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By [Rod Powers](#), About.com

Cheyenne Mountain Air Force Station

A Look Inside NORAD

For all its technological majesty, the trillion-dollar North American air warning network, with connections spread around the world, could best be personified by one innocuous cloth-bound log book resting on a counter.

Labeled "FAA Log," the handwritten record of out-of-the-ordinary happenings for aircraft monitored by the Federal Aviation Administration — like the airline passenger who decided to climb on the beverage cart and use it as a toilet — is integral.

The inch-thick record is a chilling reminder of the air warning mission, which is now the most public portion of the Cheyenne Mountain operations center's charge. But there's more to this mission and to this team of aerospace sentinels than what goes on in the air-breathing world.

Housed on the grounds of Cheyenne Mountain Air Force Station 7,000 feet above sea level near Colorado Springs, Colo., the operations center gave mutually assured destruction and Matthew Broderick fame in "WarGames." It's the epicenter for a worldwide network of satellites, radars, sensors and 5,500 multinational, multiservice military and civilian guardians watching over North American air and space.



Staff Sgt. Brent Lanier, an emergency action controller inside Cheyenne Mountain, watches North America's skies with the help of a piece of software called Flight Explorer (shown in background), tracking thousands of aircraft flights each day. *Official Air Force Photo by Tech. Sgt. John E. Lasky*

Canadian and American national defense officials realized they needed a continental home alarm system to track Soviet bombers in 1956. A year later, Russia launched Sputnik I, and Defense Department leaders added the ballistic threat to the center's mission. They broke ground in 1961 and opened the \$142 million facility nestled in 2,000 feet of granite in 1966.

Cheyenne Mountain is the worksite for three major commands: the North American Aerospace Defense Command, formed in 1958 with combined U.S. and Canadian forces; Air Force Space Command, created in 1982; and the U.S. Space Command, created in 1985. Scattered throughout Colorado Springs and surrounding towns, Cheyenne Mountain forms the Orion — the warrior — of the DOD's space force constellation.

For four decades, its mission went relatively unmodified. Then one morning, hijackers used four passenger airliners as weapons of mass destruction and changed the playing field.

"Before Sept. 11, our focus was outward," said Col. Steve Allen, deputy director for operations at Cheyenne Mountain and a 22-year veteran of space operations. "Now there's a whole new ballgame. If we don't do our job, the consequences are pretty severe."

A new focus

Along with Russian bombers and drug runners coming from the outside in, the air warning center's

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flight-suit garbed military air weapons controllers now watch North America's "inner space."

Stood up days after the Sept. 11 incidents, this outside-in watch has controllers watching a computer monitor that, thanks to radar

and sensor data, draws a picture of the North American continent, Alaska and Hawaii. Over the top of the map crawl thousands of pixel-small dots, representing some of the more than 12,000 aircraft that fly throughout the continent each day.

Controllers see at least one unidentified aircraft daily, called a track. To assist them in identifying the track, controllers contact the Continental United States NORAD Region at Tyndall Air Force Base, Fla., which gathers data from one of the three Air National Guard-run air defense sectors. They also work closely with a newly installed 24-hour FAA representative who can reach out to the administration's 20 centers across the country.

The region and the FAA feed supplemental data back to the air warning center.

They analyze it and attempt to identify the aircraft. If the track still cannot be identified, NORAD will scramble jets to chase it. All of this happens in about five minutes.



Cheyenne Mountain Air Force Station doesn't look like much from above. That's because the combat operations center — the installation's nerve center — is hidden beneath more than 2,000 feet of granite. *Official Air Force Photo by Tech. Sgt. John E. Lasky*

Inside Cheyenne Mountain

The path to Cheyenne Mountain Air Force Station is a thin winding road. At one point you travel so high, you swear you can see Nebraska. A thick yellow line painted on the asphalt serves as the first reminder that you've left Colorado Springs and entered the installation. Then come the metal gates, barbed wire and security forces in sport utility vehicles to anchor that feeling.

Entry inside is more like attending a professional sports event or going to a theme park. After parking their cars and following a thorough screening, including baggage X-rays and metal detectors, workers — most in green flight suits or BDUs — catch the blue bus in. About 210 people work in the operations center.

The bus winds through a long granite tunnel, carved in the early 1960s. It pauses at, of all things, a stop light inside the mountain. Then it finds its stop and the passengers walk in.

The space feels more like a submarine than typical military office digs. The hallways are narrow, white and without ornament. Work areas look more like business offices once you reach them, some with cubicle farms and others with technological consoles. In between some of the walls and floors, you can peer into the heart of the mountain, seeing the rock and foundation.

The main briefing room doubles as Gen. Ralph "Ed" Eberhart's office and includes a pullout bed and other facilities in case he needs to stay the night. Eberhart serves as North American Aerospace Defense Command and U.S. Space Command's commander in chief. He also leads Air Force Space Command.

While controllers identify most tracks, not all aircraft are identified. In 2000, there were 115 remaining unknown tracks and 179 in 2001.

On Sept. 11, there were more than 50 people training inside the battle management warning center during a NORAD exercise. Shortly after the second airliner smashed into World Trade Center Tower No. 1, the exercise ceased. The mountain's massive blast doors closed as a protective measure for the first time in more than 20 years, and the inner space watch began.

As an air warning center controller team crew chief that morning, Tech. Sgt. John Sterling expected a day of "the usual." Nothing, he said, prepared him for the surreal events that unfolded in front of him.

