

# Cavalier radar installation tracking space junk

By Tom Pantera  
The Forum

Mark Lewis wants you to know that the chances of a satellite falling out of space and on your head are very, very remote.

He knows what he's talking about. After all, the Air Force lieutenant is a crew commander at a Cavalier, N.D., radar installation that tracks space debris.

The Cavalier Air Force Station is located about 15 miles west of town. Twenty-five Air Force personnel and 150 civilian contractors work at the station, whose primary mission is to provide early warning of missile launches from both land and sea bases.

But the site has a more esoteric purpose as well — tracking and cataloging every satellite and every piece of debris orbiting the earth, specifically around the North Pole.

The installation's radar equipment can track a basketball-size object 2,000 miles up, Lewis says. It is used to track satellites, launches and even debris as part of a worldwide space surveillance network. It normally does not track NASA flights unless they orbit the pole, he says.

The data collected at the station is used to maintain the satellite catalog, a listing of every object launched into space since Sputnik in 1957 — all 22,000 of them.

Of those, 6,000 still are in orbit,

Lewis says. The oldest is item number eight in the catalog, which was launched in the late 1950s. There are perhaps 300 to 400 active satellites; the other objects are inactive satellites still in orbit and various pieces of celestial flotsam and jetsam.

The purpose of keeping the catalog is simple, Lewis says: "So when we do a space launch, we don't hit it."

The station tracks satellites in part by knowing where they are likely to be in the first place. The Cavalier station and a dozen others with the same mission feed information into the Cheyenne Mountain Base in Colorado, which

maintains coordinates and predicted paths on all objects in orbit.

Those paths are given to operators at the Cavalier station, who calculate where the objects will be and match their observations with their calculations.

If no object is found — if, for example, its orbit has started to decay and it has begun its descent to earth — the radar is used to find it.

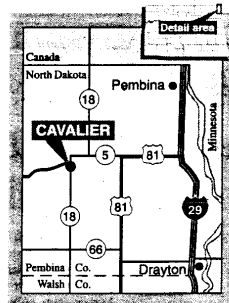
If the radar finds anything unexpected, Lewis says, that information goes back to Cheyenne Mountain, where specialists interpret it. "We're mostly information gatherers," he says.

If an object is beginning to fall from space, Lewis says, Cavalier station personnel track it and try to predict where it will land.

The satellite catalog carries an expected decay date, he says, and the United States has agreements with the former Soviet Union and China to exchange information so nobody will mistake a falling satellite for an incoming nuclear missile.

"Most stuff burns up in the atmosphere," Lewis says. Anything that doesn't usually lands in the ocean.

"Stuff's not going to fall on your house," he says.



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