



# Strategic Force

With or without nukes, USAF's B-2s and B-52s can signal a warning or deliver a punch between the eyes.

By Adam J. Hebert, Senior Editor



Photo by Richard VanderMeulen

**S**ince the days of the deepest Cold War, Americans have embraced a strategic nuclear triad of land-based missiles, submarine-based weapons, and heavy bombers. The three “legs” are said to be mutually supportive and reinforcing.

The existence of that triad, said Lt. Gen. Robert J. Elder Jr., commander of 8th Air Force at Barksdale AFB, La., ensured that the Soviet Union “could not defeat any one leg of the triad and think [the US] wouldn’t still have an effective force.”

The Cold War is long gone, but, for two elements—ICBMs and seaborne ballistic missiles—the fundamentals

have not changed. These forces, while far smaller than they once were, operate essentially as they did during the superpower standoff.

The same cannot be said for the heavy bomber portion of America’s nuclear deterrent. The bomber force has undergone a major shift not only in size but also in composition, and—most importantly—purpose. In the process, its value has risen, too.

The fleet of US nuclear-capable bombers, once more than 300 aircraft, today numbers 115 aircraft—94 B-52H and 21 stealthy B-2 systems. Once, many Strategic Air Command bombers stood on day-to-day alert. Today, none do, and haven’t for 15 years.

Not a single one of those 115 bombers is exclusively dedicated to the nuclear mission. The B-52 and B-2 fleets have been made dual-capable, ready for nuclear or conventional strategic missions.

In short, the force has acquired great flexibility.

“We’ve moved away from looking at [strategic forces] in terms of [just] a nuclear response,” Elder said. “The goal is to provide options that can be presented to the command authority to determine what is in the best interest of the nation.”

Those options could entail either nuclear or conventional actions. Both are considered “strategic.”



*Pictured is a B-52H on takeoff. The legendary bombers have attracted significant attention in recent years for their conventional capabilities.*

The emergence of a new breed of strategic threat—rogue states either possessing or seeking nuclear, chemical, biological, or radiological weapons—is propelling the Air Force’s nuclear-capable manned bombers into new prominence.

Because of the proliferation of these “weapons of mass destruction” types of threats, the Pentagon emphasizes flexibility in its nuclear war planning.

### **Family of Attack Plans**

“There is a family of plans,” said Elder, “and that is because the goal here is WMD deterrence, not specifically nuclear deterrence against a particular state actor.”

Elder went on, “The bomber’s role

now is in this larger construct. We’re less interested with just trying to deal with one adversary, obviously, but we’re really trying to deter use of WMD across a fairly large spectrum.”

From its facilities set in the woodlands of northwest Louisiana, 8th Air Force serves as America’s only heavy bomber warfighting headquarters, employing global strike aircraft as directed by US Strategic Command and combatant commanders. It is the heart of bomber country.

At Barksdale, officers believe that nuclear-capable bombers offer unique powers that have, if anything, strengthened their relative value within the overall deterrent force.

First and most obviously, the bomber delivery mechanism is different from all others. Even if an adversary developed a means for defeating a missile warhead flying through space, that still would not help him defeat a weapon dropped from the air.

Another bomber “plus” is responsiveness, even with nuclear weapons. “You have some flexibility” in planning, Elder said. The nuclear cruise missiles launched by the B-52 fly certain types of mission profiles but offer targeting flexibility similar to that of conventional weapons.

“Within the [realm of the] nuclear cruise missile, there is such a thing as ‘flex-targeting,’” he said, indicating that there is latitude for retargeting before or even after the bomber gets airborne.

The B-2, which can drop B61 and B83 nuclear gravity bombs, is even less restricted. Because it will not be intercepted en route to a target, the stealthy, penetrating bomber can fly to an exact release point and put a nuclear weapon wherever it needs to go.

In short, bomber missions are relatively easy to conceive, plan, and update. This kind of flexibility is important in a world of vague and fluid—yet still deadly—threats.

Another benefit: Nuclear bombers can carry weapons of enormous size and power. In some cases, these are the only types of weapons that will do the job. As Elder said, there are “certain target sets” for which a bomber-sized weapon “gets to be advantageous.”

Finally, bombers are uniquely suitable for sending a visible and intimidating message.

“We can do things to increase the posture ... on an ICBM or an SLBM,” said Elder, “but nobody would know that you did it, because the ICBMs are in a hole and the SLBMs are in the water.” If the United States wants to make an open, unambiguous statement of intent—to say “we’re really serious”—it can put its long-range bombers on alert or move them closer to a foe.

