-01.**

"The Taliban continues to use its lands to harbor, armor, and encourage those criminals to go on with their terror operations, spreading fear and destruction over the world, causing harm to Islam and spoiling the name of Muslims."—**Official statement of the government of Saudi Arabia upon breaking diplomatic relations with Afghanistan, WP, 9-28-01.**

"It's wrong to kill innocent people. ... It's also wrong to praise those who kill innocent people."—**Pakistan's Mufti Nizamuddin Shamzai, formerly an ardent supporter of bin Laden, NYT, 9-28-01.**

"Bioterrorism remains a low probability, but a growing probability, coupled with a high vulnerability for our nation."—**Sen. Bill Frist, commenting on a draft GAO report, WP, 9-28-01.**

"Everybody hates death, fears death. But only those, the believers who know the life after death and the reward after death, would be the ones who will be seeking death."—**From five-page handwritten note found in belongings of terrorist Mohammed Atta, WP, 9-28-01.**

"Check all of your items—your bag, your clothes, knives, your will, your IDs, your passport, all your papers. Check your safety before you leave. ... Make sure that nobody is following you."—**Atta document, WP, 9-28-01.**

"There's no question but that there are any number of people in Afghanistan—tribes in the south, the Northern Alliance in the north—that oppose Taliban, and clearly, we need to recognize the value they bring to this anti-terrorist, anti-Taliban effort and, where appropriate, find ways to assist them."—**Rumsfeld, NBC's "Meet the Press," 9-30-01.**

"We know of certain knowledge that the nations on our terrorist list have weaponized chemical and biological

weapons, and we know that a number of them are seeking nuclear capabilities. And we know that they have close linkages with terrorist networks.”—**Rumsfeld, “Meet the Press,” 9-30-01.**

“We think that there is a very serious threat of additional problems now, and frankly, as the United States responds, that threat may escalate.”—**Ashcroft, CBS’s “Face the Nation,” 9-30-01.**

“There are all kinds of threats. I think there is a clear, present danger to Americans—not one that should keep us from living our lives but one that should make us alert. ... It’s very unlikely that all of those associated with the attacks of Sept. 11 are now detained or have been detected.”—**Ashcroft, CNN’s “Late Edition,” 9-30-01.**

“I’m not trying to be an alarmist, but we know that these terrorist organizations, like al Qaeda, run by Osama bin Laden and others, have probably found the means to use biological or chemical warfare, and that is very, very bad for the world.”—**Andrew Card, White House chief of staff, on “Fox News Sunday,” WP, 10-1-01.**

“We will not accept in our country even a single soldier who will attack Muslims or Arabs.”—**Saudi Defense Minister Prince Sultan bin Abdul Aziz, interview in government-controlled Okaz newspaper on 9-30-01, WP, 10-1-01.**

“Our discussion with our American friends is steady, and it is in total agreement between us and them. ... We have not been asked for the using of the bases in Saudi Arabia.”—**Prince Bandar bin Sultan bin Abdul Aziz, Saudi ambassador to US, on ABC’s “This Week,” WP, 10-1-01.**

“Osama is in Afghanistan, but he is at an unknown place for his safety and security. Only security people know about his whereabouts. Osama bin Laden is under our control.”—**Zaeef, Taliban ambassador to Pakistan, remarks to reporters, IHT, 10-1-01.**

“I have seen absolutely powerful and incontrovertible evidence of [Osama bin Laden’s] link to the events of the 11th of September.”—**Blair, interview on BBC, IHT, 10-1-01.**

“The [American] flag stands for jingoism and vengeance and war. [My daughter] tells me I’m wrong—the flag means standing together and honoring the dead and saying no to terrorism. ... I tell her she can buy a flag with her own money and fly it out her bedroom window, because that’s hers, but the living room is off-limits.”—**Katha Pollitt, columnist for the hard-left political journal *The Nation*, quoted in *The Weekly Standard*, issued 10-1-01.**

“This, you’ve probably guessed, is no ordinary mother. To paraphrase Orwell, only a columnist for *The Nation* could be so obtuse.”—**Editorial, referring to Pollitt’s statement, *The Weekly Standard*, issued 10-1-01.**

“[Bin Laden operatives] have been wrapped up dozens and dozens of times, in all four corners of the Earth. ... Usually you’d hit them at a hotel, and the guy would be sitting in his underwear with a laptop.”—**Unnamed US official, *US News and World Report*, issued 10-1-01.**

“New fronts will be established, just like against the Communists. You may capture the airports and the capital and the cities, but people will go to the mountains. God willing, I believe that neither the United States nor their allies will be able to do anything.”—**Taliban leader Omar, statement on state-run Voice of Shariat radio, WP, 10-2-01.**

“This is a battle with only one outcome: our victory, not theirs.”—**Blair, speech at Brighton, UK, 10-2-01.**

“Surrender the terrorists or surrender power; that is your choice.”—**Blair, Brighton, 10-2-01.**

“We will do all we humanly can to avoid civilian casualties, but understand what we are dealing with. ... If they could have murdered not 7,000 but 70,000, does anyone doubt they would have done so and rejoiced in it? So there is no compromise possible with such people.”—**Blair, Brighton, 10-2-01.**

“The kind of information that will turn the day will be scraps of information that people from all across the globe will give, sometimes people from inside countries that are harboring terrorists, sometimes conceivably people from inside organizations that would like terrorists to leave their country.”—**Rumsfeld, media availability, 10-2-01.**

“The issue of basing US troops in Pakistani territory has not been raised with us. The fact that the United States is sensitive to the concerns that some Pakistanis may have is a good thing. It shows that we are working with each other and understanding each others’ requirements. I think that the US does not really need to have a large physical military presence in Pakistan at this stage.”—**Unnamed senior Pakistani official, NYT, 10-3-01.**

“We are trying to do everything we can to spread dissension within the Taliban.”—**Unnamed senior Defense Department official, NYT, 10-3-01.**

“In the United States, we have this thing called the Constitution, so to bring him [bin Laden] here is to bring him into the justice system. I don’t think that was our first choice. Our first choice was to send him some place where justice is more streamlined.”—**Samuel R. “Sandy” Berger, President Clinton’s national security advisor, WP, 10-3-01.**

“They [the Taliban] are hated, hated for what they have done to women, hated for the fear they have spread, hated for the hunger they have brought to people, hated for the way they have distorted Islam, hated for making Afghanistan a base for people like bin Laden who have brought so much misery around the world. So is it any surprise that they are crumbling now?”—**Unnamed Afghan, NYT, 10-4-01.**

“The ‘center of gravity’ is not bridges. It’s the Taliban.”—**Unnamed Administration official, WT, 10-4-01.**

“On my orders, the United States military has begun strikes against al Qaeda terrorist training camps and military installations of the Taliban regime in Afghanistan. ... The battle is now joined on many fronts. We will not waver. We will not tire. We will not falter. And we will not fail.”—**Bush, Presidential address to the nation, 10-7-01.** ■

Strategic Dominance From Air and Space

**Air Force Association 2002 Statement of Policy,
adopted by the National Board of Directors,
September 2001.**

THE military strength of the United States is defined primarily by the global vigilance, reach, and power that we derive from our capabilities in air and space.

To an extent no other nation can match, US forces look deep, reach far and fast, penetrate hostile territory, maintain a global situational awareness, and strike with precision. More often than not, holding the combat advantage will depend on our systems operating in air and space.

The other services contribute to this advantage, but the preponderance of the nation's aerospace power is created and maintained by the US Air Force.

This is the force the nation will look to first for long-range power projection and for rapid response in time of crisis.

Today's capabilities are largely the product of investments made during the 1980s in technology and force modernization. However, the investment has not been sustained in recent years.

Our margin is now diminishing, and new threats and requirements have begun to emerge. We must be able to operate in increasingly challenging and lethal environments and in such emerging regimes as cyberwar, space control, and homeland defense.

Accordingly and properly, the armed forces have been called upon to trans-

form themselves, evolve from their Cold War doctrines and configurations, exploit the technological Revolution in Military Affairs, and develop advanced capabilities attuned to the coming needs of the 21st century.

A major problem—among others—is that transformation must compete for resources with other demands that include readiness, personnel needs, and recapitalization of aging weapon systems and deteriorating base facilities.

All of the services are in bad shape. They have been underfunded and overused. They have been unable to retire or replace equipment as it wore out. Force modernization has been curtailed or postponed. Readiness and personnel retention are down. The problems are getting worse.

Thus far, expectations of adequate funding for defense have not been met and national defense planning is still driven by budgetary rather than strategic considerations. In our view, defense simply must command a higher priority.

Otherwise, there will be no transformation, and the armed forces will slip further into decline.

Strategic Aerospace Dominance. We believe the Air Force should pursue a strategic concept of dominance from air and space.

■ To be effective, the response to crisis must be rapid. The time lines of warfare are shortening. Adversaries will know that if they are to suc-



ceed, they must achieve their objectives before the US and its allies can respond.

- The concept includes the aerospace assets of all services and allied forces but depends primarily on the US Air Force.

- We must be prepared to dominate major conflict *in* and *from* aerospace. When operating in aerospace, we must dominate air-to-air, air-to-space, space-to-space, and space-to-air. When operating from aerospace, the goal will be to dominate surface operations by attacking fixed and mobile targets.

Although aerospace power will be the dominant element in most conflicts, we do not believe in single dimension strategies. Surface forces will remain critical, and the nation will need a balance of land, sea, and air capabilities.

Joint and combined forces, paced by strategic dominance from air and space, must cover the spectrum of operations from peacetime contingencies to major conflict.

Transformation. The Revolution in Military Affairs—the main elements of which are stealth, long-range precision strike, and information dominance—has introduced alternatives to the attrition model of warfare.

In many cases, we can achieve the effects of mass without the actual massing of forces and defeat an enemy at a lower cost of lives and resources on both sides. This happened in a series of military operations in the 1990s, beginning with the Gulf War. Transformation also puts greater emphasis on space and on the power to obtain, use, defend, and attack information.

Aerospace power leads this transformation. It further leads in the transition to effects-based operations, in which the objective is not to destroy the enemy but to gain a strategic result. That is the ultimate aim of all warfare. The precision of long-range airpower and information from sensors in air and space have increased our strategic options. Possibilities include halting, disabling, neutralizing, constraining, or deterring the enemy. In these cases, or in the event that destruction of the enemy force is required, aerospace power will be a prominent part of the solution.

Transformation is not a new experience for the Air Force, which has

been transforming steadily since its creation. Its entire history has been one of change, constantly seeking greater speed, range, payload, stealthiness, and accuracy. Airpower has matured into aerospace power.

Except for those with a vested interest in perpetuating the attrition model of warfare, there is a general recognition that aerospace forces can and should carry more of the burden in modern conflict. Transformation strategies and budgets can be judged in part on how well they reflect that basic change.

Readiness and Recapitalization.

In the past five years, Air Force readiness has fallen by 23 percent and the cost per flying hour per aircraft has almost doubled. In both instances, a principal reason has been the extent of maintenance required by the oldest aircraft fleet in Air Force history. With older aircraft, problems occur more often and in less predictable ways, repairs are more complicated, and spare parts are more expensive and difficult to find.

The average age of Air Force aircraft today is 22 years. Even if the Air Force executed every modernization program planned, with no delays or reductions, the average age would continue to rise and by 2020 would be reaching the level of 30 years.

The difficulty is acute with the old KC-135 tankers. At any given time, almost a third of the fleet is in the depot for maintenance, and on average, these aircraft remain in the depot for more than a year. Substantial numbers of F-16 fighters are forecast to wear out and leave service before Joint Strike Fighter replacements are available.

Spare parts and munitions have been depleted and stock levels have not been restored. Delayed maintenance of real property is now generating additional maintenance problems on its own.

This is an accumulated problem, brought on by the neglect of the armed forces in the 1990s. Correcting it will be a major expense but one that can no longer be put off.

The Resource Gap. To maintain the current force and to avoid falling further behind in readiness and recapitalization, the services need more than \$50 billion a year in additional funding above the Fiscal Year 2000 baseline. Such an increase would not address the cost of force moderniza-

tion and transformation, which would be extra.

Budget proposals through 2002 make only a dent in the problem. Although other priorities are undoubtedly important, adequate funding and a credible commitment to properly support the armed forces are essential.

It has been suggested that transformation might be funded by savings and reductions to the present defense program. This is not realistic. No doubt some savings are possible, but not enough to cover readiness, recapitalization, and transformation. We cannot save ourselves rich, and we cannot stand down the force of today to reinvest the money in the force of tomorrow.

The nation must spend enough on defense to support its strategic interests, and it can afford to do so. On average, over the past 60 years, the United States has allocated eight percent of GDP for defense. In 1995, for the first time in almost 50 years, defense slipped below four percent of GDP. Since then, the worst of the deterioration now evident in the armed forces has occurred. The current allocation is about three percent.

We believe that four percent of GDP is an affordable goal and that we should begin increasing the defense allocation toward that level.

Force Structure. We support the exploration for a better standard for sizing the armed forces. We also support the need to prepare for future conflict while preserving capabilities to deal with near-term crisis. However, we believe that the approach used in recent years—sizing the armed forces to fight two regional conflicts simultaneously—is basically sound. The main problem is that it is not funded adequately.

Too often, criticism of the two-conflict standard has been accompanied by proposals for force cuts. We should be open to consideration of a different force sizing standard but take care to be sure the replacement is not a reduction mechanism in disguise, especially in regard to aerospace power.

In major conflicts of the 20th century—World War II, Korea, Vietnam, and the Gulf—actual requirements for airpower seriously exceeded prewar estimates, even though quality improvements made it possible for each unit of airpower to deliver more

results. The limited air war over Serbia in 1999 took more of the Air Force's combat force structure than expected, and a period of reconstitution was needed when it was over.

At present, the Aerospace Expeditionary Forces are not fully fleshed out, some of them lacking in such capabilities as long-range standoff precision strike and suppression of enemy air defenses.

Ultimately, US forces must be sized to fight and win across the spectrum of conflict, including major theater war, and not be so stripped that we are vulnerable to attack elsewhere. The two-conflict standard has met that specification, and we should be certain that any replacement does so as well.

Forces and Requirements. Oddly, the effort to refocus and restructure the armed forces began prior to the promulgation of a new national security strategy. Even so, certain requirements would be in effect across a broad range of strategies.

Long-range precision strike is a defining element of the Revolution in Military Affairs. Despite this, it has received insufficient attention in recent years in both Department of Defense and Air Force plans.

Therefore, we urge the upgrade of existing bombers and weapons, especially the B-2, the accelerated development of improved munitions, such as the small diameter bomb, which will act as multipliers for the bomber fleet, and fielding a new long-range strike platform sooner than 2037, as is now projected.

Fighter modernization is essential, especially the F-22, which combines the advantages of leading-edge stealth, supercruise, higher operating altitudes, and advanced avionics. This program has already been cut too much. Increasing the number of F-22s to be procured would be a wise move for a transformation-minded Administration. We also need the Joint Strike Fighter, which will work in cooperation with the F-22 in any conflict that persists for an extended time.

The present shortfall in airlift is about to get worse as the demand for mobility grows. No one believes that a lesser capability is acceptable. The acquisition of a third more new airlifters than initially planned becomes essential. The tanker fleet simply must be replaced, and soon.

The space-based radar will be the linchpin of the future force. It will keep vast expanses of territory under surveillance, focusing in closely when required, and it will be the means by which our intelligence perspective is truly transformed from regional to global.

We believe that unmanned aerial vehicles have great potential, both for intelligence, surveillance, and reconnaissance and in direct combat roles. This is an area deserving special focus in research and development.

The Air Force Association has long supported defense against ballistic



missiles of all ranges as a capability the nation must vigorously pursue. Technology has now brought us closer to that goal. We do not, however, agree that ballistic missile defense must be or should be funded at the expense of other vital defense requirements. The emerging option of this technology is yet another reason why the nation needs to increase its investment in defense.

Directed energy weapons offer great potential, especially in the area of missile defense. We strongly support the development and deployment of the Airborne Laser and later on the Space-Based Laser.

As we develop missile defenses, it is critical to maintain our shield of nuclear deterrence. That objective should be achieved with the least possible numbers of nuclear weapons consistent with our national security needs, but we urge the nation's leaders to proceed with the greatest caution, especially if considering a unilateral nuclear drawdown.

Even at the reduced levels of nuclear weapons being considered, we believe the Strategic Triad of bombers and land- and sea-based ballistic missiles should be sustained.

The Aerospace Force. We applaud the decision to establish the Air Force as the executive agent for space for the Department of Defense. We believe that all concerned will be well-served by this arrangement, and the Air Force is positioned to demonstrate its capability and commitment to space.

We continue to believe in an integrated operational domain of aerospace, stretching from the Earth's surface to the outer reaches of space. This concept requires the recognition of space as a full partner in the aerospace domain. It also obliges the Air Force to foster cultural change that fully embraces aerospace power and to develop leaders who can fulfill the challenge.

The mission is an expanding one that will eventually include not only force support and enhancement from space but also space control and space force application.

Military aerospace capabilities are important to the nation, and all services benefit from them. For example, space communications requirements over the next decade are projected to increase 15- to 20-fold. This calls for a corresponding increase in resources.

The Air Force should not be expected to fund joint service requirements of ever-rising magnitude out of a constant share of the defense budget.

We also believe the time has come to amend Title 10 of the US Code, as proposed by the Congressionally chartered Space Commission, to assign the Air Force the responsibility to organize, train, and equip forces for defensive and offensive space operations as well as air operations.