"I've never seen anything like it," Sterling, a 15-year Air Force veteran, recalled. "For impact, on a scale of one to 10, it was an 11."

Sterling's team and everyone who remained behind from the exercise moved "at light speed." In addition to his regular duties, Sterling coordinated the first medical aerial evacuation flights into Washington, D.C., and New York City that morning.

"Everything we did that day mattered," Sterling said.

Cheyenne Mountain buzzed like a hive of bees. In the command center, where aerospace data merges and forms the big picture for American and Canadian decision makers, Staff Sgt. Brent Lanier, an emergency action controller, believed the day couldn't get more frenzied.

The command center looks nothing like its "WarGames" counterpart, save the multiple screens monitoring any number of events around the world. Each warning center is filled with computers, klaxon horns, flashing lights and wooden consoles.

The air is recirculated, except in the entry tunnel. There it's just cold. The water comes from a reservoir — the complex uses 1.5 million gallons in each of the four reservoirs, but only one is for drinking. The structure rests on more than 1,300 three-foot high steel springs, each weighing more than the entire Denver Broncos' starting defensive line.

It's a small city, complete with a base exchange, chapel and other amenities. Many believe the Air Force owns the whole mountain. In fact, the station rests on 500 acres while the inside complex occupies about five acres. People believe the antenna towers and satellite dishes do something classified or top secret for Cheyenne Mountain, but in reality, they belong to commercial owners.

The operations center was built to withstand a limited nuclear strike. The springs would help dampen the explosion. Those 25-ton steel blast doors? They hadn't been closed for great lengths of time since the early 1970s, but they were shut Sept. 11 for almost three hours, the byproduct of a possible threat to the mountainside complex.

About 15 percent of the force here is Canadian, the remainder is U.S. military.

The operations center and everything inside runs on power generated from the city of Colorado Springs. If all power goes belly up, the complex can run on a series of industrial-sized batteries for about 15 minutes until six diesel-powered backup generators are brought up.

Then while coordinating information between the center's leadership and national command authorities, Gen. Ralph "Ed" Eberhart, the leader of all three space commands, asked Lanier to do something he'd never done before — make a direct call to Secretary of Defense Donald Rumsfeld. Lanier later sent out a message with an alteration to the nation's defense condition, or DEFCON, status.

"I'd sent out false DEFCON messages during exercises, but I never thought I'd have to send out an actual DEFCON change message — but I did. It was frightening."

Multifaceted watchers

While the United States' inner space mission blossomed, and its handlers were cast into the world spotlight, Cheyenne Mountain's missile and space watch role continued. Since the early 1990s, military space use has grown in importance. Eberhart emphasized this and his commands' role in the United States' war against terrorism in October 2001 during a visit to Malmstrom Air Force Base.

"Whatever this nation does, wherever they do it, they're not going to leave home without us," he said. "The capabilities we provide ... are very important in the ongoing Operation Enduring Freedom."

To that end, Cheyenne Mountain's missile warning center now tracks strategic and theater missiles as well as space launches, from the multiple warhead-topped ICBM to the theater-based Scud missile. Big or small, the center has less than five minutes to assess it. The missile alert, called a "quick alert," appears as a thick red circle on one of the command center's large warning screens. Defense support program satellites and controllers at radar stations can then track its path, projecting when and where it will land.

"It's like watching a baseball being thrown. Eventually, you know where it's going to land," Allen said.

But there's more to the missile watch than spotting and tracking. Allen said there are rigorous safeguards to ensure the system and its people are working properly. That includes the use of two independent sources, called "dual phenomenology," to discover if a missile threat to North America is real.

Space control is a tad tamer. Currently, the United States and Canada are the only countries cataloging what's up there. All told, more than 8,300 objects are orbiting Earth. Approximately 7 percent of those, about 580, are active, including a wealth of commercial television, wireless telephone and automated teller machine data satellites. More than 27,000 objects have been cataloged since 1957, and controllers provide more than 100,000 location updates each day.

Cheyenne Mountain's controllers are also good pathfinders. Every time a space shuttle goes into orbit, controllers create a "best flight path" simulation, keeping the shuttle crew from bumping into orbiting

objects.

North America's new charge

Today, Canada and the United States can scramble any of more than 200 Canadian and U.S. intercept fighters and airborne early warning aircraft standing watch from the southern edge of Alaska to the tip of Florida. That number was 20 on Sept. 11. Their pilots wait on alert and fly undisclosed combat air patrol missions over major cities across North America [See "Homeland Patrol"].

Maj. Gen. Larry Arnold, who leads the mostly Air National Guard-staffed 1st Air Force, the numbered air force in charge of those aircraft, said the ability to quickly meet any threat is paramount.

"We work tirelessly to meet our nation's requirements for rapid response to any air sovereignty threat," Arnold said. "This rapid-response capability is a reflection of the teamwork and professionalism of our service members. When we're called upon, we're ready to act — and act fast."

For Arnold and the entire aerospace security team, acting fast means a continuance and improvement of the air, space and missile watch missions, even if it means writing about disruptive passengers and weird aircraft happenings in a cloth-bound federal diary. Allen, whose three decades of service has taken him from the missile silo to the Cheyenne Mountain command center, said Canadians and Americans expect and deserve the best aerospace sentinels their nations can provide.

"For about 200 years, we thought we were safe," Allen concluded. "You'd like to think that after all America has been through and given to the world, we've earned that."

Above Article by Staff Sgt. Jason Tudor, Published in *Airman's Magazine*

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