### **B-52 Bombers**

The cornerstone of America’s nuclear-capable fleet is the venerable B-52 bomber. The youngest B-52 is nearly 45 years old, but it anchors the strategic air arsenal, even more so now that conventional strike has a key role.

At present, USAF fields a total of



94 such aircraft. They are organized into three major US-based formations: 2nd Bomb Wing, Barksdale; 5th Bomb Wing, Minot AFB, N.D.; and the 917th Wing (AFRC), also at Barksdale.

Maj. Gen. Richard Y. Newton III, assistant director of operations on the Air Staff in Washington, D.C., said USAF plans to keep a large number of these eight-engine airplanes until 2040. The old bomber, which Newton and his father both flew, is “still meeting today’s combatant commander needs,” he said.

For all that, though, the B-52 fleet could soon undergo a 40 percent numerical reduction, dropping down from 94 bombers today to just 56 by Fiscal 2008.

The hit list has already been drawn up. At present, the Air Force is maintaining 18 nonoperational attrition reserve aircraft—four at Barksdale, 14 at Minot.



**The mechanical pea pod at top is actually a B-52’s rotary launcher loaded with eight AGM-88 cruise missiles. The BUFF can carry three more cruise missiles under each wing, as seen above.**

Top service leaders are “pretty confident” USAF does not need these aircraft, Elder said. The Air Force doesn’t even have crews for them, he noted, and “when you have airplanes without crews, it leaves something to be desired.”

“perhaps somewhat counterintuitive,” but he explained the move this way: To continue to use the B-52s in the desired manner, the service needs to modernize them. Yet the Air Force essentially is working with a fixed pot of money; there is no more to be had. Spreading the available modernization money across 56 airplanes, and not across 94, means that the service can spend more on each individual bomber, producing more robust aircraft.

### Increased B-52 Training

Meanwhile, a reduction in the number of airplanes “does not necessarily equate to a reduction in the number of crews,” noted Elder. At present, 8th Air Force plans to produce the same number of crews and will actually increase the amount of training available to them, through the use of advanced simulators.

“In the past, we typically figured we had to have a squadron of 12 airplanes in order to be able to deploy six,” the commander said. With simulators reducing



**The versatility of the B-2 stealth bomber is constantly honed through participation in training exercises. The three shown here are at Nellis AFB, Nev.**

the need for aircraft dedicated to training, USAF might only need eight airframes to be able to deploy those six.

The bottom line, said Elder, is that a modernized but smaller B-52 force will cost less and be more potent than today's larger but less capable fleet.

"The intent is to have the same deployable capability we have right now," Elder reported. "This is not intended to lead to a reduction in capability—it's actually an enhancement."

Thus far, Congress has not approved the B-52 retirements, and USAF continues to rotate the attrition reserve B-52s into and out of service. "They go into a status where they don't fly for about half a year, then they go back onto the flying schedule," Elder explained.

The Air Force is doing this because airmen prefer that the jets not sit idly by. B-52s perform best when flown regularly, said SrA. Joshua Johnson, a crew chief at Barksdale. Conversely, he went on, the airframes that have been parked for extended periods tend to be the ones that develop short-term maintenance problems. Added Capt. Tom Stayer, a B-52 instructor pilot, "A flying jet is a happy jet."

Moreover, some of the 38 B-52s on the hit list soon will need major overhauls, said Elder, and "our preference would be to not fly them past the point where they have to go into programmed depot maintenance."

## Welch on the Importance of Being Balanced

Over the years, some nuclear strategists have called for going to a nuclear "dyad" of only two legs. Virtually everyone is in favor of keeping the submarine component. Various critics, however, have condemned either the ICBM or the bomber forces as being too vulnerable, too expensive, or too provocative.

One top strategist who sees merit in maintaining a strong triad is retired USAF Gen. Larry D. Welch, former Chief of Staff and commander of Strategic Air Command. Even if the American nuclear stockpile got to be "awfully small," Welch said in a recent speech, he "would still want a triad."

He cited the case of France in the Cold War. At one point, Paris could deploy only 18 land-based missiles, two missile-firing submarines, and one squadron of nuclear-capable fighters, but that small force, said Welch, "provided an enormous deterrent capability, because it was balanced and because the Soviets had to consider what the French might do."

He believes that it is still wise to confront possible aggressors with that

Right now, the fleet is in good shape. In its most recent inspection, the B-52 wing at Barksdale got no write-ups for unsatisfactory capabilities. Col. Daniel J. Charchian, commander of the 2nd BW, said the test affirms the wing "can perform this critical mission" and shows "the continued lethality of the B-52."