People. The paramount importance of people was recognized as limited budget increases have been channeled toward recruiting and retention concerns. The funding is helpful, and so is the attitude behind it, but until funding shortfalls are resolved in other critical areas affecting quality of service, the problems will continue.

The gap between compensation in the private sector and in the armed forces continues to pull many of the best people away. Dollar-for-dollar comparability is not feasible, but military compensation has to be perceived as reasonable and fair. We must reduce the pay gap and eliminate out-of-pocket expenses military people incur whenever they move from one station to another.

We must restore the dilapidated base facilities and housing, which are fast becoming a disgrace to the nation. Most of all, we must make the troops know their service is recognized, honored, and valued. The All-Volunteer Force is a benefit to our nation, but the nation must be willing to pay the cost.

Problems persist in the Tricare military health program, which has not yet lived up to its advance billings. Tricare network costs are now draining funds away from military treatment facilities at an alarming rate. At the same time, Tricare has not proved to be best way of delivering care to all constituencies. The options should be kept open, especially for retirees, who should be offered a wider range of choices, as other federal retirees already are.

We support the Air Force's civilian workforce shaping initiatives. Forty percent of the civilian employees will be eligible for retirement in the next five years, and force draw-downs of recent years have skewed the skill mix. The civilian force must be rebuilt and care must be taken to do it right.

Total Force. In contingencies, deployments, and conflicts, it is difficult to distinguish the Air National Guard and Air Force Reserve Command components from the active Air Force elements. The Guard and Reserve are programmed to contribute 10 percent of the strength of the Aerospace Expeditionary Forces. They often exceed that, especially in aerial refueling and intratheater airlift.

The Air Force continues to lead the way with Total Force initiatives. Another example is seen in recent programs where active forces draw on the depth and strength of the Guard and Reserve for such resources as instructor pilots.

The value of the Air Guard and Reserve forces is extraordinary, but the pressures on them grow along with their rising participation in the Air Force mission. It is vital to recognize those pressures when assigning shares of the workload. We should also ensure that modernization of Guard and Reserve equipment keeps pace with that of the active force.

The Air Force Association expresses its appreciation for the support of the employers of Guard and Reserve members. Without their cooperation, the strength of the Total Force would not be possible.

Areas of Specific Concern:

■ **Research and Development.** Orderly investments in research and development are the lifeblood of the future. For reasons ranging from inadequate funding to insufficient priority, both the Air Force and the Department of Defense are underinvested in science and technology.

■ **Industrial Base.** The defense industry that sustained the armed forces in past wars has diminished and its operating profits have continued to decline. The "Arsenal of Democracy" that once existed is gone, and it is imperative that we sustain what remains of the defense industrial base. We do that in part by contracting and business practices that are reasonable and fair and by creating a climate in which a mutually beneficial partnership can thrive.

We also recognize an internal Air Force industrial base, consisting of the air logistics centers. A substantial part of the maintenance and repair workload can be and should be contracted out to the private sector, but we must preserve a ready and controlled source of depot maintenance.

That makes it imperative that we maintain a viable core capability in the air logistics centers.

■ **Infrastructure.** Force reductions have left all of the services with an excess of base infrastructure. At the same time vital facilities are deteriorating for lack of maintenance, the services are spending money they cannot afford to keep unneeded facilities open. A new round of base realignments and closures is essential and inevitable. This Administration should learn from the mistakes of the last one and not politicize the process.

■ **Balancing Requirements and Resources.** Whatever the strategy and the force-sizing standard are, they must be fully funded. The present level of requirements—even before transformation begins—cannot be sustained without more money. If we persist in this mismatch, the price for our mistake will be paid by the force and our people.

The Centrality of Aerospace Power. We do not claim that aerospace power will be decisive in every instance. However, it is the hardest-hitting, longest-reaching, and most flexible force the nation possesses.

Aerospace power can support surface operations, but it can also achieve strategic, operational, or tactical objectives independent of surface power or with land or sea forces in support. It is difficult to imagine a conflict of any major scope in which land power or sea power could survive, much less be decisive, without aerospace power.

Aerospace power is central to our nation's security. Our capabilities in air and space have been unique sources of strength for the United States as well as incomparable instruments of national power. Aerospace power also represents those capabilities in which we hold and will continue to hold the greatest marginal advantage over potential adversaries.

Through its core competencies of aerospace superiority, information superiority, global attack, precision engagement, rapid global mobility, and agile combat support, the US Air Force will support and defend the United States in peace and war.

In time of crisis, aerospace power will continue to be the force of choice for rapid response with minimum risk to US personnel and noncombatants. ■



Awards

These are the Air Force Association National Awards for 2001.

National Aerospace Awards

Award

H.H. Arnold Award

AFA's highest honor in national security to a member of the armed forces

W. Stuart Symington Award

AFA's highest honor in national security to a civilian

John R. Alison Award

AFA's highest honor for industrial leadership

David C. Schilling Award

Outstanding contribution in flight

Theodore von Karman Award

Outstanding contribution in science and engineering

Gill Robb Wilson Award

Outstanding contribution in arts and letters

Hoyt S. Vandenberg Award

Outstanding contribution in aerospace education

Thomas P. Gerrity Award

Outstanding contribution in logistics

Department of Veterans Affairs Employee of the Year

Recipient

Gen. Joseph W. Ralston, Commander in Chief, US European Command

Rep. Cliff Stearns and Sen. Michael B. Enzi, co-chairmen, Air Force Caucus

George David, Chairman and CEO, United Technologies, Hartford, Conn.

Lt. Col. David M. Nelson, F-22 CTF, Edwards AFB, Calif.

Have CSAR Team, SWC, Schriever AFB, Colo.

Benjamin S. Lambeth, Senior Staff Member, RAND, Santa Monica, Calif.

Aerospace Basic Course, Maxwell AFB, Ala.

Maj. Marcus F. Novak, 48th Component Repair Sq., RAF Lakenheath, UK

Jackie Zimmerman, Huntington Veterans Center, Huntington, W.Va.



Crew Awards and Special Citations

Award	Recipient	Achievement
Airborne Battle Management Crew	Bulldog 01 Crew , 964th Airborne Air Control Sq., Tinker AFB, Okla.	Best ABM crew
CMSAF Thomas N. Barnes Award	SSgt. Jacob R. Veriato , 37th Airlift Sq., Ramstein AB, Germany	Crew Chief of the Year
Lt. Gen. Claire L. Chennault Award	Maj. David A. Hlatky , 20th Operations Support Sq., Shaw AFB, S.C.	Best aerial warfare tactician
Brig. Gen. Ross G. Hoyt Award	Cacti 02 Crew , 349th Air Refueling Sq., McConnell AFB, Kan.	Best air refueling aircrew
Gen. Curtis E. LeMay Award	Scuba 11 Crew , 96th Bomb Sq., Barksdale AFB, La.	Best bomber aircrew
Gen. Jerome F. O'Malley Award	Capt. Robert M. Haines , 9th Reconnaissance Wing, Beale AFB, Calif.	Best reconnaissance crew
Gen. Thomas S. Power Award	S-200 Crew , 90th Operations Support Sq., F.E. Warren AFB, Wyo.	Best missile combat crew
Space Operations Award	Alpha Crew , 21st Space Wing, Peterson AFB, Colo.	Best space operations crew
Lt. Gen. William H. Tunner Award	A C-5 crew , 22nd Airlift Sq. and 60th Aircraft Generation Sq., Travis AFB, Calif.	Best airlift aircrew
USAF Test & Evaluation Team of the Year	F-16 50T5 Force Development Evaluation Test Team , Eglin AFB, Fla.	Best test team

Air National Guard and Air Force Reserve Command Awards

Award	Recipient	Achievement
CMSgt. Dick Red Award	CMSgt. Dale A. Bashore , 193rd Special Operations Wing, Pennsylvania ANG	Best ANG aerospace maintenance
Maj. Gen. Earl T. Ricks Award	Lt. Col. Scott D. Baldwin , 158th Fighter Wing, Vermont ANG	Best ANG airmanship
Best Air National Guard Unit	120th Fighter Sq. , Colorado ANG	Top ANG unit
Best Air Force Reserve Unit	514th Air Mobility Wing , McGuire AFB, N.J.	Top AFRC unit
President's Award	326th Airlift Sq., 512th Airlift Wing , Dover AFB, Del.	Best Reserve aircrew

USAF Team of the Year

Recipient	Unit
MSgt. Brian Douglas	24th Special Tactics Sq., Pope AFB, N.C.
SSgt. Danny Hedrick	353rd Special Operations Support Sq., Kadena AB, Japan
MSgt. Matthew Shryock	16th Civil Engineer Sq., Hurlburt Field, Fla.
TSgt. John Sparr	193rd Aircraft Generation Sq., Pennsylvania ANG
SSgt. Travis West	21st Special Operations Sq., RAF Mildenhall, UK

USAFA Outstanding Squadron

**Cadet Squadron 3
The "Dogs of War"**

Fall Cadet Commander
Cadet Lt. Col. Daimon E. Geopfert

Spring Cadet Commander
Cadet Lt. Col. Christopher L. Moeller

Citations of Honor

Recipient

Command-and-Control Systems Maintenance Division, Air Force Pentagon Communications Agency

Institute for National Security Studies Team, USAF Academy, Colo.

Precision Strike Development Integrated Product Team, Eglin AFB, Fla.

SSgt. James R. Andrews Jr.

USAF Force Protection Battlelab, Lackland AFB, Tex.

30th Operations Group, Vandenberg AFB, Calif.

55th Fighter Squadron, Shaw AFB, S.C.

86th Air Mobility Squadron, Ramstein AB, Germany

374th Operations Group, Yokota AB, Japan

660th Aircraft Generation Squadron, Travis AFB, Calif.

Achievement

Work on National Military Command Center's communications and audiovisual systems improved worldwide strategic command-and-control capability for National Command Authority.

Envisioned, wrote, and published in September 2000 *Spacepower for a New Millennium: Space and US National Security*.

Delivered 1,300 GBU-15 adverse weather precision munitions ahead of schedule and within budget to replenish inventory sharply reduced by Operation Allied Force.

Led development of numerous modifications and improvements to aircraft refueling equipment, thereby saving dollars and enhancing operations.

Provided force protection innovations in blast mitigation, chemical-biological detection, command and control, and modeling and simulation.

Greatly exceeded launch rate performance standard for government and commercial spacelift operations.

Led modification of F-16CJ aircraft for Joint Standoff Weapon capability, working with contractor to write and test technical data and with evaluators to operationally test system.

In a series of operations, spearheaded missions involving military forces of Croatia and Poland, as well as a major humanitarian relief mission to Mozambique.

Transformed Western Pacific theater airlift with initiatives that increased mission readiness and generated savings of more than \$3.5 million.

Performed superior aircraft maintenance during multiple, simultaneous contingency operations and maintenance recovery missions.

Professional, Civilian, and Educational Awards

Award

Gen. Billy Mitchell Award for C⁴ Excellence
 Paul W. Myers Award for Physicians
 Verne Orr Award for Human Resources
 Juanita Redmond Award for Nursing
 Stuart R. Reichart Award for Lawyers
 Personnel Manager of the Year
 Civilian Wage Employee of the Year
 Civilian Program Specialist of the Year
 Civilian Program Manager of the Year
 Civilian Senior Manager of the Year
 AFROTC Cadet of the Year
 CAP Aerospace Education Cadet of the Year
 Joan Orr Award for Air Force Spouse of the Year
 Christa McAuliffe Memorial Award for Teachers
 Sam E. Keith Jr. Aerospace Education Award of Excellence
 George D. Hardy Memorial Award
 Jimmy Stewart Aerospace Education Award

Recipient

Capt. Robert E. Anderson, RAF Mildenhall, UK
Lt. Col. Adin Tyler Putnam II, Bolling AFB, D.C.
51st Fighter Wing, Osan AB, South Korea
Capt. Denise J. Roberts, Lackland AFB, Tex.
Col. David G. Ehrhart, Wright-Patterson AFB, Ohio
Capt. John R. Murray, Barksdale AFB, La.
Hugh A. Brooks, Eglin AFB, Fla.
Jennifer A. Huff Fletcher, Elmendorf AFB, Alaska
Vincent C. Fonner, Randolph AFB, Tex.
Douglas R. Hamel, Hill AFB, Utah
Geoffrey A. Anderson, Duke University, Durham, N.C.
Seth A. Evans, Sandy Hook, Ky.
Lorisa S. Pinder, Los Angeles AFB, Calif.
Christy L. Garvin, Powder Springs, Ga.
Carl Vinson Memorial Chapter, Ga.
Emil M. Friedauer, Hurlburt Chapter, Fla.
LA-932 Unit, Destrehan High School, Destrehan, La.

Management and Environmental Achievement Awards

Award

AFMC Executive Management Award
 AFMC Middle Management Award
 AFMC Junior Management Award
 Gen. Edwin W. Rawlings Award for Environmental Excellence (Management)
 Gen. Edwin W. Rawlings Award for Environmental Excellence (Technical)

Recipient

Col. Tad A. Stanley, Wright-Patterson AFB, Ohio
John H. Depew, Robins AFB, Ga.
Capt. Robert L. Charlesworth, Wright-Patterson AFB, Ohio
Lt. Col. John L. Putnam, USAF Academy, Colo.
SSgt. Joseph M. Moody, Pope AFB, N.C.

AFA Member of the Year

Charles H. Church Jr., Kan.



Arthur C. Storz Sr. Membership Awards

Chapter Award

Capt. William J. Henderson, Wis.

Individual Award

Richard A. Ortega, Fla.

Jack Gross Award

Small Chapter

Brig. Gen. Pete Everest, W.Va.

Medium Chapter

Capt. William J. Henderson, Wis.

Large Chapter

Enid, Okla.

Extra Large Chapter

Bob Hope, Calif.

Chapter Larger Than 1,500

Carl Vinson Memorial, Ga.

Special Recognition—Sustained New Member Recruitment

- Altus, Okla.
- Bakersfield, Calif.
- Bob Hope, Calif.
- Brig. Gen. Pete Everest, W.Va.
- Capt. William J. Henderson, Wis.
- Carl Vinson Memorial, Ga.
- Central Florida, Fla.
- Charlemagne, Germany
- Chautauqua, N.Y.
- Cochise, Ariz.
- Contrails, Kan.
- Earl D. Clark Jr., Mo.
- Enid, Okla.
- Fort Wayne, Ind.
- Francis S. Gabreski, N.Y.
- Gen. Robert E. Huyser, Colo.
- Gold Coast, Fla.
- Golden Triangle, Miss.
- Iron Gate, N.Y.
- John W. DeMilly Jr., Fla.
- Lance P. Sijan, Colo.
- L.D. Bell—Niagara Frontier, N.Y.
- Lindbergh/Sikorsky, Conn.
- Lloyd R. Leavitt Jr., Mich.
- Long's Peak, Colo.
- Lt. Col. Philip Colman, Ga.
- Mel Harmon, Colo.
- Mercer County, N.J.
- Miss Veedol, Japan
- Mount Clemens, Mich.
- Northeast Texas, Tex.
- Northern Utah, Utah
- Panhandle AFA, Tex.
- Paul Revere, Mass.
- Red River Valley, N.D.
- Sal Capriglione, N.J.
- Swamp Fox, S.C.
- William A. Jones III, Va.

D.W. Steele Sr. Memorial Award

(AFA Unit of the Year)
Lance P. Sijan, Colo.

AFA Staff Member of the Year

A donation from Jack Gross, national director emeritus, enables AFA to honor staff members each quarter. Those members become eligible for AFA Staff Member of the Year.

- 1992 Doreatha Major
- 1993 Jancy Bell
- 1994 Gilbert Burgess
- 1995 David Huynh
- 1996 Sherry Coombs
- 1997 Katherine DuGarm
- 1998 Suzann Chapman
- 1999 Frances McKenney
- 2000 Ed Cook



2001 AFA Membership and Activity Awards

Unit Activity Awards

Outstanding State Organization

Florida

Outstanding Small Chapter

Thomas Watson Sr. Memorial, N.Y.

Outstanding Medium Chapter

Fort Wayne, Ind.

Outstanding Large Chapter

Gen. B.A. Schriever Los Angeles, Calif.

Exceptional Service—Best Single Program

Eglin, Fla.

Exceptional Service—Communications

Gen. David C. Jones, N.D.

Exceptional Service—Community Partners

Enid, Okla.

Exceptional Service—Overall Programming

Nation's Capital, D.C.

Exceptional Service—Veterans' Affairs

Paul Revere, Mass.

Exceptional Service—Community Relations

Carl Vinson Memorial, Ga.

Special Citation

Tennessee Ernie Ford, Calif.

Community Partner Membership Awards

Gold Award

Altus, Okla.

Ark-La-Tex, La.

Cape Canaveral, Fla.

Carl Vinson Memorial, Ga.

Cochise, Ariz.

Col. H.M. "Bud" West, Fla.

Contrails, Kan.

Diamond State, Del.

Eagle, Pa.

Enid, Okla.

Fairbanks Midnight Sun, Alaska

Fort Wayne, Ind.

Francis S. Gabreski, N.Y.

Gen. B.A. Schriever Los Angeles, Calif.

Gen. David C. Jones, N.D.

Happy Hooligan, N.D.

High Desert, Calif.

Hurlburt, Fla.

Lance P. Sijan, Colo.

Leigh Wade, Va.

Llano Estacado, N.M.

Lloyd R. Leavitt Jr., Mich.

Montgomery, Ala.

Northeast Texas, Tex.

Panhandle AFA, Tex.

Richard D. Kislung, Iowa

Richard S. Reid, Ariz.