### B-2 Stealth Bombers

The rugged B-52 may be the workhorse of the dual-capable bomber force, but the stealthy B-2 is the racehorse, the one that far outperforms other aircraft.

The B-2s are precious combat assets. The Air Force owns only 21 of the radar-foiling bombers, and, of these, only 16 at any given time are ready for war. The stealth fleet is organized into a single unit, the 509th Bomb Wing, Whiteman AFB, Mo.

The Air Force estimates the B-2 service life to be 20,000 flying hours and that its readiness for combat operations thereby will stretch all the way until 2058. Meanwhile, though, the B-2s can't get into depot maintenance quickly enough.

The fleet is receiving major upgrades as it goes through planned depot rework at a rate of three per year. Northrop Grumman, the original B-2 contractor, is adding the Alternate High Frequency Material (AHFM) low observable finish to the aircraft at Air Force Plant 42 in Palmdale, Calif.

This "spray-on" stealth coating dramatically reduces the maintenance time that is required to fix up a B-2 and return it to mission-ready status.

As of November, the Whiteman wing had deployed six AHFM-equipped bombers. An additional eight bombers now at Whiteman went through PDM before the AHFM program, according to Don Wilkes, chief B-2 engineer for Northrop Grumman. Plans call for applying the finish to all of the bombers.

The bomber fleet is not a static entity. In time, the B-2 and B-52 will have a new stable mate. Under current USAF plans, the service will make its initial deployment of a next generation long-range strike aircraft in 2018. (See "The 2018 Bomber and Its Friends," October 2006, p. 42.)

Like the B-2 and B-52, this bomber



USAF photo by MSgt. Lance Cheung

**Capt. Patrick Hook performs a walk around of a B-52 at Minot AFB, N. D. The Air Force currently has more B-52s than crews to fly them.**

will have nuclear-weapons-carrying capability, said Newton, and will shoulder its share of the nuclear mission. It will also have a conventional strike capability.

Then there are standoff nuclear cruise missiles, the ground-hugging flying bombs introduced in the 1970s, which, by obviating the need to penetrate sophisticated air defenses, extended the useful life of the B-52.

Today, the Air Force has an inventory of 1,140 AGM-86 Air Launched Cruise Missiles and 460 stealthy AGM-129 Advanced Cruise Missiles, all of which have nuclear payloads.

There is no certainty that USAF will seek to acquire a next generation nuclear cruise missile. At present, the Air Force has no firm plans for developing a successor to today's bomber-born cruise missiles.

Harry C. Disbrow Jr., Air Force assistant director of operational capability requirements, said service officials still are engaged in policy debates about whether new nuclear cruise missiles are necessary or desirable.

In the meantime, he said, both cruise missile types are being well-maintained and regularly updated. Major service life extensions will keep them operational until at least 2030.

Some military officials in the combat commands are proposing bomber enhancements of their own. They seek to bring about improvements in "connectivity"—that is, links between the bomber force and its commanders.

Leaders of US Strategic Command

## The Decline of the Mighty Arsenal

Under terms of the 2001 US Nuclear Posture Review and the 2002 Moscow Treaty, Washington will drastically reduce its force of operational warheads—those stored near, or on, their actual delivery systems and ready for swift employment.

The Congressional Research Service notes that the US had more than 12,300 nuclear warheads in 1990. The target is about 2,200 warheads by the end of 2012. Thus, once cuts are complete, only about 20 percent of America's fear-some Cold War arsenal will remain.

How many nuclear weapons does the US now have? It depends on what "counting rules" you use.

The private Arms Control Association calculates that, under rules established by the US-Soviet Strategic Arms Reduction Talks treaties, the US in 2006 had 5,966 warheads.

Yet that total is squishy. For one thing, it includes 500 warheads from the now-defunct Peacekeeper ICBM (because the US has not destroyed the Peacekeeper launchers). For another, it attributes 81 warheads to the B-1B bomber, which doesn't carry nuclear weapons anymore.

Each B-1B and B-2 bomber counts as only a single warhead, though they once could drop tens of nuclear bombs. Each B-52 counts as 10 warheads.

On the other hand, the US way of calculating does not count thousands of nuclear warheads that are in storage—away from their delivery systems—but presumably usable.

and the other unified combatant commanders "have asked for increased connectivity for global strike forces," said Elder. In a developing crisis, bombers must be able to receive mission updates—whether new targets or even a recall order.

B-52s will undergo refurbishment in the Combat Network Communications Technology (CONNECT) program, a long-term upgrade that will add extremely high frequency (EHF) satellite communications, the Link 16 data link,

and other connectivity improvements.