Robert H. Goddard, Calif.

Steel Valley, Ohio

Swamp Fox, S.C.

Wright Memorial, Ohio

Achievement Award

Alamo, Tex.

Anchorage, Alaska

Bob Hope, Calif.

C. Farinha Gold Rush, Calif.

Cape Fear, N.C.

Capt. William J. Henderson, Wis.

Cheyenne Cowboy, Wyo.

Concho, Tex.

David J. Price/Beale, Calif.

Delaware Galaxy, Del.

Del Rio, Tex.

Earl D. Clark Jr., Mo.

Gen. Charles L. Donnelly Jr., Tex.

Harry S. Truman, Mo.

Highpoint, N.J.

Joe Walker—Mon Valley, Pa.

John W. DeMilly Jr., Fla.

Langley, Va.

Long's Peak, Colo.

Maj. Gen. Oris B. Johnson, La.

McChord AFB, Wash.

Mel Harmon, Colo.

Mercer County, N.J.

Palm Springs, Calif.

Pope, N.C.

Total Force, Pa.

Ute—Rocky Mountain, Utah

William A. Jones III, Va.



Named in Memorial Tribute

Deaths during the past year that were to be formally recognized at the convention

Shirley Airey

Lt. Col. Steven L. Bartalsky, USAF (Ret.)

CW4 Guy J. Battiste, USA (Ret.)

William A. Bingham Jr.

Maj. Gen. Dan F. Callahan, USAF (Ret.)

H. Denise Camejo

Capt. Mel Carnahan, USAF (Ret.)

Lathan H. Collins II

Lt. Col. R.H. Crockford Jr., USAF (Ret.)

Lt. Col. Floyd F. Damman, USAF (Ret.)

Maj. Tom Dessert

Gen. Gabriel Poillon Disosway, USAF (Ret.)

Lt. Col. Charles H. Drummond Jr., USAF (Ret.)

Maj. Gen. Richard W. Evans

Robert W. Goss

Brig. Gen. Everett W. Holstrom, USAF (Ret.)

Michael R. Keefe

Brig. Gen. Richard A. Knoblock, USAF (Ret.)

Lt. Col. Thomas L. Leivesley Jr., USAF (Ret.)

Sgt. John L. Levitow, USAF (Ret.)

Mrs. Kathryn M. Manning

Maj. Paul G. Markgraf, USAF (Ret.)

Lt. Col. L. Maximciuc, USAF (Ret.)

Mrs. Frances Mazer

Lt. Col. Edward J. Monaghan, USAF (Ret.)

Mrs. Rebecca Spaatz Nagel

Lt. Col. Harold A. Oien, USAF (Ret.)

Brig. Gen. Wesley W. Posvar, USAF (Ret.)

Bill Powell

Lt. Col. Lowell D. Pyle, USAF (Ret.)

William Ramsey

Col. E.L. Robbins, USAF (Ret.)

Maj. Edward M. Ryan Sr., USAF (Ret.)

Maj. Dermont D. Saunders, USAF (Ret.)

Monte Ramon Selanders

US Rep. (Va.) Norman Sisisxy

US Rep. (S.C.) Floyd Spence

J. Deane Sterrett

Maj. Joseph F. Strofance, USAF (Ret.)

Col. James F. Sunderman, USAF (Ret.)

Col. George J. Thorn, USAF (Ret.)

Brig. Gen. James M. Trail, USAF (Ret.)

Brig. Gen. Philip Tukey, USAF (Ret.)

Lt. Col. Francis Tunstall, USAF (Ret.)

Gen. Horace Wade, USAF (Ret.)

Col. Allan G. White, USAF (Ret.)

Individual Activity Awards

Presidential Citation

Boyd Anderson, Utah
Roy Boudreaux, Fla.
Edward W. Garland, Tex.
Raymond Hamman, Pa.
Harold F. Henneke, Ind.
Victoria W. Hunnicutt, Ga.
Fred Rosenfelder, Wash.
Don Schwartz, Nev.
Joan Sell, Colo.
Glen E. Thompson, Va.

Central East Region

Medal of Merit

George J. Apostle II, Md.
Rick Beaman*, D.C.
Duncan W. Campbell, Va.
George DeFilippi, Va.
Capt. Dexter Harrison*, Va.
Henry M. Hobgood, Va.
John J. Kotzun, Del.
Linda S. Lerner, Va.
Maritza LoGrasso, Del.
M/G Michael C. McMahan*, D.C.
Col. Robert B. Newman Jr. *, Va.
Capt. Gloria Porter*, Va.
Kenneth R. Reynolds, Va.
Shirley C. Williams*, D.C.

Exceptional Service Award

CMSAF Jim Finch*, D.C.
Patrick K. Garvey, Va.
James R. Lauducci, Va.
CMSgt. Troy McIntosh*, D.C.
Tofie M. Owen, D.C.
James SeEVERS*, Va.
Thomas F. Veltri, Va.

Far West Region

Medal of Merit

Clinton W. Andraesen, Calif.
Wesley A. Ballenger, Calif.
G. Wesley Clark, Calif.
William E. Fraser, Calif.
Edwin W. Lewis Jr., Calif.
John Powell, Calif.
Don K. Tomajan, Calif.
Deborah Westphal, Calif.

Exceptional Service Award

Eugene W. Grimm, Calif.
Robert H. Krumpe, Calif.
Kathleen L. Landis, Calif.
Robert K. Marohn, Calif.
Brian P. McLaughlin, Calif.

Special Citation

Eugene L. Tattini, Calif.

Florida Region

Medal of Merit

Parascho "Pete" Ballas, Fla.
Marion F. "Buck" Caruthers, Fla.
Hugh L. Cox, Fla.
Leon E. Hess, Fla.
Ron Hoelzer, Fla.

Robert Perry, Fla.
Sandra S. Wood, Fla.

Exceptional Service Award

John T. Brock, Fla.
Emil M. Friedauer, Fla.
Bruce E. Marshall, Fla.
Loyal L. Weaver, Fla.

Great Lakes Region

Medal of Merit

Betty L. Cook, Ohio
B/G Paul R. Cooper*, Ohio
Jon Dayton, Mich.
William E. Jones, Ind.
Daniel V. Kill, Mich.
George W. Simons, Ohio
Christine Spivey, Ohio
Edward Tonini, Ky.

Exceptional Service Award

Tom Hissem, Ind.
James W. Rau, Mich.
Charles B. Spencer, Ohio

Midwest Region

Medal of Merit

Eunice L. Bailey, Ill.
Judith K. Church, Mo.
Michael J. Cook, Neb.
Jerome E. Hughes, Mo.
Daniel E. Lake, Neb.
Florence Murphy, Mo.
Dorene N. Sherman, Neb.

Exceptional Service Award

William H. Ernst, Neb.
Frank Gustine, Ill.
David R. Wolfe, Neb.
Gary M. Young Sr., Mo.

New England Region

Medal of Merit

Fred J. Blackstone, Vt.
Richard Codling, Mass.
Gene Eardensohn, Vt.
Richard P. Ebersbach, Vt.
Pauline French, Mass.
Jeffrey W. Hallahan, Mass.
Lee H. Hughes, Mass.
John W. Meehan, N.H.
Wayne R. Mrozinski, R.I.
Patricia Nicholson, Conn.

Exceptional Service Award

Winston S. Gaskins, Mass.
Terry K. Hardy, N.H.

Special Citation

Eugene M. D'Andrea, R.I.

North Central Region

Medal of Merit

Reynold Erickson, Minn.
Richard Giesler, Minn.
Troy Krabbenhoft, N.D.
April M. Krauth, N.D.

Steven R. Winegarden, Minn.

Exceptional Service Award

Gary H. Olson, N.D.

Northeast Region

Medal of Merit

Thomas G. Baker, Pa.
Howard Bueschel, N.J.
Marianne G. Fairlie, N.J.
Louis F. Foreback, Pa.
James M. Kirkstadt, Pa.
John L. Knapp, Pa.
Al Parise, N.Y.
Chris Patti, N.Y.
Timothy G. Vaughan, N.Y.
Raymond Wienk, N.Y.

Exceptional Service Award

Robert C. Bienvenue, N.Y.
Maxine Donnelly, N.Y.
Ethel Mattson, N.J.

Northwest Region

Medal of Merit

Mildred J. Chambers, Ore.
John H. Cloe, Alaska
Jack K. Gamble, Wash.
O. Thomas Hansen, Wash.
Charles E. Latimer, Wash.
Richard G. Oelkers, Ore.

Exceptional Service Award

Steven R. Lundgren, Alaska

Rocky Mountain Region

Medal of Merit

Dennis Guymon, Utah
Ted Kerr, Colo.
Wycliffe McFarlane, Utah
Brad Sutton, Utah

Exceptional Service Award

Ryan Frazier, Utah
Ted Helsten, Utah
Grant W. Hicinbothem, Utah

South Central Region

Medal of Merit

William R. Bean, Ala.
Lees Broome, La.
Col. Brian King*, Ala.
Jim Ridling, Ala.
Col. Charles B. Sherburne*, Ala.
Brian K. Sims, Tenn.
Gerald E. Smith, Miss.
Dwain E. Stephens, Miss.
Charles D. Wilkinson, Miss.

Exceptional Service Award

Rod Payne, Ala.

Southeast Region

Medal of Merit

Arthur D. Bosshart, Ga.
Tillman R. Meetze, S.C.

Daniel B. Mitchell, N.C.
Richard L. Parker, Ga.
George Silver, N.C.
Thomas J. Stark, Ga.
Roy P. Vice, N.C.

Exceptional Service Award

James L. Mulligan, N.C.

Southwest Region

Medal of Merit

Don Bacon, Ariz.
Kathleen D. Clemence, Nev.
Donna M. Coleman, Ariz.
Bailey M. Crawford, Ariz.
Ardell Galbreth, Nev.
Gary R. Lester, Ariz.
Peter D. Robinson, N.M.
Joseph V. Traina, N.M.

Exceptional Service Award

Harry H. Bailey, Ariz.
Angelo DiGiovanni, Ariz.
Hector F. Evans Jr., Ariz.

Texoma Region

Medal of Merit

Gary Beach, Okla.
Robert A. Beers, Okla.
William P. Bowden, Okla.
Douglas W. Chown, Okla.
Tom Clark, Okla.
Michael G. Cooper, Okla.
Terence G. Dundas, Tex.
Donald L. Johnson, Okla.
Brenda Null, Tex.
George C. Pankonin, Okla.
Tom Peterson, Tex.
Robert R. Reid Jr., Tex.

Exceptional Service Award

Robert C. Griffiths, Okla.
Sheila K. Jones, Okla.
Seth J. McKee III, Tex.
Robert H. Ottman, Okla.
James H. Powell, Tex.
Jim Youngson, Tex.

Europe

Exceptional Service Award

Frank M. Swords, Germany

Pacific

Medal of Merit

Steven W. Herman, Japan
Gary L. McClain, Japan

*Recognized by Awards Committee for significant achievement as members of AFA Advisory Councils or as Presidential Advisors.

The Outstanding Airmen

By Tamar A. Mehuron, Associate Editor

SSgt. Dennis L. Alexander. Armament Systems Journeyman, 36th Fighter Sq., Osan AB, South Korea (Pacific Air Forces)—Exceptional technical abilities and inspired leadership. ... Impeccable maintenance technician. ... Sustained F-16CG/DG fleet in superb war-ready condition. ... Boosted combat capability. ... Maintained highest aircraft utilization rate of all USAF F-16 units. ... Minimized aircraft downtime. ... Ensured unit's near perfect maintenance schedule effectiveness rate. (Alexander is center in photo.)



MSgt. Maria D. Cornelia. Section Supervisor, 320th Training Sq., Lackland AFB, Tex. (Air Education and Training Command)—No. 1 of 1,500 NCOs in 37th Training Wing. ... Consummate professional. ... Very best section supervisor. ... Unparalleled mentoring abilities—instructors she trains achieve highest ratings. ... Motivates others to surpass standards. ... Masterful performance as unit training manager. ... Remarkable teaching abilities—her trainees consistently scored better on end-of-course test.

TSgt. Myrna L.S. Cornelson. Airborne Cryptologic Linguist, 97th Intelligence Sq., Offutt AFB, Neb. (Air Force Reserve Command)—Volunteered to fill two active duty slots on deployments to Saudi Arabia—88 days. ... Flew 27 combat support missions on Rivet Joint electronic intelligence aircraft. ... Resolved joint interoperability issues with Marine EA-6B squadron. ... Coordinated with Airborne Warning and Control Aircraft to resolve network interference problems. ... Requested by name to develop a formal process for advanced technical training for Rivet Joint reservists. ... Selected as Air Intelligence Agency's IMA NCO of the year.



The Air Force Outstanding Airman award is an annual program that recognizes 12 outstanding enlisted personnel for superior leadership, job performance, community involvement, and personal achievements.

The program was initiated at the Air Force Association's 10th annual National Convention, held in New Orleans in 1956.

The Chief Master Sergeant of the Air Force and the command chief master sergeants from each USAF major command form the selection board. The selections are reviewed by the Air Force Chief of Staff.

The 12 selectees are awarded the Outstanding Airman ribbon with the bronze service star device and wear the Outstanding Airman badge for one year.



SSgt. James J. Delo Jr. Structures Contingency Instructor, Det. 1, 823rd RED HORSE Sq., Tyndall AFB, Fla. (Air Combat Command)—Recognized as one of only nine USAF experts in rapid runway repair. ... Implemented design and construction of a new bare base sheltering system for more realistic training. ... Selected as technical advisor to develop an interactive CD to train civil engineers for the AEF contingency mission. ... Led intense eight-day officer field education course—"best week of training [they've] ever received." ... Repeatedly called to brief senior officers on structural contingency concept of operations for Air University courses.

SSgt. Gregory W. Fry. Cryptologic Linguist, 694th Intelligence Group, Ft. Meade, Md. (Air Intelligence Agency)—Operational leader of a 16-member joint service team. ... Developed intelligence strategies using commercially available software that will apply throughout the Intelligence Community. ... Helped develop new intelligence collection hardware technologies. ... Took analytic lead in the exploitation of worldwide information systems for a large cross section of intelligence customers. ... Integrated new intelligence processing and reporting techniques at two national-level agencies. ... Spearheaded development of a new database, created a model, and implemented a hallmark reporting mechanism.



TSgt. Ronald A. Gisel. Ceremonial Guardsman, USAF Honor Guard, Bolling AFB, D.C. (11th Wing)—Led newly formed element to address training issues, creating model training proficiency roster and standard-setting continuity guide. ... Developed a detailed qualification tracking program for his element. ... On-the-job-training guru. ... Chosen to head the training of local high school JROTC cadets in marching drill procedures. ... Created impressive entrance sequence for the 50th anniversary of the Korean War memorial ceremony, for a live television broadcast. ... No. 1 representative for USAF high profile ceremonies.



TSgt. Monica M. Hill. NCOIC, Clinical Laboratory Services, 7th Medical Support Sq., Dyess AFB, Tex. (Air Combat Command)—Had vital role in lab's full accreditation with the College of American Pathologists. ... Streamlined lab's quality control procedures to save time and money. ... Restructured several chemistry panels, enhancing usefulness of the test data for doctors. ... Designed an enlisted career development course-tracking sheet and implemented pretests—scores skyrocketed. ... Revamped lab proficiency testing program, dramatically improving performance and saving money.



SSgt. Tien N. Ho. Security Craftsman, 92nd Security Forces Sq., Fairchild AFB, Wash. (Air Mobility Command)—Developed and implemented Fairchild's two-week Phoenix Raven apprentice course to support increased requirements—first in AMC to meet goal. ... Established Fairchild's first close combat defense course. ... Picked for wing's tactical operations team and coordinated with civilian law enforcement officials for base open house. ... Provided aircraft and personnel security for FBI special agents in Kosovo studying mass grave sites. ... Selected to provide security for two orientation trips for new general officers. ... Led and supported various Raven teams deployed around the world.

MSgt. D. Dexter Lesieur. Flight Chief, Airman Leadership School, Kelly AFB, Tex. (Air Force Materiel Command)—Lobbied senior commanders to use Kelly Airman Leadership School as an interim training facility for students from Brooks, Kelly, and Lackland—eased Air Force-wide NCO Academy classroom shortage. ... Selected by command to write procedural guidance and information for use by ALS flight chiefs in running their schools. ... Mentored several new intercommand ALS flight chiefs and junior intracommand ALS instructors. ... Despite impending closure of Kelly, arranged to host the command ALS conference—hailed as best to date. (Lesieur is center in photo.)





TSgt. John A. Maldonado II. Chief, Ground Radio Maintenance, 603rd Air Control Sq., Aviano AB, Italy (US Air Forces in Europe)—Guided most innovative and fastest deploying work center, improving initial communications setup with each successive deployment. ... During a NATO exercise, supervised installation of special air-to-ground radio and antenna that enabled first-time radio communication for aircraft from 11 countries. ... Handpicked to attend European Command communications satellite work group—broke through service interoperability problems. ... Devised innovative antenna configuration for HF radio signal to enhance range between AWACS aircraft and ground-based units.

SSgt. Brandon R. Pearce. Aircraft Hydraulic Systems Journeyman, 146th Maintenance Sq., Channel Islands ANG, Calif. (Air National Guard)—Streamlined overhaul procedures for wheel brake assembly for the C-130E. ... Designed improved tool kits for hydraulic shop maintenance staff, preventing tool loss. ... Revised the hydraulic fluid recovery program, limiting loss and enhancing environmental protection. ... Recognized as key member of the fast action response team. ... Demonstrated outstanding technical and organizational skills. ... Superior performance time and again added to unit's top aircraft reliability rate.