Elder and Charchian both praised the B-52 Avionics Midlife Improvement program, which will vastly improve the bomber's computer and navigation systems.

The B-2 also will get radar improvements and a powerful EHF satellite communications capability that will ensure its secure connectivity throughout an entire nuclear mission profile.

Programs such as these are typically initiated "for the nuclear mission," Elder said, but are "at least as useful for some of the conventional missions that we're dealing with."

## Dual-Mode Deterrence

This kind of dual-mode deterrence capability promises to become increasingly important. In Elder's view, the reassurance of friends and allies will require Washington to "have the capability to be [globally] responsive—without being forced to go and use nuclear weapons."

Put another way: Today's global missions require "strategic options," but not necessarily nuclear options.

In many ways, a heavy bomber's combination of global range and large, diverse payload makes it the ideal platform for the new age of deterrence. It can perform strategic missions with or without nuclear weapons, and can either signal a warning or deliver a massive punch between the eyes.

USAF photo by MSgt. Val Gempis



**SSgt. Nick Grady (center) and three other airmen perform a phase inspection on a B-52 deployed to Andersen AFB, Guam.**

Both the B-52 and the B-2 (and the B-1B, which by treaty no longer has any nuclear capability) can generate strategic effects with conventional weapons. The B-52, of course, carries an enormous bomb load and has non-nuclear cruise missiles at its disposal.

A new smart bomb rack for the stealth bomber allows the B-2 to deliver up to 80 independently targetable, satellite-guided Joint Direct Attack Munitions. The B-2 also can drop a mammoth, bunker-busting 5,000-pound EGBU-28 bomb.

In 8th Air Force today, priorities are almost evenly balanced between the nuclear and conventional missions. “Probably only about 25 percent of the [crew] training we do is focused solely on nuclear” missions, Elder said. Another 25 percent applies only to conventional operations. The other 50 percent of the training “could go either way,” he said, in that it could support either type of mission.

In the face of tensions on the Korean Peninsula, the US has continuously deployed heavy bombers to Andersen AFB, Guam, in a reinforcement of US military commitment to the region. At the end of 2006, the 96th Bomb Squadron at Barksdale was preparing for a rotation to Guam to support the Pacific presence mission. These four-month deployments typically involve more than 250 airmen and six bombers.

Officials say bomber crews are prepared to perform nuclear and conventional operations at all times. Charchian said his B-52 wing carries out a balanced program of exercises and inspections for both types of missions.



Photo by Richard VanderMeulen

**A B-2 takes off from Nellis. The stealth bomber is valued for its ability to reach and attack the most heavily defended of enemy targets.**

A recent nuclear surety inspection “put us at the height of readiness for our nuclear mission,” he said. The NSI is a base-wide evaluation of every aspect of the nuclear mission, from maintenance of weapons and storage safety to aircrew preparation and correct “control” procedures. A team of 55 Air Combat Command inspectors in October spent a week at the base performing the NSI.

The base also has periodic nuclear operational readiness inspections, which evaluate its ability to generate wartime sorties.

### High Standards

Nuclear weapons demand the highest standard of training and security, so the base has an NSI at least once every

18 months. Maj. Brett Wilkinson, who led the NSI preparation effort for the base, noted that Barksdale’s overall “satisfactory” rating was “the best you can get.”

When the NSI was completed, the 96th BS returned its focus to the skills needed for the upcoming Pacific mission. Planners “look at potential adversaries in the theater” and make indicated adjustments to force planning and training, said Lt. Col. Tom Hesterman, director of operations for the 96th.

Certain taskings are different for the Pacific mission, he said. The deploying crews focus on conventional skills, such as non-nuclear cruise missile operations and low-altitude mine-laying, all while remaining “on tap” for possible taskings from US Strategic Command.

Even at the height of conventional preparations, the B-52 units will still be conducting small exercises for STRATCOM, said Charchian. When the 96th BS returns from Guam in the spring, it will begin its spin up for the next nuclear operational readiness exercise.

“The priority ... when they come back from a deployment is to focus on nuclear training,” Elder said. “Then, as you’re getting ready for deployment again, you focus on the requirement” for that particular mission.

“We kind of alternate between the nuclear and the conventional” focus, Charchian said, but “it is not tiered readiness; we are always ready to do both missions.” ■



USAF photo by MSgt. Lance Cheung

**SSgt. Kory McLeod inspects the wingtip of a B-52. USAF’s nuclear-capable bombers prepare equally for nuclear and conventional missions.**