SSgt. Jason R. Raether. Missile and Space Facilities Journeyman, 341st Logistic Support Sq., Malmstrom AFB, Mont. (Air Force Space Command)—Key to best alert rate in ICBM history. ... Led replacement of old launch facility emergency storage batteries—first milestone in Air Force 2020 ICBM sustainment program. ... Trained competitors who earned the Best PREL Team award at AFSPC's Guardian Challenge 2000. ... Technical guru, routinely repairing equipment and vehicle problems that vexed more senior technicians. ... Find-and-fix maintenance philosophy produced high in-commission rate on special purpose vehicles needed to transit the wing's 23,500-square-mile "flight line." (Raether is at right in photo.)



The Air Force has pursued this concept for the past 40 years.

Is the Spaceplane Dead?

By Rebecca Grant

A SPACEPLANE has been part of the Air Force's long-range vision for more than 40 years. Advocates say a reusable spaceplane could cut launch costs from \$10,000 per pound of cargo to \$1,000 per pound and give the Air Force much greater flexibility in access to space, whether for maintaining satellites or performing other missions.

It would also provide the ultimate counter to any adversary's anti-access strategies: a spaceplane that can fly at Mach 25, reach orbit, and return to Earth would be virtually impossible to stop before reaching its objective.

But today, there is no single "spaceplane" on the drawing boards. Several experimental vehicles are seeking to demonstrate the technologies needed for a spaceplane. A December 2000 report from the Air Force's Scientific Advisory Board laid it out: "If the Air Force vision of 'controlling and exploiting the full aerospace continuum' is to become reality, the Air Force needs a comprehensive plan for hypersonics."

Yet the Air Force has been stymied in its efforts to get Washington behind a stated requirement for a spaceplane or to fund the extensive research that is still needed to make the concept a reality. The recent demise of the X-33 spaceplane project signaled that once again, the technology hurdle is high and the gap between dollars and rhetoric is deep.

Ideas for a spaceplane date back to German research on rocketry before World War II. In the Air Force, a reusable spaceplane has long been part of the vision for full control and exploitation of air and space.

Schriever's Vision

In 1962, Gen. Bernard A. Schriever described a set of requirements for space capabilities that included the ability to orbit, maneuver, rendezvous, de-orbit, re-enter, and land on a routine basis. Today, USAF is still at least a decade away from acquiring a reusable spaceplane that can do the jobs Schriever described.

Technology hurdles remain at the heart of the issue. Hypersonic flight—defined as flying faster than Mach 5—began to tantalize aerospace engineers in the 1950s. One early success was the North American X-15, tested at speeds up to Mach 6.7 in the 1960s. But for the most part, programs dealing in hypersonics and reusable spaceflight made only limited progress. One such was the Boeing X-20 Dyna-Soar, a boost-glide vehicle designed to become a manned, orbital plane. The Air Force funded it in 1957, but Secretary of Defense Robert S. McNamara canceled the X-20 in 1963, and Phase 1 of the hypersonic spaceplane era was over.

Dyna-Soar and other programs contributed to the manned space shuttle program. NASA's space shuttle first flew in April 1981 and





The quest for hypersonics and reusable spaceflight led in 1957 to the Dyna-Soar X-20. It was designed to be a manned orbital craft and did contribute to the space shuttle program but was canceled in 1963. (Artist's concept)

has logged more than 100 successful missions, sometimes flying on a monthly basis. Still, the shuttle's need for expendable tanks to help it reach orbit and the continued high cost of each launch differed from the concept of a true spaceplane. Better access to space continued to be a driving issue.

In 1986, President Reagan reinvigorated the idea of an airplane-like transatmospheric spaceplane. In 1986, he called for "a new Orient Express" that could, by the end of the 1990s, "take off from Dulles Airport and accelerate up to 25 times the speed of sound." In Reagan's concept the transatmospheric plane could attain low Earth orbit or stay in the atmosphere, "flying to Tokyo within two hours."

Behind Reagan's sensational announcement was hope for a technological breakthrough in the field of hypersonics. Research from a Defense Advanced Research Projects Agency-funded secret program called Copper Canyon suggested that active thermal management could boost the power of a scramjet engine. Instead of succumbing to a heat barrier around Mach 8, the friction from the atmospheric drag would be used as part of a system to superheat hydrogen fuel then inject it into a scramjet engine. Using this technique, a spaceplane might overcome the thermal drag barrier by dissipating heat, while using the energy to boost engine performance.

As a result, the National Aerospace Plane was to be a revolutionary advance: a transatmospheric craft that would provide cheaper space launch and the ability to exploit space in military operations. Plans called for NASP to fly as a single stage to low Earth orbit and to cruise at hypersonic speeds of Mach 12 to Mach 25 in the transatmosphere—between the altitudes of 100,000 to 350,000 feet.

With the advent of NASP, the spaceplane concept branched into two roles.

First, a reusable spaceplane might replace the space shuttle as a launch platform carrying heavy payloads for customers like the Strategic Defense Initiative Organization, which contributed heavily to NASP research funding. Air Force Brig. Gen. Kenneth E. Staten, NASP program manager, said in 1986 that NASP might be able to deliver payloads to orbit for "between one percent and 25 percent of the expense of doing it with the shuttle."

Second, for the Air Force, NASP could also be a lightning-fast bomber. Gen. Lawrence A. Skantze in 1985, as commander of Air Force Systems Command, said NASP might have "the speed of response of an ICBM and the flexibility and reliability of a bomber, packaged together in a plane that can scramble, get into orbit, and change orbit so [that] the Soviets can't get a reading accurate enough to shoot at it." As a satellite

truck and a strike platform, the spaceplane would be a revolutionary leap.

No "Golden Mission"

However, research on NASP stalled when it failed to meet performance goals. By the early 1990s, NASP was projected to be a decade late and 500 percent over budget. NASP was "fully capable of hypersonic flight," according to the Science Advisory Board, but could not reach orbital velocity. Advanced hypersonic technology remained out of reach. "On the basis of current knowledge, it is hard to defend previous DOD plans for NASP," concluded a RAND report in 1989. "No compelling 'golden mission' exists for NASP."

Cuts in the defense budget and the end of the Cold War sealed the fate of NASP and the program was canceled in 1994. "These are exciting ideas," said Martin Faga, assistant secretary of the Air Force for space at the time, "but they are not ready for commitment."

Even before the death of NASP, researchers were focusing on a more cautious approach that divided up the technology hurdles of hypersonic flight and reusable systems.

The next "spaceplane experimental" was an early success that raised hopes for both military and commercial applications for a spaceplane. McDonnell Douglas won a contract in 1991 to build what became the DC-X Delta Clipper. This single-stage-to-orbit vehicle grew out of an SDI requirement for a single-stage, reusable vehicle that could put Brilliant Pebbles, a component of a ballistic missile defense system, into orbit at a reasonable price. It was managed by the Air Force for SDIO, later the Ballistic Missile Defense Organization.

Although the program was handed off to NASA, the Delta Clipper stirred Air Force thinking on the possible uses of a spaceplane. The commercial potential and simplicity of the program seemed to foreshadow a new era when commercial launch demand would help fund spaceplane technologies.

The Delta Clipper was not a hypersonic scramjet spaceplane but a single-stage rocket with advanced lightweight materials and directional control. Its charter was to demonstrate the ability to take off and land vertically, using controlled, rocket-powered flight. In its full concept,

the Clipper would be a reusable vehicle that could be launched and recovered at the same site by a small ground control team. Maintenance would be streamlined, leading to lower operating and support costs that would bring about a dramatic reduction in the price of launching payloads into orbit. The subscale demonstrator and an advanced version, the DC-XA, successfully completed a series of flights in the period 1993–96, demonstrating control and maneuverability at the White Sands Missile Range in New Mexico.

Then trouble struck. During landing on July 31, 1996, a landing strut failed to extend. The Clipper tipped over and its liquid oxygen tank exploded, causing a fire that destroyed the vehicle. “Like any good experimental vehicle, the DC-XA flew until it was destroyed,” commented McDonnell Douglas. “We will always be impressed by the lessons this little rocket taught us.”

NASA’s X-Planes

During the 1990s, NASA took the lead in research on spaceplane technologies. No single program was attempting to pair single-stage launch to orbit with hypersonic transatmospheric flight. Instead, a series of X-planes sought to test various aspects of spaceplane operations, ranging from thermal material to advanced propulsion to autonomous landing under different weather conditions, but not a full-scale demonstration.

All programs shared the same philosophy: rapid development of prototypes, with no more than a few years passing between contract award and demonstration. Some, like Boeing’s X-37 and X-40, were demonstrators for a vehicle that would be ferried into orbit, operated by its own rocket engine, then would return to land on a runway. In contrast, Lockheed Martin’s X-33 was designed to take off vertically, fly a suborbital path, and then land horizontally at a US base. Orbital Sciences’ X-34 was a rocketplane designed to be launched from a jetliner, reach Mach 8, then return and land on a runway. X-43A, also from Orbital Sciences, was built to ride into the air on a B-52 bomber, separate from the bomber, then from a boost rocket, and fly a Mach 10 trajectory before crash-landing in the Pacific.

The Air Force was a junior partner in deals with NASA and aerospace industrial firms to fund these X-planes. For example, the X-37 program was financed by roughly \$75 million from Boeing, \$72 million from NASA, and just \$16 million from the Air Force.

Despite its limited financial participation, the Air Force closely watched the X-planes. X-33, in particular, looked like it could push the envelope on spaceplane design and give the Air Force a chance to evaluate suborbital space operations concepts. X-33’s linear aerospike engines were a significant evolution from the bell-shaped engines of the

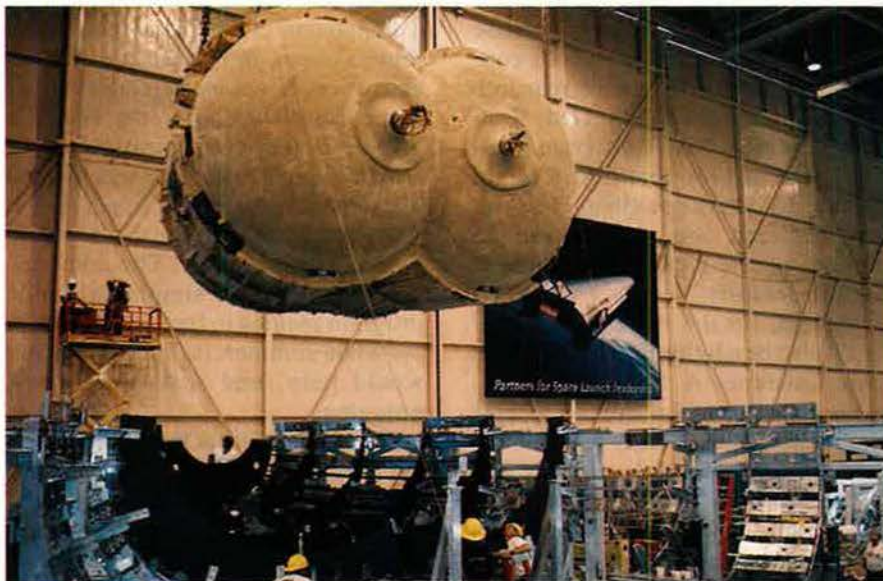
space shuttle program. The linear aerospike was designed to increase power and, more importantly, perform with maximum efficiency at a greater range of altitudes.

Test of the linear aerospike engines proceeded smoothly through a series of test runs in 2000. The aerospike engine project manager, Donald Chenevert, praised the performance of the engines, noting that “few new, much less innovative, engines even get to full power in so few tests,” but with X-33’s engines, “we met or exceeded a number of significant objectives during the first phase of the program.”

X-33’s big test was to be a series of suborbital “hops” where the demonstrator would take off, fly to another point, and land. But the hops never took place. X-33 suffered a setback in a November 1999 test, when the composite material layers of a liquid hydrogen fuel tank peeled apart during a stress test. An agreement signed in the fall of 2000 kept work going on X-33 until March 2001. However, the delays caused by the fuel tank problems slowed work on X-33, so it never picked up momentum to become a priority for NASA, where many regarded the single-stage-to-orbit concept as too difficult. NASA canceled the \$1.3 billion program in March 2001. “We are going to take off our silk scarves and retire them for a while,” said Daniel Goldin, NASA administrator, in a *Washington Post* interview.

NASA’s cancellation of X-33 set up the first major challenge for the Air Force’s decade-long practice of letting NASA take the lead in spaceplane development. The commander of Air Force Space Command, Gen. Ralph E. Eberhart, wrote to Goldin and said that the Air Force wanted to review the situation and perhaps take over support of the X-33 program. Estimates for completing the prototype X-33 ran to about \$400 million, while developing and testing a full-scale spaceplane force might cost between \$3 billion and \$7 billion by 2015.

However, Samuel L. Veneri, a top NASA technology official, told the *Washington Post*, “We’re not interested in spending any additional money out of our technology program, if it is not associated with a strong commitment from the Air Force.”



Stress tests on X-33 caused the composite layers of the liquid hydrogen fuel tank to peel apart. Here, in 1998, the first major element placed in X-33’s assembly fixture was a tank for liquid oxygen. NASA canceled X-33 in March.

For the Air Force, X-33 raised important questions. To begin with, as the SAB concluded, USAF needed a reusable spaceplane because it was “unlikely that the Air Force will ever be able to achieve an aggressive aerospace force vision by relying on [expendable launch vehicles] for its access to space.”

Indeed, spaceplane concepts had become a central part of the Air Force’s vision of its future. Long-range plans written by Air Force Space Command and by the Directorate of Strategic Planning at USAF headquarters both called for a new generation of reusable space vehicles to provide space control, including assured launch capabilities, surveillance, protection of assets in space, and the prevention of hostile operations. If necessary, space control would extend to negation: using military force against an enemy’s space capability.

Air Force plans envisaged acquisition of a Space Operating Vehicle and a Space Maneuvering Vehicle. The Space Operating Vehicle would be a single-stage-to-orbit vehicle that could launch to low Earth orbit or employ a second, pop-up stage to put payloads into medium Earth orbit or beyond. The SOV would launch vertically on demand, deliver payloads or conduct surveillance or any other type of combat support mission, and return to Earth and land horizontally. The Space Maneuvering Vehicle would be an on-orbit vehicle that might perform missions after being launched by a reusable launch vehicle or a Space Operating Vehicle. The Space Maneuvering Vehicle could act as a temporary satellite itself or maneuver to perform missions such as deploying or retrieving satellites. According to USAF officials, it would stay in orbit for four to six months, carrying anything from weapons to replacement satellites.

X-33 tested some of the technologies that might be used in a follow-on Space Operating Vehicle, and X-37 (X-40A) prototyped some of the concepts for a Space Maneuvering Vehicle.

Serious Ops ... On Demand

However, the planned X-33 demonstrations also rekindled Air Force interest in the spaceplane’s potential. Senior leaders saw in it the capability “to do serious operations in space on demand—from space control to space



The second free flight of X-40A, an 85 percent scale version of the proposed X-37, took place earlier this year at Edwards. The unmanned X-37 was to be used as a test bed for some Space Maneuvering Vehicle concepts.

operations,” said retired Lt. Gen. Marvin R. Esmond, a former deputy chief of staff for air and space operations. A suborbital craft—flying at Mach 10 or 12 instead of the full Mach 25 needed to reach orbit—could evolve into the next long-range strike aircraft. As the SAB said, “The pressing utility for a hypersonic aircraft is rapid time-to-target, the survivability provided by increased speed, some loiter and search capability, and increased weapon penetration and kill capability.”

If the X-33 suborbital hops worked, it could have demonstrated the concept of operations for a suborbital, hypersonic strike platform which would make the most of swiftness and increased survivability and perhaps replace long-range bombers. For example, a suborbital vehicle could launch rapidly, reach speeds high enough to travel to the upper edges of the atmosphere, then launch weapons, all while remaining over the sovereign territory of the United States or open oceans.

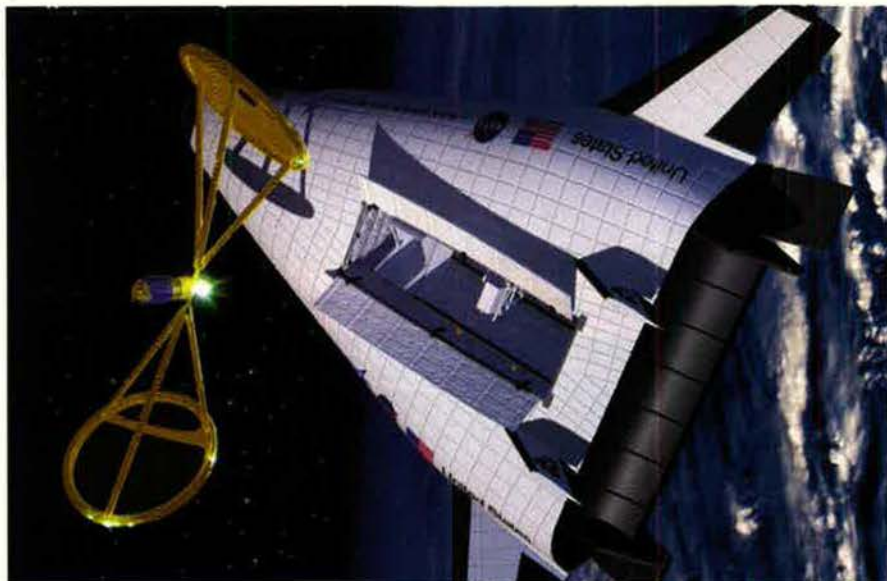
In that sense, the spaceplane would be the ultimate anti-access weapon, requiring no diplomatic overflight clearances and no serious threat of opposition. A spaceplane could travel so high and fast that it would be well beyond the tracking abilities of current surface-to-air missiles. Hypersonic velocity would increase the depth of weapons impact, enhancing the Air Force’s capabilities for attacking hardened and deeply buried targets. If con-

flict arose, the spaceplane could “send a message right from Vandenberg [Air Force Base in California] in less than an hour,” said Esmond. Compared with the B-2 bomber’s average 17-hour one-way flight time to its targets during the Kosovo crisis, a suborbital strike craft would seem to be almost instantaneous. It would transform the aerospace force.

At the end of the summer, Air Force Space Command briefed Air Force Secretary James Roche on its \$2 billion proposal to keep X-33 alive and to extend funding of Boeing’s X-37 beyond 2002. “My feeling was, it’s expensive, but you don’t know until you try,” Esmond said of X-33. “This had, to date, the best chance of success.”

However, the plan fell victim to budget constraints. “Both programs have made significant contributions toward understanding achievable vehicle performance, cost, and integration issues and have provided valuable information on the dynamics of launching space vehicles,” the Air Force said officially on Sept. 7, 2001. Neither X-33 nor X-37 provided “a level of military utility needed to continue development and funding by the Air Force.”

The X-33 decision was a surprise, not the least because it came after the Air Force had declared a renewed focus on the development of military space power. A spaceplane with responsive capabilities to replenish satellites could be the most useful



An artist's concept of Lockheed Martin's VentureStar, a single-stage-to-orbit reusable vehicle to be derived from X-33, shows the vehicle releasing a satellite into orbit. USAF's recent decision not to fund X-33 came as a surprise.

item in the inventory in the event of a "space Pearl Harbor" that takes out on-orbit systems.

Even in a less catastrophic scenario, a spaceplane seemed to offer the potential for real transformation of US forces over time. In the near term, X-33 "would have given us the vehicle behind which to have a serious discussion" on doctrinal and political aspects of joint space operations, explained Esmond. In the long term, spaceplanes serving as strike platforms could change the equation of US defense planning by making it possible to launch flexible, rapid strike missions from United States territory.

"I think it's truly the answer [for] full global reach, global power," said Esmond. A fully developed, suborbital, hypersonic spaceplane could ultimately "stand on alert and provide a deterrent force. Then you could shape the Air Force to be truly expeditionary and take care of smaller-scale contingencies," he added.

Critics contend that today's fighters and bombers can, for vastly less cost, do the job of a fleet of spaceplanes. True, the initial cost of fielding a spaceplane would be extremely high. However, revolutions do not come cheap. Total investment to date in stealth aircraft programs exceeds \$100 billion.

More to the point, said one Air Force official, is this question: "How long can we penetrate [enemy air defenses] with stealth? It won't last

for the next 50 years. Why penetrate with a bomber when the weapon could be delivered from a suborbital spacecraft?" A spaceplane could carry out immediate attack operations against targets harboring weapons of mass destruction, for example.

The Saga Continues

As illustrated by the demise of the X-33 program, the path toward a spaceplane remains difficult, and constant demands on USAF aerospace power will make it hard to find significant streams of investment needed to develop the technologies. But given its central role in the Air Force vision, the spaceplane concept is not finished yet. "With Rumsfeld, who understands space, and this Administration, which is excited about transformation and becoming more efficient, we are closer than ever," Esmond said.

The choice about when to push hard for a reusable, hypersonic spaceplane cannot be put off indefinitely.

"As with air operations, the Air Force must take steps to create a culture within the service dedicated to developing new space system concepts, doctrine, and operational capabilities," said the Rumsfeld Space Commission Report in January 2001.

Rebecca Grant is president of IRIS Independent Research in Washington, D.C., 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, "Altitude," appeared in the October 2001 issue.

The Air Force's Scientific Advisory Board concluded in its December 2000 report that the demand for reusable space access would grow as USAF became "a true aerospace force."

Even so, the bulk of the technicians who have experience in hypersonic experimentation—not just theory—is aging rapidly. According to the Scientific Advisory Board, "The hypersonics workforce is at a crossroads," and "the majority of its members will retire in the next five to 10 years." Foreign competition may also emerge. Russia, China, France, India, Germany, and several other nations are working diligently on hypersonics. In fact, the Air Force Research Lab, headquartered at Wright-Patterson AFB, Ohio, and its Office of Scientific Research in Arlington, Va., have funded joint research with Russian agencies. If their research bears fruit, the United States could find itself behind the pack and on the wrong side of an asymmetric capability.


Most of all, the spaceplane remains a good fulfillment of long-term Air Force requirements. Expendable launch vehicles will not meet future demand for space access. Even a suborbital spaceplane could also serve the demands of expeditionary operations and homeland security more efficiently in several roles. According to the SAB, reusable launch vehicles like the X-33 concept "offer immense potential to meet all the requirements of the future US aerospace force." Combining hypersonics and a reliable, reusable platform is the path to dramatic improvement in the Air Force's core competencies.

With a suborbital hypersonic craft or one that can reach orbit, USAF would gain a rapid-response capability of phenomenal power, free of much of the infrastructure needed for expeditionary warfare. To be sure, an Air Force base would have to be heavily modified with a new ground support structure to accommodate spaceplanes, but the asymmetric capabilities of a spaceplane would trump all remnants of 20th century warfare. ■



NAVIGATING THE FUTURE DEPENDS ON A RELIABLE CONSTANT.

For 25 years, Boeing has been as reliable and constant a partner to our USAF customer as the 40 GPS satellites we've built. Designed to last an average of 6 years, these satellites are still going strong after 10 years on orbit. Performance beyond expectation is also why our role was expanded to include upgrading and managing the ground control system. Now, we're looking to the future and the next generation system, GPS III. Designed to be more capable and less expensive to own and operate for both government and civil application, GPS III is more than just a goal, it's a future you can count on.

A photograph of two F-15E Strike Eagles in flight. The aircraft are dark grey or black. The sky is a deep blue with scattered white clouds. The aircraft in the foreground is shown from a low angle, highlighting its nose and cockpit. The second aircraft is partially visible in the upper right corner, showing its nose and wing. The overall composition is dynamic and emphasizes the power of the fighter jets.

Two F-15E Strike Eagles from the 494th Fighter Squadron, known as the "Black Panthers," fly in the airspace over Britain.

They have seen action in a variety of hot spots.

Panthers Over Europe

Photography by Erik Hildebrandt



The black panther on the emblem adorning the 494th Fighter Squadron building at RAF Lakenheath, UK, has been updated from the unit's World War II days when a black panther stretched across a bomb. This one with its ferocious, about-to-strike pose mirrors the unit's current precision strike, air-to-ground mission employing the F-15E Strike Eagle.



Photos by Erik Hildebrandt



Above, 494th crews prepare for the day's flying. At left, a row of F-15Es.

The 494th is one of two F-15E units under Lakenheath's 48th Fighter Wing, known as the "Liberty Wing," a designation officially recognized in 1954. The other F-15E unit is the 492nd Fighter Squadron. A third 48th flying unit, the 493rd Fighter Squadron, flies the F-15C.

As the only F-15 wing in US Air Forces in Europe, the 48th provides both air-to-air and air-to-ground capability with its complementary F-15s.

At right, a 494th F-15E screams down the runway.





The Black Panther F-15Es are in high demand. Just two weeks after helping patrol over northern Iraq, the 494th took part in Operation Allied Force. The Panthers dropped 38 percent of all the precision guided munitions delivered during the operation. They flew more than 4,000 combat hours largely due to the heroic efforts of their maintenance crews. Even though shorthanded, the maintainers achieved a 99.4 percent mission launch rate.

At top, two Strike Eagles fly over the UK, while in the inset photo, an Eagle sits in front of a Cold War-era hardened aircraft shelter. At right, 494th maintenance crews.

The 494th was activated as the 57th Bombardment Squadron (Light) in 1941 and assigned to the 48th Bombardment Group. In August 1943 it was redesignated the 494th Fighter-Bomber Squadron, still under the 48th. The unit first came to the UK in 1944. Over the years the Panthers flew a number of aircraft including the P-39, P-40, P-47, and following a seven-year deactivation, the F-84G, F-86F, F-100D, F-4D, and F-111F.

In 1986, 494th F-111Fs headed out for Operation El Dorado Canyon—strikes against Tripoli for Libyan-incited terrorist attacks on US citizens.

At right, a park highlights aircraft—an F-15, F-111, and a British Spitfire—that have been a part of Lakenheath's history.



Photos by Erik Hildebrandt



Near Lakenheath is the American Air Museum in Britain at Duxford. The museum's theme is the role of US forces in Britain during World War II.

At left is a restored World War II control tower located at the Duxford Airfield.

Below, adding more flavor to the area around the Black Panther's home is a Cambridge pub—located 25 miles from Lakenheath. It was well-known to World War II bomber and fighter crews, both American and British. Before a mission, crews used smoke from candles to write their names on the ceiling of one of the rooms. The pub is still active.





The Black Panthers returned to the UK with the 48th Fighter Wing in 1960, when the wing set up shop at Lakenheath. From there the unit has participated in operations including El Dorado Canyon, Desert Shield and Storm, Provide Comfort, and on through to today's war on terror. It was Provide Comfort in which the Panthers first took their new F-15Es into action. They also extended their role from air-to-ground to air-to-air coverage, as they flew defense counterair and reconnaissance missions.

Above, two Black Panther F-15Es break away from each other during air-to-air training. At right, an aerial view of some hardened aircraft shelters at Lakenheath.



As ever, the 494th Black Panthers are poised to strike wherever duty calls. ■

This grim, strange, often misunderstood concept has hovered over defense policy for more than 30 years.

In the Shadow of **MAD**

By Peter Grier

DONALD G. Brennan of the Hudson Institute in New York had an intense dislike for “Assured Destruction,” the novel nuclear posture promulgated in the 1960s by Robert S. McNamara, Defense Secretary in the Kennedy Administration. And in 1969, Brennan devised a clever way to dramatize his view.

The destruction in question, Brennan noted in a *New York Times* article, would be mutual. By that, he meant neither the US nor the Soviet Union would survive an all-out atomic attack. Brennan then prefaced “Assured Destruction” with “Mutual” and renamed the strategy with an irresistible acronym—MAD.

The idea that the US and the Soviet Union should hold each other’s population hostage was indeed a mad one, insisted Brennan in writings and public appearances. Technology and politics might make MAD inevitable, for a time, he said, but the US should not be eager to perpetuate that con-

dition. Instead, US policy-makers should be looking for ways to escape it.

As he argued, “We should not deliberately create a system in which millions of innocent civilians would, by intention, be exterminated in a failure of the system.”

The man who popularized “MAD” did not live to see the end of the Cold War. However, his visceral reaction against the implications of Mutual Assured Destruction has been repeated and amplified by many others since. The Air Force never fully accepted it, and in the 1980s, denunciation of MAD also became a staple of the anti-nuclear and disarmament movements.

More recently, proponents of missile defense have insisted that defensive technologies might finally begin the process of consigning MAD to the ash heap of history. Thus President George W. Bush said in May that deployment of even limited defenses could ensure that deterrence would no longer be based solely on

the threat of all-out nuclear retaliation.

"Grim Premise"

"We must seek security based on more than the grim premise that we can destroy those who seek to destroy us," said Bush in a National Defense University speech promoting his missile defense program.

Even today, however, much discussion of MAD misses one central point: It is not the prime nuclear doctrine of the United States. For more than 30 years, increases in the size, accuracy, and sophistication of the US nuclear arsenal have reduced Mutual Assured Destruction to the status of one among many competing national strategic options.

Perhaps any exchange of warheads between nuclear powers would escalate, inevitably, to total war and obliteration of both nations. That is what McNamara fervently believes to this day.

However, the US military believes in preparing other, more flexible, strategic plans. Anything less would be an abdication of duty, says Gen. Russell E. Dougherty, a former commander in chief of the Air Force's Strategic Air Command.

"I don't think Mutual Assured Destruction was ever a military-espoused doctrine," says Dougherty.

From a force planner point of view, MAD is a minimalist approach. It requires only that the American nuclear arsenal have enough warheads after any surprise first strike to destroy any opponent's population centers and civilian industry.

The Air Force, by contrast, favors a larger and more complicated force structure capable of riding out a first strike and then retaliating against elusive, hardened military targets.

"Our philosophy has always been counterforce," says Dougherty. "Force is what hurts us. Find his force, and dis-enable it or denude it."

Moreover, MAD is a crude and reflexive revenge strategy, sufficient to punish an enemy but only after he has destroyed one's own society. It provides no tools for limiting the amount of damage an enemy could inflict.

A brief history of MAD may help explain the manner in which it is misused in today's national security debates.

Its roots are in the early 1960s.

McNamara had just taken the helm at the Pentagon, and he was not pleased at the state of US strategic thinking. The official policy of the US at the time was "massive retaliation." By that, officials meant that the US would react massively, with all the power in its atomic arsenal, to unspecified acts of Soviet aggression. A 1961 military review initiated by President Kennedy concluded that this position was neither credible nor morally satisfying.

The US should have nuclear choices other than "inglorious retreat or unlimited retaliation," as JFK put it.

"No Cities"

McNamara and his staff decided to take what had been intended as spasm nuclear response and break it up into a variety of attack options. A basic principle of the new thinking was that targeteers should avoid Soviet cities, at least in the first stages of any nuclear war. Enemy military forces were to be the primary targets.

Administration officials hoped, among other things, that this "no cities" approach would make Soviet leaders believe that any conventional attack on Western Europe might indeed trigger US nuclear retaliation. In simplistic terms, the point was to make a prospective nuclear exchange seem less like Armageddon and more like World War II, refought with more powerful weapons.

"General nuclear war should be approached in much the same way that more conventional military operations have been regarded in the past," said McNamara in a widely noted speech in Ann Arbor, Mich., in June 1962.

"No cities" was, in essence, an early form of what would later come to be known as the counterforce option, useful for the demanding task of damage limitation.

However, the Kennedy Administration quickly concluded that this was untenable as a policy. For one thing, rhetoric such as McNamara's Ann Arbor speech frightened the public. Talk of limiting nuclear war and fighting it in a manner similar to conventional battles made it seem only too likely to occur.

Perhaps more crucially, it quickly became apparent that production and maintenance of the nuclear forces necessary for a "no cities" posture

would be a very expensive and extremely contentious process.

In the wake of the Ann Arbor speech, SAC leaders asked the government to provide some 10,000 Minuteman ICBMs, noted William Kaufmann, a top McNamara aide who later became an MIT professor, in a 1996 interview. They wanted more bombers as well.

"And one of the questions McNamara kept asking me was, you know, What's the ceiling on this thing?" said Kaufmann.

So McNamara and his staff made some arbitrary assumptions in an effort to answer the question of how much nuclear force is necessary. They determined that, for national security purposes, the US needed to be able to ride out a surprise Soviet nuclear first strike and retain enough weapons to destroy 50 percent of the USSR's industrial capacity and 20 to 25 percent of its population, in retaliation. It was, in effect, a partial reincarnation of Massive Retaliation—that is, a crude strategy of "city-busting" or "countervalue" in strategic terms.

This new policy—called "Assured Destruction"—brought a dramatic lessening in the force requirement. It is far easier to target and destroy cities and car factories than to eliminate hardened missile silos or mobile weapons.

The new doctrine, thus, required a much smaller arsenal than the "no cities" approach. McNamara's staff figured it could back up the new strategy by outfitting each leg of the nation's nuclear triad—bombers, land-based missiles, and sea-based missiles—with enough warheads to deliver the equivalent of 400 megatons.

"It was a device to try to fend off the Air Force, primarily," said Kaufmann in 1996.

They thought the Assured Destruction plan would not only set budgetary limits for strategic forces but satisfy critics who said that a minimum number of weapons was all the US needed for deterrence, as opposed to the huge and complex arsenal needed for the more militarily ambitious "no cities" approach.

The "White Lie"

To some extent, however, the numbers attached to the Administration's new doctrine were plucked from thin

Coming to Terms

This is an abridged version of "Definitions of Terms," a 1976 text given as a study aid to students at Air Command and Staff College. A preface said, "The following definitions of terms should help you in understanding the [nuclear] concepts of the 1960s. Many of the terms and beliefs ... are very much alive today." Definitions of some terms have changed since 1976.

■ **First Strike:** First offensive nuclear move of a war.

■ **Pre-emptive Strike:** A strike made in defense. If strategic or tactical warning should indicate to the US that an enemy was on the verge of launching a surprise first strike, the US could steal the initiative (pre-empt) by striking first. A planned surprise first strike is not a pre-emptive strike.

■ **Second Strike:** Strike in retaliation to a surprise enemy first strike.

■ **Second Strike Weapons:** Strategic offensive nuclear weapons which are made relatively invulnerable by means of dispersal, warning systems, mobility and concealment, and hardening (silos).

■ **First Strike Weapons:** Those "soft" strategic offensive nuclear weapons which cannot survive an enemy surprise first strike and can therefore only be used for a first strike. Any strategic offensive weapon can be used in a first strike; however, if an aggressor nation has a first strike strategy, he will not likely spend the resources to harden his offensive weapons to provide second strike invulnerability. Therefore, all such "soft" nuclear systems are considered First Strike Weapons.

■ **Second Strike Capability:** A strategic offensive nuclear force structure which can survive a large scale nuclear surprise first strike in sufficient strength to retaliate in whatever manner the current strategy requires.

■ **Assured Destruction (AD) Capability:** The capability of strategic offensive forces to destroy an aggressor nation as a viable society even after surviving a surprise first strike. This capability requires second strike weapons.

■ **First Strike Capability:** A far greater strategic nuclear offensive capability than either AD or Second Strike Capability. First Strike Capability requires sufficient forces to strike first and effectively disarm the enemy—destroying his second strike retaliatory forces—thus denying the enemy his AD capability. To be credible, such first strike weapons must be of sufficient number, variety, accuracy, and yield to dig out and destroy hardened and dispersed enemy second strike weapons.

■ **Damage Limiting (DL) Capability:** Capability of defensive and strategic offensive forces to limit the effectiveness of an enemy attack through a combination of both active (warning, interceptors, SAMs, ABM, CF targeted ICBM/SLBMs, etc.) and passive (civil defense, etc.) defensive measures. The objective of such a capability is to preserve the greatest possible number of population, forces, and resources in the event of a surprise enemy First Strike. Do not confuse DL capability with DL strategy. (See p. 84.)

■ **Targeting Doctrine:** The policy established for strategic nuclear planning which outlines the desired targets for strategic offensive nuclear weapons systems. It incorporates three other concepts (terms):

Counterforce (CF): The targeting of strategic offensive forces against the military and military support capabilities of a nation with an effort to spare enemy population and general industrial resources.

Countervalue (CV): The targeting of strategic offensive forces against the industrial and population centers of a potential enemy.

Collateral Damage: Unintentional but unavoidable damage to the population or industry of a nation which occurs due to the proximity of military (CF) targets struck under a CF targeting doctrine.

■ **Deterrence:** The process whereby a nation prevents a potential enemy from carrying out aggressive intent against the victim nation or its allies. Deterrence is accomplished by threat of force and depends on three critical elements to be effective:

1. The deterring nation must possess forces of sufficient strength, targeted so as to threaten potential enemy vulnerabilities—value targets.
2. The deterring nation must have the will to use such force if required.
3. The nation being deterred must be convinced that both of the first two conditions in fact exist.

air, not developed by extensive and rigorous analysis. As Kaufmann admitted, "Assured Destruction was what I tend to think of as a white lie."

The military in general and the Air Force in particular didn't embrace the doctrine with open arms. Far from it. American officers saw the new policy as a way to rationalize spending less than required to meet the nation's most important national security need.

Nor did strategic planners ever explicitly make preparations to carry out MAD's population-targeting aspect, according to Dougherty. "We never targeted cities," he says flatly.

Collateral damage from hitting military-related targets would indeed have resulted in tens of millions of Soviet civilian casualties. However, that was due at least in part to the technologies of the time. Missiles were far less accurate than they are today. To ensure target destruction, warheads had to be correspondingly more powerful.

Thus McNamara's Assured Destruction statistical goals "may have been the end result of what we were talking about, but we never went out to destroy [Soviet society]," says Dougherty.

One particular aspect of Assured Destruction lent itself to public criticism—its implied mutuality. If the US needed to be able to destroy the USSR as a society in the name of national security, would not the leaders of the USSR require the same thing, in mirror image?

McNamara's formulation thus postulated a geopolitical suicide pact. The arms race would remain stable and nuclear war unlikely in inverse proportion to the danger to which the American people were exposed.

The 1972 ABM Treaty closed off one theoretical avenue of escape. President Nixon agreed to the pact, in the end, because he was convinced of the argument that defensive technology of the time could quickly be overwhelmed by additional offensive forces.

But successive administrations continued to modify the nation's strategic doctrines in an effort to at least mitigate some of MAD's morally troubling aspects.

Nixon, in a 1970 address to Congress, put the problem plainly: "Should a President, in the event of a nuclear attack, be left with the

single option of ordering the mass destruction of enemy civilians, in the face of the certainty that it would be followed by the mass slaughter of Americans?"

As George W. Bush would do years later, Richard Nixon ordered a strategic review of the military upon entering office. Though completed with dispatch, its nuclear recommendations were not adopted until 1974, after Nixon had been re-elected.

Schlesinger's Options

The basic concept of MAD—that the US and USSR would remain mutually vulnerable—remained unchanged. However, then-Secretary of Defense James Schlesinger resurrected McNamara's original idea of greater flexibility in nuclear plans. He moved to a partial counterforce strategy that emphasized attacks on ICBM silos and other military targets, avoided initial strikes on population centers, and attempted to minimize collateral damage.

Schlesinger felt that McNamara had simply been so repulsed by the idea of nuclear war that he had neglected to think through US nuclear policies with precision. He wanted more options, a more credible strategy, and he later said, a different mental attitude.

A few years later, the Carter Administration took up Schlesinger's ideas and refined them. Harold Brown—the first scientist to ever become Secretary of Defense and arguably the most qualified person ever to hold the position—developed what he called a "countervailing strategy." He and his staff were careful not to call it a "counterforce strategy," which implies pre-emption. However, it was self-evidently a step toward the capability to destroy the enemy's forces and thereby reduce the amount of damage to one's own nation. It was officially adopted with Carter's approval of Presidential Directive 59 on July 25, 1980.

As described by Brown, this new approach involved targeting plans for selective nuclear responses. These responses, though large, would still leave some US weapons in reserve and would attack those things Soviet leaders appeared to hold most dear—political and military control of their society, military forces, and the industrial capability to wage war.

Brown did not rule out Assured



Retired Gen. Russell Dougherty, here as commander in chief of SAC greeting James Schlesinger at Offutt AFB, Neb., says that the military never "espoused" MAD. When Schlesinger became Defense Secretary, the military began work on a strategy with more options.

Destruction targeting on urban and industrial targets. He believed, "Such destruction must not be automatic, our only choice. ... Indeed, it is at least conceivable that the mission of Assured Destruction would not have to be executed at all in the event that deterrence failed."

From the McNamara through Brown years, it was the growing number of US nuclear weapons, and their increased quality, that made possible the development of deterrence options other than pure MAD.

The increase in submarine-launched ballistic missiles, plus the refinement of multiple-warhead re-entry vehicles, allowed planners many more options when picking targets, according to Dougherty. Even less well-known is the fact that the rise in computing power through the 1970s and beyond allowed development of many more options in weapon applications.

"Early on," says Dougherty, "we couldn't do limited options because we didn't have the capability, but the planning process refined itself and became far more effective in rapid order."

Intelligence helped, too. As the years went by, the US ability to pinpoint and trace Soviet military targets underwent a vast improvement.

Of Plans and Prophecies

All of this enabled the US to develop capabilities to do less than the

ultimate, when it came to nuclear retaliation. The situation changed so much that, by 1985, John T. Correll, editor in chief of *Air Force Magazine*, could sum it up this way: "Too often, our strategy options are depicted as a choice of extremes: a perfect defensive shield that frees us from all fear of nuclear weapons, or else the all-or-nothing retaliatory doctrine known as Mutual Assured Destruction (MAD). These concepts represent only an ace and a deuce from the strategic deck. In between, a great many more realistic cards can be found."

To some, such capability was pointless because the explosion of one warhead would be so horrific it would lead, inevitably, to an all-out exchange. However, if the capability didn't exist, that argument about escalation would be a self-fulfilling prophecy.

"If you don't plan for it, you can't do it," says Dougherty. "You've got to be able to plan options, and that's what we did."

In referring to the Russian and American capability for mutual destruction, George W. Bush seems to have implied that the strategic direction he wants the US and Russia to follow would render MAD, if not nuclear weapons, impotent and obsolete.

Maybe some day. However, in the short run, the limited missile de-

Deterrence in Three Packages

The text "Definitions of Terms" specifies three distinct national nuclear strategies.

Finite Deterrence (FD) Strategy: The proponents of this strategy believe that the enemy will behave rationally and that credible deterrence requires only that we maintain an Assured Destruction threat against his valued targets—in other words, we hold his cities and industry hostage. The only purpose of strategic forces would be to deter a major attack on the United States, its forces or allies, and the threat of an assured counter-city second strike capability. This strategy would provide a reasonable number of missiles, almost invulnerable to enemy attack, and targeted solely against Soviet industrial and population centers. If the Soviet Union did attack the US, all of these missiles would be launched by a simple go order at countervalue targets. The attack would be so punishing that the Soviet Union would see this as self-evident ahead of time and thus never attack in the first place. The remaining US crises would be handled by general-purpose forces in a conventional sense. One major drawback to this strategy is proliferation, as nations formerly under the US strategic umbrella would of necessity produce weapons of their own. This strategy would offer no protection to allies, thus losing credibility. It requires no military superiority; simple targeting; a second strike capability but nothing else; requires little or no defense; no control of escalation is offered; arms race possibly slowed down; and it is relatively cheap. The supporting force structure has little warfighting flexibility or capability.

Counterforce (CF) Strategy: This strategy is based on the premise that nuclear war can happen and an effort to "tame" it should be given primary consideration, plus an objective of a favorable outcome if deterrence (the primary objective) fails. Some critics claim that this strategy is "extreme" in the amount of forces required and the cost involved. The key to this strategy is that deterrence may in fact fail. Despite Assured Destruction, the enemy might not be totally rational and may elect to engage in a nuclear war. This being the case, a full strike capability to destroy enemy nuclear delivery systems prior to launch is needed. With this posture, a nation could target for counterforce. This would require both a secure first and second strike capability. Thus the offensive force would be complex along with the requirement for excellent re-

connaissance and command and control. To insure acceptable (meaning that at least you survive and can reconstitute) damage levels to the US, both active defense and civil defense roles would be high, coupled with a complete surveillance and warning system. With such a capability, deterrent postures would be high for the US and our allies. This also gives a high war-waging capability, maintains good control over escalation, medium-size general-purpose forces would be provided, giving good utility in crises. This strategy offers the widest range of military options, could provide for strategic superiority, limits damage, and boosts the deterrence posture both for US and Allies. Two of the most prominent disadvantages are: the extreme cost and it invites an arms race if you retain nuclear superiority.

Damage Limiting (DL) Strategy: This represents a wide range of force postures ranging from near-FD to near-CF. Such postures differ in degree and emphasis of the force components. Like the two extremes of CF and FD, DL depends on the foundation element of Assured Destruction but assumes that deterrence might fail, though unlikely. It most closely represents DOD view today. This strategy does give the US a minimal first strike capability, a strong second strike potential, and provides options other than all-out nuclear war. Because both countervalue and some counterforce targeting is involved, targeting becomes more complex than Finite Deterrence. A rather complex mixture of forces would be required. This strategy would require good reconnaissance and command and control but not as much as counterforce. This would offer a higher degree of deterrence to US and some to the allies. In order to give reasonable control of escalation and utility in crises, a medium-size general-purpose force would be required (however, a smaller general-purpose force than Finite Deterrence). The cost of this strategy would lie somewhere between Finite Deterrence and Counterforce. It seems to minimally satisfy all concerned. This strategy does not require, but may afford, military superiority; targeting is rather complex, adds a limited first strike (counterforce) capability, increases the offensive weapons allocated to urban/industrial (Assured Destruction with perhaps some "overkill"); affords some control of escalation, possibly could invite some sort of an arms race; and can be relatively expensive.

fenses envisioned by the Bush Administration would mark only a start toward the actual elimination of MAD as a distinct escalatory possibility.

Initial deployments of an American missile defense system would be aimed at stopping a few missiles lobbed at the US by a rogue state. In ongoing negotiations with Russian officials, the Bush team is attempting to convince Moscow that such defenses would not be intended to degrade its arsenal. In other words, both the US and Russia would retain

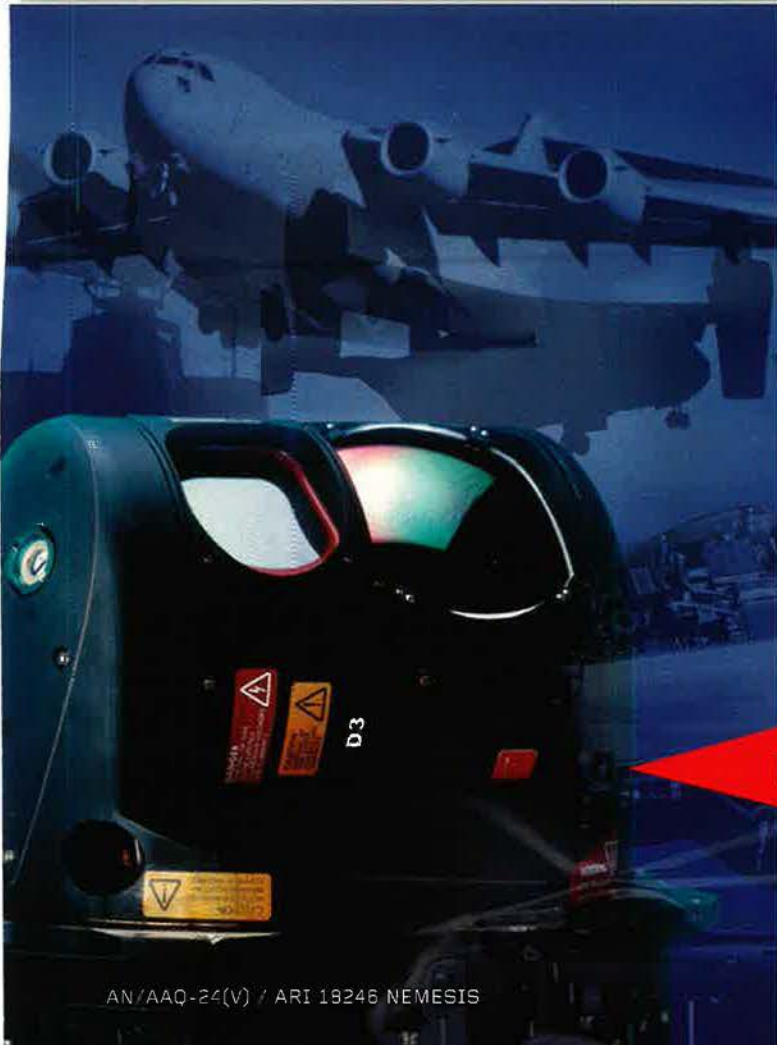
the capability to overwhelm defenses with thousands of warheads and wipe the other off the face of the Earth, if so inclined.

In short, limited defenses might be a first step away from the MAD dilemma, if they prove feasible. Eventually the arsenals of the US and Russia might be reduced to the point where neither would be able to threaten the other with societal destruction. To a specialist, this might be judged the end of MAD.

MAD's true burial would likely

require a change in the relationship between the US and Russia, one that would make the prospect of a nuclear weapons exchange no more likely than nuclear war between America and Britain. ■

Peter Grier, a Washington editor for the Christian Science Monitor, is a longtime defense correspondent and regular contributor to Air Force Magazine. His most recent article, "The Civil Service Time Bomb," appeared in the July 2001 issue.



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On the eve of Pearl Harbor, the White House wanted to send large numbers of aircraft, sorely needed by the AAF, to the Allies.

When Arnold Bucked FDR

By Herman S. Wolk

ON the eve of Pearl Harbor exactly 60 years ago, the United States was clearly unprepared for a global conflict. Building the American war machine to a size and strength suitable to the task of battle against Japan and Germany took years.

Even so, America had not been totally idle in the run-up to the Japanese attack. By late 1941, the US had for some years been making modest war preparations. These actions reflected Franklin Roosevelt's concern about Germany's rampage in Europe and Japan's aggression in East Asia.

President Roosevelt was especially worried about Britain's ability to stay the course in battle against Hitler.

During the period 1939 to 1941, Roosevelt pushed the American military and American industry to plan for a wartime footing. He moved the Joint Army-Navy Board, predecessor to the Joint Chiefs of Staff, and the Munitions Board into the newly created Executive Office of the President.

Keenly aware of and deeply troubled by the pivotal role played by the Luftwaffe in Germany's victories, Roosevelt placed special emphasis on the "increased range, increased speed, [and] increased capacity of airplanes abroad." He advocated an enormous increase in the production of aircraft—to 50,000 airplanes per year, counting estimated requirements of the Royal Air Force.



Before the US entered World War II, FDR called for a huge increase in production of military aircraft, but his first intent was to send them to the UK, Russia, and China. Gen. H.H. "Hap" Arnold was forced to fight to build up the US force—straining his relationship with the President.

This was a huge number—sufficient, said Maj. Gen. Henry H. "Hap" Arnold, Chief of the Army Air Corps, to "stagger any mere officer." Harry Hopkins, President Roosevelt's confidante, warned Robert A. Lovett, assistant secretary of war for air, that he might fall out of his chair when he heard the figures.

Presidential Pressure

After Congress passed the Lend-Lease Act in the spring of 1941, Roosevelt pressured the Army Air Forces to give up large numbers of production aircraft to Britain, which was then locked in a desperate strug-

gle with Germany. The President also insisted that US-produced airplanes and equipment be sent to the Soviet Union and China, which were also fighting the Axis powers.

Nor did Roosevelt stop here. In the summer of 1941, he clamped a defacto oil embargo on Japan and took military measures to reinforce Hawaii and the Philippine Islands. Once the US was in the war, FDR left strategy and tactics to the military, but when the US was a nonbelligerent in 1941, he was determined to throw all available switches to funnel the fruit of America's productive capacity to the Allies.

Roosevelt's actions were taken to shore up Allies and to prepare the United States for a potential two-front war. However, it put dramatic pressure on the AAF. Roosevelt's determination to send aircraft to the British meant that Arnold had to fight tooth and nail for airplanes to build up his own air forces. Arnold observed, "The Air Force was rapidly changing its status from one of peace to one of war." But the task of quickly deploying men and equipment overseas and within the continental United States confronted Arnold and the AAF with daunting organizational, personnel, and equipment problems.

Indeed, Roosevelt's commitment to Britain brought the President and his uniformed Air Chief into sharp conflict. (Gen. George C. Marshall, the Army Chief of Staff, also felt the heat, of course. He noted that British requirements presented "a tremendously complicated task here in Washington.") Arnold's problem revolved around the need to build up a US air force—"the world situation demanded it"—while simultaneously supplying the British and keeping Roosevelt at bay. So tense were the relations between President and commander that Arnold was worried that he would be relieved.

Meanwhile, Hopkins had visited Britain and returned home to recommend shipping the RAF more B-17Cs. Arnold's reaction was pointed: "It eliminates the present objectives in building up our air force, and it prevents the forming of a striking force and reduces, to the vanishing point, the low combat strength of this force."

Well aware of the developing rift between FDR and Arnold, Secretary of War Henry L. Stimson and Lovett recommended to Arnold that he visit

England and see for himself. Arnold followed through and spent two weeks in April talking with British leaders, civilian and military.

He saw firsthand what the British were up against. In addition, while in England, viewing the air war up close, Arnold became convinced that "destruction by airpower could make a landing of ground forces possible." He went on, "The Navy could ensure the existence of England but airpower and airpower alone could carry the war home to central Germany, break down her morale, and take away from her the things essential to combat."

Out of the Doghouse

Stimson made certain that Arnold personally briefed the President. At this meeting in the first week in May 1941, said Stimson, Arnold presented "an admirable statement" on what he had found. Roosevelt commented that it was the best briefing he had received on the British situation. Stimson, who held a high opinion of Arnold, was convinced that the Air Chief's splendid briefing was all that got Hap Arnold out of FDR's doghouse.

Arnold, meanwhile, was anxious in early 1941 to determine how the B-17C would perform in Europe under RAF command.

RAF Bomber Command wanted to use the heavy aircraft for high-altitude daylight raids. The Americans recommended a maximum al-

titude of 25,000 feet for combat operations. Also crews should take special training with the Sperry bombsight which was new to the RAF. However, the RAF failed to follow these recommendations, and beginning in May 1941, the B-17Cs operated from altitudes above 30,000 feet. RAF crews took little bombing practice. After a mere 22 missions spanning two months, only 12 of the original 20 B-17s were left.

According to Arnold, this trouble with the B-17s was "to hound us in our bombardment relations with the RAF for a long time." The performance of these Flying Fortresses, in Arnold's words, turned out to be "a fiasco." The British had been warned to use them with caution and to fly in formation. They ignored this advice, and as a result, the entire operation was "badly mishandled" by Bomber Command. On the other hand, the B-17s demonstrated that they could take a great deal of punishment. Arnold marveled, "Sometimes they were literally shot to pieces, but still they came back."

By the summer of 1941, Army planners had succeeded in crafting basic objectives and plans should the US enter the war. The initial dialogue in spring 1941 with the British to address coalition warfare, termed "ABC-1," for American-British Conversations, sketched fundamental goals. The European theater was judged to be decisive, and a sustained air offensive against Ger-



After a visit to Britain, Harry Hopkins, Roosevelt's confidante, recommended shipping more B-17s, like this one, to the RAF—much to Arnold's dismay and adding further stress to the Air Chief's growing rift with FDR.

many was contemplated. Subsequently, the Rainbow No. 5 war plan, reflecting the conclusions of ABC-1, detailed a strategic offensive in Europe and defensive posture against Japan in the Pacific.

The Joint Army-Navy Board approved Rainbow No. 5 in May 1941, and several weeks later it was approved by the Secretaries of War and the Navy.

President Roosevelt continued to call for accelerated war preparations—dragging along a reluctant American public—and on July 9, 1941, almost three weeks after Germany had stunned the world by invading the Soviet Union with 160 divisions, he asked the Army and Navy for an estimate of the “overall production requirements needed to defeat our potential enemies.”

First War Plan

Arnold received approval from the War Department to have the new Air War Plans Division of the Air Staff—created when the AAF was established in June 1941—prepare the requirements, known as the Air Annex. The plan, called AWPDP-1, was developed and refined under enormous pressure, day and night. In many ways, the United States already was at war, although the actual declaration of war had not yet arrived.

The plan was drawn up by Lt. Col. Harold L. George (head, Air War Plans Division), Lt. Col. Ken-

neth N. Walker, Maj. Laurence S. Kuter, and Maj. Haywood S. Hansell Jr. (recently returned from England with folders on German targets). It identified the following major target systems: aircraft assembly plants, electric power, transportation, and synthetic oil. This became the blueprint for the conduct of the air war against Germany in the early months of conflict.

AWPD-1 stated a requirement for more than 63,000 aircraft, about 7,500 of which were to be heavy bombers. The AAF planners foresaw Britain functioning as the site of many airfields from which the bombers would decimate Nazi Germany’s industrial base. These plans depended heavily on the ability of American industry to produce huge numbers of aircraft, since in the summer of 1941, the AAF had fewer than 700 bombers of all types—heavy, medium, and light.

In late August 1941, the AAF’s George briefed the war plan to Marshall, who could have dissented or asked for major revisions. Instead, he stated: “I think the plan has merit. I should like the Secretary and assistant secretaries to hear it.”

According to one of AWPDP-1’s authors, Hansell, this response “marked a crucial turning point in the evolution of American airpower.”

Stimson also approved the plan, emphasizing: “General Marshall and I like the plan. I want you gentlemen

to be prepared to present it to the President.” However, Imperial Japan struck on Dec. 7, and the US entered the war before Roosevelt ever received the briefing. In late December 1941, an Anglo-American conference in Washington endorsed the plan’s concept, although it never did reach the President’s desk.

The Nazi attack on the Soviet Union on June 22, 1941, had generated a sense of urgency in US war planning. While the AAF’s planners in Washington drafted AWPDP-1, Arnold found himself at sea in August aboard HMS *Prince of Wales* at Argentia, off the coast of Newfoundland. Arnold had been on one of his frequent inspection tours in early August when he received a message from Marshall directing him to return immediately to Washington. What followed was a sea voyage over several days to Placentia Bay, Newfoundland, where Marshall, Arnold, the US Chiefs of Staff, their British counterparts, and high-ranking US and British diplomats met with Roosevelt and Prime Minister Winston Churchill.

Our Friends

The key issue was production and allocation of aircraft. This was no surprise to the AAF Chief, who observed: “On top of other headaches, [there] was the daily business of satisfying White House, Congressional, and War Department superiors who were constantly receiving phone calls, visits, and letters from people, official and unofficial, American, British, French, Dutch, Chinese, Polish, Russian, ... and what not, criticizing the Air Forces’ procedures, offering free advice and recommendations, or demanding a priority share of our equipment.”

As one historian commented, “American airpower was getting strangled in the cradle by an excess of Presidential generosity.”

Until passage of the Lend-Lease Act, British crews had picked up aircraft at US factories. In May 1941, Roosevelt directed Stimson to “take full responsibility” for delivering the aircraft to “the point of ultimate take-off.” AAF crews then began flying aircraft from the manufacturing plant to terminals where British airmen or American civilians took over for the flight across the Atlantic. This was the forerunner to the AAF Ferrying



Like Arnold, Army Chief of Staff Gen. George Marshall (left) felt the effects of Roosevelt’s promises to the UK. Later in the war, Marshall would ensure Arnold received the equipment and organizational flexibility he required.

Command. The British subsequently termed the ferry route across the Atlantic the "Arnold Line," honoring the AAF Chief. By the end of the war, British Commonwealth nations had received 26,000 aircraft, the Soviet Union 11,450, and China almost 1,400.

Prior to meeting with the British, Arnold had convinced Roosevelt and Marshall that no aircraft should be given to Allies until the Americans had met their own needs. No commitments would be made to Britain until AAF had studied their requests. As it was, Arnold noted, "The British as usual asked for everything they wanted, regardless of whether we have or ever will have an air force. They never blinked an eye when they asked for 100 percent of our production."

As it turned out, the British had acquired erroneous US production figures. Consequently, they were requesting numbers of airplanes that exceeded actual production by a wide margin. Arnold explained this to the British officers, prompting their representative, Air Vice Marshal Wilfred Freeman, to emphasize to Arnold: "When Air Marshal Peter Portal comes over, I am going to insist that he see just two people—one is the President of the United States and the other is you."

Thus, said the AAF Chief, the service was able to get away without losing "everything we owned, including our pants."

Subsequently, Arnold was able to persuade Stimson that the AAF had first priority. He emphasized to the Secretary of War that it would not be possible to create the air force needed "to take decisive action" if large quantities of long-range aircraft were exported.

Meanwhile, the AAF had taken action to improve air defense of the continental US and to build up its overseas forces. The War Department had created four distinct geographical areas in the United States—Northeast, Central, Southern, and Western Defense Commands. Arnold redesignated the existing continental US air districts—Northeast, Northwest, Southeast, and Southwest—as First, Second, Third, and Fourth Air Forces. Across the North Atlantic, the AAF moved to establish installations across the air route to Britain. During 1941, AAF per-



Arnold thought the performance of the B-17C in British hands was "a fiasco"—largely because the RAF ignored US advice. At the same time, he felt B-17s, here under construction, would be key to defense of the Philippines.

sonnel worked on communications and weather stations in Labrador, Baffin Island, Newfoundland, Greenland, and Iceland. By late 1941, the foundation for an airways communications system had been built across the North Atlantic to the British Isles.

In the Caribbean, Maj. Gen. Frank M. Andrews organized the Caribbean Air Force. The fulcrum was the Panama Canal Zone, and by late 1941, 183 aircraft were assigned there. The Caribbean Air Force, covering the entire theater, was responsible for air defense and all air operations. In September 1941, Marshall appointed Andrews to be commander of all US forces in the Caribbean, the first time an airman had occupied a unified command post.

Summer of 1941

While it intensified efforts to sustain England with the tools of war, the Roosevelt Administration was well aware of the threat to American interests posed by Japan in the Pacific. In the summer of 1941, the Far Eastern situation had turned ever more dangerous. The Japanese had moved south, occupying French Indochina. As a result, the Administration placed a freeze on Japanese assets in the United States, in effect creating an economic blockade of Japan.

The need for improved air defenses in Hawaii and the Philippines was in fact a requirement of exceptionally long standing and had been empha-

sized by Brig. Gen. William "Billy" Mitchell in his 1924 report on his Far Eastern trip. Mitchell suggested that it seemed inevitable that at some point in the future Japan and the United States would be at war with each other.

Japanese aggression in East Asia and the worsening diplomatic situation between the US and Japan prompted Stimson to warn that "all practical steps" needed to be taken to increase defensive strength in Hawaii and the Philippines. Stimson was also much concerned about a secret letter he had received in early 1941 from Secretary of the Navy Frank Knox, who pointed out that the Navy had re-examined the security of the Pacific fleet at Pearl Harbor. Knox emphasized "the increased gravity of the situation with respect to Japan and by reports from abroad of successful bombing and torpedo plane attacks on ships while in bases." Knox added: "If war eventuates with Japan, it is believed easily possible that hostilities would be initiated by a surprise attack upon the fleet and the naval base at Pearl Harbor."

Not only had the War Department been building up forces in Hawaii, but Arnold had sent 21 B-17s to Hickam Field. Commanded by Maj. Gen. Frederick L. Martin, the Hawaiian Air Force had been activated in November 1940 and consisted of the 18th Bombardment Wing at Hickam and the 14th Pursuit Wing at Wheeler Field. In late 1941, of 231



On Dec. 6, 1941, Arnold was in California to discuss manufacturing issues and met B-17 crews on their way to build up forces in the Philippines. The next day, some B-17s line the field at Hickam after the attack on Pearl Harbor.

aircraft assigned to the Hawaiian Air Force, only half were regarded as up-to-date airplanes.

Aggressive Defense

The AAF's strategy was to give the Hawaiian islands an aggressive defense, featuring long-range aircraft to locate and attack enemy aircraft carriers. However, the decision by the War Department in 1941 to reinforce the Philippines meant that the Hawaiian Air Force received a lower priority in the allocation of aircraft.

With the change in War Department policy to in fact reinforce the Philippines—subsequently reflected in the Rainbow No. 5 plan and approved by the Joint Army–Navy Board—Arnold in October 1941 sent Maj. Gen. Lewis H. Brereton to the Philippines to command the Far East Air Force under Gen. Douglas MacArthur. Retired as Army Chief of Staff, MacArthur had been building up the Philippine military as a field marshal in the employ of the island government, and in July 1941 the War Department recalled him to duty and placed him in command of the newly created US Army Forces in the Far East. With the Administration's directive to not only defend but reinforce the islands, Roosevelt was attempting to send the Japanese a message. Brereton had more than 300 aircraft under his command but less than half of them combat ready.

As Arnold saw it, the key to de-

fense of the Philippines was the B-17, and he was prepared to allocate several heavy bombardment groups to Brereton. He ordered the 19th Bombardment Group, which had flown the first B-17s to Hawaii in May, to transfer to the Philippines. By October, Col. Eugene L. Eubank had arrived with the first echelon of the 19th Group. In September, the 14th Bombardment Squadron, commanded by Maj. Emmett O'Donnell Jr., in a historic flight, flew nine B-17Ds from Hickam Field—via Midway, Wake, Port Moresby (New Guinea), and Darwin (Australia)—to Clark Field, near Manila.

These moves by the AAF to reinforce the islands meshed with Marshall's September directive that "United States Army Forces in the Philippines be placed in the highest priority for equipment." Stimson, a former governor-general of the islands, cheered deployment of the B-17s to the Philippines, stating that this gave the US the opportunity to "get back into the islands in a way it hadn't been able to for 20 years."

Stimson applauded the AAF concept of using the B-17, with its great range, to attack an invading fleet far out at sea. Marshall subsequently observed: "If we could make the

Philippines reasonably defensible, particularly with heavy bombers in which the Air Corps at that time had great faith, we felt that we could block the Japanese advance and block their entry into war by their fear of what would happen if they couldn't take the Philippines and we could maintain heavy bombers on that island."

As the Roosevelt Administration in 1941 moved American industry toward a wartime configuration and accelerated shipment of war equipment to Britain, the Soviet Union, and China, the Army Air Forces prepared for war. These preparations took on staggering proportions—not only aircraft production but training of pilots and aircrew, establishment of a myriad of technical schools, and building bases and their supporting infrastructure.

As Marshall put it, "It used to be we had time and no money; now we have money and no time." Personnel strength of the AAF between the end of 1939 and December 1941 increased from 43,000 to almost 300,000. Of utmost importance, the AAF formulated war plans and engaged in coalition planning with the British. This provided a strategic framework that created the backdrop for the AAF's landmark AWPD-1, which estimated wartime requirements.

Deeply concerned about aircraft production and unit readiness, and trying to build up forces, Arnold left in late November for the West Coast to inspect bases and production facilities. Diplomatic negotiations with the Japanese—ongoing since February—had broken down and Army and Navy commanders in the Pacific were being warned that hostile action by the Japanese was "possible at any moment."

On Dec. 6, 1941, Arnold met in California with the pilots and crews who were planning to fly more B-17s to the Philippines, with a brief stop in Hawaii. The next day, he joined Donald Douglas, an aircraft manufacturer, to discuss production issues. Before the day ended, the US was at war, and the Army Air Forces would be put to the test. ■

*Herman S. Wolk is senior historian in the Air Force History Support Office. He is the author of *The Struggle for Air Force Independence, 1943–1947* (1997) and a coauthor of *Winged Shield, Winged Sword: A History of the United States Air Force* (1997). His most recent article for *Air Force Magazine*, "The First Air Staff," appeared in the June 2001 issue.*

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By Frances McKenney, Assistant Managing Editor

AFA National Convention Canceled

In the aftermath of the terrorist attacks in September, the Air Force Association canceled this year's National Convention, which had been scheduled to begin a few days later. As a result, AFA turned to other means to conduct business that otherwise would have been laid before the delegates.

The National Board of Directors, empowered to act on the association's behalf between conventions, approved and adopted the annual AFA Statement of Policy, Top Issues paper, and resolutions by mail, e-mail, and telephone vote.

Election of national officers and national directors was more complicated. Cancellation of a convention because of a national emergency had never been contemplated. Therefore, there were no provisions for holding an election under such circumstances, so the Board of Directors had to determine how to do it.

The report of the nominating committee was sent to the head of each state delegation, and after an interval for additional nominations, printed ballots were mailed out. The vote, following the allotted voting strength of each state, was due at AFA headquarters by Oct. 31.

The Aerospace Education Foundation also conducted its election without a meeting. Following the approval of an election procedure and an opportunity for additional nominations, the AEF Board of Trustees voted by mail, with the election to be completed before the end of October.

In addition, a special meeting of the AFA Board of Directors will be held in Washington Dec. 8, followed by a meeting of the AEF Board of Trustees Dec. 9.

This year's major AFA national awards, which would have been presented at the convention, will be presented instead at appropriate events in Washington or in the field.

This was the first time in history that an AFA National Convention had been canceled. There was no convention in 1965, but that was be-



AFA's Senior Leadership Advisory Group gathered for a photo at their July meeting. Front row (l-r) are William Spruance, AFA National Chairman of the Board Thomas McKee, and AFA National President John Politi. In back: Richard Goetze Jr., James McCoy, Jack Price, Russell Dougherty, Monroe Hatch Jr., John Gray, William McBride, and John Alison. Other SLAG members are: George Douglas, Michael Dugan, Jack Gross, and Julian Rosenthal.

cause of an 18-month interval when the meeting time was changed from fall to spring. There was a similar 18-month interval when the convention was changed back to the fall in 1971.

Flags for Family Members

AFA donated 100 US flags and 1,500 flag lapel pins to a DOD Family Assistance Center set up at a hotel near the Pentagon after the Sept. 11 attack.

The request for the items came from CMSgt. Gail L. Paich, who was among the more than 100 volunteers manning the assistance center 24 hours a day. Paich turned to AFA because she is a member of the **Donald W. Steele Sr. Memorial (Va.) Chapter** and had served for several years as the liaison on the association's Reserve Council.

AEF Names Teacher of the Year

The Aerospace Education Foundation has named Christy L. Garvin as the 16th recipient of its Christa

McAuliffe Memorial Teacher of the Year Award.

The **Dobbins (Ga.) Chapter** had nominated Garvin, who was a teacher for gifted students at Vaughan Elementary School in Powder Springs, Ga. She has since become a student herself, at Kennesaw State University (Ga.), to earn a third bachelor's degree, this one in biology. She plans to return to her Vaughan Elementary classroom in fall 2002.

Garvin's younger students studied principles of flight by building kites and airplane models, flew cross-country through computer simulation, and visited Dobbins ARB, Ga., among their projects. The older ones concentrated on aerospace topics, building rockets, an inflatable 30-foot-long space shuttle model, and other space vehicles. The shuttle was constructed by studying photos of the actual spacecraft, scaling segments of it down to one-quarter size templates, cutting heavy plastic pieces from the templates, then taping the pieces with

duct tape. After they inflated the model, the students embarked on elaborate computer simulated missions that led to their building other space vehicle models.

Garvin traces her interest in aerospace topics to her childhood seventh-grade math teacher who used rockets to explain Newton's Laws.

The AEF teacher award honors a public, private, or parochial classroom teacher (kindergarten through 12th grade) who demonstrates excellence in furthering the concepts of aerospace technologies in the classroom through successful, innovative curricular classroom programs. The award includes a check for \$1,000 and is named for New Hampshire schoolteacher McAuliffe, who was to be the first teacher in space when she died in the January 1986 *Challenger* explosion.

Welcoming the New Secretary

Continuing their tradition, the **Nation's Capital Chapter** sponsored a reception and dinner to welcome the new Secretary of the Air Force, James G. Roche, and his wife, Diane.

The more than 300 guests who gathered at a hotel near the Pentagon in August included some 40 general officers and several former Secretaries of the Air Force, reported Chapter President Wayne Hermandorfer.

In his remarks to the audience, Roche, a retired Navy captain and former defense industry executive, said he was proud to be part of the Air Force and was already impressed by its performance and personnel.

History at Edwards

Famous for its USAF Test Pilot School and more than 150 aviation firsts, Edwards AFB, Calif., has an unusually rich history.

No wonder when the **Antelope Valley (Calif.) Chapter** sponsored a "Historical Edwards AFB Tour" in late August, several nonmembers signed up to go, too.

Before the visitors boarded a bus for their three-hour tour, Chapter President Harry A. Talbot welcomed the group, and archaeologist Kathy Davis presented an overview of the sites to be visited.

The tour stops included the area where Lt. Col. John Paul Stapp conducted deceleration-forces experiments on a 2,000-foot-long sled track, the loading pit where the supersonic X-1 rocket plane was secured onto its B-29 mothership, and World War II-era revetments built of adobe. The guests visited the original Army Air Corps encampment site, where en-

listed men lived in tents as they maintained ground targets at the bombing and gunnery range (Edwards' original function). The foundations of the house where Chuck Yeager lived, a WWII military family housing area called Kerosene Flats, and "Muroc Manor," the restored house of the flight test center's first commanding officer, gave visitors a glimpse of life at this remote location in its early years.

Honors in Montgomery

AFA National President John J. Politi was guest speaker at the **Montgomery (Ala.) Chapter's** quarterly luncheon in August.

He was in Montgomery to present SMSgt. Carol A. Stehley with the AFA-sponsored Academic Achievement Award at the Senior NCO Academy Graduation. Stehley, from Class 01-E, is assigned to Air Force Space Command, Peterson AFB, Colo.

More than 50 chapter Community Partners attended the luncheon, where Politi spoke about the challenges of defense funding and force sizing. He then helped present several awards.

Austin Landry, who was then Alabama state president, presented the Chapter of the Year Award to Frederick A. Zehrer III, then Montgomery Chapter president. Landry also announced the selection of Nancy Zehrer as the state Member of the Year. The award recognizes her work as honorary national president for Silver Wings and as vice president for AFROTC and Silver Wings Affairs, South Central Region. Silver Wings is an auxiliary of the Arnold Air Society which, in turn, is affiliated with AFA.

Chapter officers elected were Albert A. Allenback Jr., president; Mark J.

Dierlam, vice president; Thomas Gwaltney, secretary; and Donald C. Brown, treasurer.

Convention in Arkansas

The Arkansas State Convention, hosted by the **David D. Terry Jr. Chapter** in Little Rock, Ark., in August, featured as guest speaker the new wing commander at Little Rock Air Force Base. Brig. Gen. (sel.) David Scott had taken command of the base and the 314th Airlift Wing in mid-July. He spoke about the Air Force's future direction and stressed the importance of community support.

In convention business sessions, Jerry Reichenbach and James D. Elmer of the Terry Chapter were re-elected as state president and vice president, respectively; Paul Bixby, from the **Razorback Chapter**, was re-elected treasurer.

As part of the convention activities, the host chapter "borrowed" the wing's mascot, a cement pig called "DJ the Hawg," from its ceremonial stall in the base Officers' Club. For weeks afterward, Reichenbach drove the 85-pound statue around the state, visiting the **Razorback and Ouachita Chapters** and their Community Partners and generating coverage of AFA and its activities in local newspapers. Terry Chapter President Cynde Maddox explained that the mascot is well-known and travels with the wing on temporary duty worldwide. She said the lieutenant who is charged with keeping the mascot safe offered to join AFA if the chapter would return the mascot.

Reichenbach returned DJ to the O Club in late September, in an event covered by the base newspaper.

Special Recognition

AEF recently announced the recipients of two awards it co-sponsored to recognize outstanding reservists who participated in Aerospace Expeditionary Force deployments. The awards also recognized their employers.

George W. Bush Awards honoring traditional Air National Guard members and their employers went to 1st Lt. Shawn M. Dawley, 165th Airlift Squadron, Kentucky ANG, and his employer, ETC Associates of Crestwood, Ky.; and MSgt. Bruce E. Yelle, 157th Operations Support Flight, New Hampshire ANG, and his employer, Kohlhas Electric of Hampton, N.H. The recipients of this one-time award received an AFA Citation and \$500 from AEF, made possible by a donation from William W. Spruance, who is an AFA national director emeritus, an AEF trustee, and a member of the **Diamond State (Del.) Chapter**.

Citizen Airman Awards for Air Force Reservists and their employers went to TSgt. William Harvey, 303rd Fighter Squadron, Whiteman AFB, Mo., and his employer, Ozarks Coca Cola/Dr. Pepper Bottling Co. of Springfield, Mo.; and Lt. Col. David L. Lint, commander of the 93rd Fighter Squadron, Homestead ARS, Fla., and his employer, American Airlines. The recipients of this one-time award also received an AFA Citation and \$500 from AEF.

The 1,000th First-Termer

When the First-Term Airmen Center at Luke AFB, Ariz., graduated its 1,000th airman Aug. 17, the **Frank Luke (Ariz.) Chapter** helped mark the occasion by providing funds for a specially decorated cake.

A1C Carlos Colon, a munitions systems specialist with the 56th Equipment Maintenance Squadron, was the 1,000th graduate of the 10-day program, which provides information sessions for first-termers arriving at their first permanent duty station and assists them with inprocessing. The FTAC program began in July 1999.

The chapter has been paying for refreshments at each Luke FTAC graduation, Chapter President Harry Bailey said. Until the chapter stepped forward, FTAC instructors had been paying for this out of their own pockets. The chapter also donates \$25 each month to "Luke's Finest." This is the monetary portion of a monthly award presented by the Chief's Group at Luke to a junior enlisted top performer.

July's recipient was A1C Christopher D. Thrush, of the 56th EMS Armament Flight. Several chief master sergeants and Bailey went to Thrush's workplace for a surprise

presentation of a plaque and the chapter's check. Bailey said Thrush is a native of Lancaster, Ohio, and is an aircraft armament systems apprentice, maintaining weapon launchers, 20 mm gun systems, and ammunition loading systems.

These are just two ways the chapter supports base activities and organizations, Bailey said. Along with receptions for recipients of AEF's Eagle Grants for Community College of the Air Force graduates, the chapter supports base award luncheons and dinners.

Edward J. Monaghan (1921-2001)

AFA National Director Emeritus Edward J. Monaghan died Aug. 30 in Anchorage, Alaska, after a short illness. He was 80 years old.

Born in Brooklyn, N.Y., Monaghan attended City University of New York and entered the US Army Air Forces in April 1942. He served for 24 years on active duty as a fighter pilot, squadron commander, and operations staff officer and retired as a lieutenant colonel. In his civilian career, he was president and chief executive officer of Monaghan Flight Enterprises, Inc., in Anchorage.

Monaghan, a member of the An-

chorage Chapter, held many leadership positions in AFA, from chapter president and state president to Northwest Region president. He had also served as chairman of the Constitution Committee.

More AFA/AEF News

■ Retired Gen. Lloyd Newton, former AETC commander, received the AFA Special Dedication Award from the New England Region at a luncheon in his honor in Newport, R.I. Guests at the event included Brig. Gen. Richard Santoro, Rhode Island vice adjutant general, air; Maj. Gen. Reginald Centracchio, state adjutant general; Eugene D'Andrea, then New England region president; David Buckwalter, state president; Lt. Col. Kevin Darnell, president of the **Newport Blue & Gold Chapter**; and Wayne Mrozinski, **Metro Rhode Island Chapter** president.

■ A member of the **Col. Loren D. Evenson (Fla.) Chapter**, Lt. Col. R. Leigh Hinkle, was guest speaker for a meeting of the **Col. H.M. "Bud" West (Fla.) Chapter** in August. Hinkle, who is chief of the F-22 Integration Office at Tyndall AFB, Fla., spoke about the Raptor, its capabilities, and how it will be integrated into USAF operations. The retired fighter pilots in the chapter were impressed, Chapter Secretary John E. Schmidt Jr. reported.

■ The **Total Force (Pa.) Chapter** hosted a pool 'n pizza party for Civil Air Patrol cadets and seniors at a local country inn. Among those attending were Chapter President Patricia Accetta, Vice President Robert Iarussi, and Secretary Ruth Iarussi.

■ Former AFA National Chairman of the Board Doyle E. Larson, a member of the **Gen. E.W. Rawlings (Minn.) Chapter**, was keynote speaker at the dedication of a World War I Memorial at Ft. Snelling National Cemetery in Minneapolis-St. Paul, Minn., in September. The ceremony, attended by members of several military and veterans organizations, marked the unveiling of the gray marker, made of Minnesota granite, weighing more than 4,000 pounds, and measuring five feet high and seven feet long. ■

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F9 Music Key Ring. Plastic key ring with AFA logo. Plays the tune "Off We Go" **\$6**

F10 Windproof Lighter. By Zippo. Brushed stainless steel. **\$13**

F11 Gaffer's Money Clip. By Zippo. Brushed stainless steel with ballmarkers and greenskeeper. **\$13**

F12 AFA Umbrella. 6C" in white and dark blue with AFA logo and fiberglass shaft. **\$25**

F13 3" Decal. Member or Life Member. Specify inside or outside window. **\$.15**

F14 AFA Golf Balls. Titanium Top Flight by Wilson with full color AFA logo. Sleeve of 3. **\$8.50**

F15 Pewter Medal. AFA logo. Suitable for plaques and decorative placement. 1.75" diameter. **\$5**

Unit Reunion

Darwin (Australia) bombing veterans and survivors. Feb. 16-21, 2002, in Darwin, Australia. **Contact:** Maxine Dowley, Darwin City Council, Harry Chan Ave., Darwin GPO Box 84, Darwin, NT, Australia 0801 (m.dowley@darcity.nt.gov.au). ■

Books

Compiled by Chequita Wood, Editorial Associate

The 79th Fighter Group Over Tunisia, Sicily, and Italy in World War II. Don Woerpel. Schiffer Publishing, Ltd., 4880 Lower Valley Rd., Atglen, PA 19310-9717 (610-593-1777). 264 pages. \$45.00.



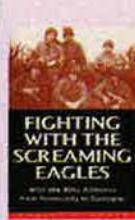
The Conflict Over Kosovo: Why Milosevic Decided to Settle When He Did. Stephen T. Hosmer. RAND, 1700 Main St., PO Box 2138, Santa Monica, CA 90407-2138 (310-451-7002). 155 pages. \$20.00.



Memoirs of World War II. Martin F. Loughlin. Vantage Press, Inc., 516 W. 34th St., New York, NY 10001 (212-736-1767). 94 pages. \$8.95.



A Luftwaffe Bomber Pilot Remembers: World War II From the Cockpit. Klaus Häberlen. Schiffer Publishing, Ltd., 4880 Lower Valley Rd., Atglen, PA 19310-9717 (610-593-1777). 200 pages. \$29.95.



Fighting With the Screaming Eagles: With the 101st Airborne From Normandy to Bastogne. Robert M. Bowen. Stackpole Books, 5067 Ritter Rd., Mechanicsburg, PA 17055-6921 (800-732-3669). 256 pages. \$29.95.



Secretaries and Chiefs of Staff of the United States Air Force: Biographical Sketches and Portraits. George M. Watson Jr. GPO, Supt. of Documents, PO Box 371954, Pittsburgh, PA 15250-7954 (866-512-1800). 270 pages. \$46.00.

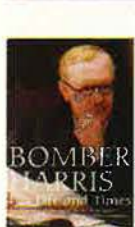
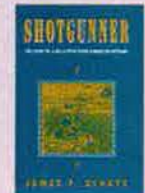
The Art of Wing Leadership and Aircrew Morale in Combat. Lt. Col. John J. Zentner. USAF. Air University Press, 131 W. Shumacher Ave., Maxwell AFB, AL 36112-6615 (334-953-2773). 110 pages. \$10.00.



Flags of Our Fathers. James Bradley with Ron Powers. Bantam Books, 1540 Broadway, New York, NY 10036 (800-726-0600). 375 pages. \$12.95



Shotgunner: The Story of a Helicopter Door Gunner in Vietnam. James F. Schatz. Vantage Press, Inc., 516 W. 34th St., New York, NY 10001 (212-736-1767). 229 pages. \$21.95.



Bomber Harris, His Life and Times: The Biography of Marshal of the Royal Air Force Sir Arthur Harris, Wartime Chief of Bomber Command. Henry Probert. Stackpole Books, 5067 Ritter Rd., Mechanicsburg, PA 17055-6921 (800-732-3669). 432 pages. \$34.95.

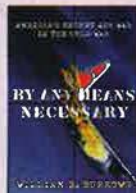


Introduction to the United States Air Force. Capt. B. Chance Saltzman, USAF, and Thomas R. Searle. Air University Press, 131 W. Shumacher Ave., Maxwell AFB, AL 36112-6615 (334-953-2773). 177 pages. \$24.00.



Strategic Warfare in Cyberspace. Gregory J. Rattray. The MIT Press, 5 Cambridge Center, Cambridge, MA 02142-1493 (800-356-0343). 517 pages. \$49.95.

By Any Means Necessary: America's Secret Air War in the Cold War. William E. Burrows. Farrar, Straus, and Giroux, 19 Union Square W., New York NY 10003 (888-330-8477). 398 pages. \$26.00.



Keeping the Edge: Managing Defense for the Future. Ashton B. Carter and John P. White, eds. The MIT Press, 5 Cambridge Center, Cambridge, MA 02142-1493 (800-356-0343). 326 pages. \$24.95



When Duty Calls: A Guide to Equip Active Duty, Guard, and Reserve Personnel and Their Loved Ones for Military Separations. Carol Vandesteeg. Winepress Publishing, PO Box 428, Enumclaw, WA 98022 (877-421-7323).



Commanding Officers. David Miller. Trafalgar Square Publishing, PO Box 257, Howe Hill Rd., North Pomfret, VT 05053 (800-423-4525). 273 pages. \$45.00.



Mason Patrick and the Fight for Air Service Independence. Robert P. White. Smithsonian Institution Press, PO Box 960, Herndon, VA 20172-0960 (800-782-4612). 186 pages. \$24.95.



Wingless Eagle: US Army Aviation Through World War I. Herbert A. Johnson. The University of North Carolina Press, 116 S. Boundary St., PO Box 2288, Chapel Hill, NC 27515-2288 (800-848-6224). 298 pages. \$34.95.

Pieces of History

Photography by Paul Kennedy

Forever Red, White, and Blue



It is a symbol of national pride, of undaunted spirit, and a way to remember those who died as a result of the Sept. 11 terrorist attacks. After the attacks, the American flag has become a daily centerpiece, not just something for the Fourth of July. It flies from flagpoles and car antennas. It drapes office buildings. It's displayed in the windows of homes and businesses and

is even painted on a few. It shows up in clothing and accessories. The pieces here range from a contemporary necktie to victory and service pins from World War II. They remind us that Americans have long shown the stars and stripes with great pride in times of great need.



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