

# Military Plans New Methods of Stopping Spy Satellites

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3/ 4: Military Plans New Methods of Stopping Spy Satellites

By WILLIAM J. BROAD

The U.S. government, having authorized a wave of commercial spy satellites that can peer down from the heavens to pry into all kinds of secrets on the ground, is now exploring ways to destroy such orbital eyes in time of war.

The Pentagon is spending \$50 million this year to develop an anti-satellite weapon, up from \$30 million last year. The goal is to prevent foes armed with orbital cameras from spying on American weapons and troop movements during combat, which would allow the United States to dominate the world of orbital reconnaissance at will.

Such spying is seen as weighing heavily in wartime in determining who wins, as it did in 1991 during the Persian Gulf War. But some experts say interlopers and the threat they pose could be dealt with in ways more peaceable than blasting them out of the sky.

The Defense Department last week announced a \$35 million payment to an anti-satellite contractor, the Rocketdyne division of the Boeing Co., and took the opportunity to note the "growing spread of space-based photography." That trend, it added, has raised serious concerns that "hostile satellite reconnaissance could be used against the United States and allied military forces in the future."

The program of anti-satellite research, run by the Army, envisions rockets based on land that would blast into space and fire small projectiles called kill vehicles toward targets. The kill vehicles smash into satellites and destroy them by force of impact, though not so forcefully as to generate clouds of whirling debris that might damage friendly spacecraft in nearby orbits.

This spring at a laboratory in California, a prototype kill vehicle, slightly bigger than a fire hydrant, is to power up its jets in a test of maneuvering toward an orbital target. Flight tests into space are under study and tentatively scheduled for 1998 and 1999.

"The program is going well," William C. Reeves Jr., head of the weapons directorate of the Army Space and Strategic Defense Command, based in Arlington, Va., said in an interview. "We're marching."

The program's advocates want a force of 10 anti-satellite weapons ready for emergency use by 2000, a time when analysts expect that the number of spy satellites in orbit may have risen to as many as dozens, including both military and commercial types.

The United States, however, is uncertain about the deployment of these weapons. The White House, which in 1994 approved the greatly expanded commercial use of spy satellite technology, starting a rush of global emulation, is ambivalent about anti-satellite arms and is seeking no funds for the Army effort, formally known as the Kinetic Energy Anti-Satellite Program.

But Congress has gone ahead and financed the effort at a significant level for two years and is expected to continue to do so, citing a growing need for the military to be able to blind unfriendly eyes in orbit.

"To stop now would be stupid," said Sen. Robert C. Smith, a Republican of New Hampshire on the Senate Armed Services Committee and one of the program's main supporters. "The president has been aggressive to get the photo technology out there," Smith said in an interview. "But we could be victimized by it. If Saddam Hussein had that kind of technology during the gulf war, he could have done a lot of damage."

Other federal and private analysts say that the threat of hostile espionage is overstated and that anti-satellite weapons might engender a costly arms

race in the heavens, with ever-widening spirals of moves and countermoves. A better approach, they say, is international diplomacy aimed at developing rules of the road for the new era of ubiquitous reconnaissance.

"What's needed is formal mechanisms for shutter control," said John E. Pike, head of space policy at the Federation of American Scientists, a private group in Washington. "This is no different than embargoing the sale of other types of weapons in an armed conflict."

For decades, the superpowers had a monopoly on orbital spying. First the United States, then the Soviet Union and China, launched fleets of spy satellites and said nothing publicly about their workings and images, which were sharp enough to spy on tanks, ships, planes and troops from orbits hundreds of miles high. But the end of the cold war ended the secrecy. In 1994, the Clinton administration, eager to aid aerospace companies facing huge layoffs, let the spy technology go commercial. The first satellite is scheduled to fly into orbit in April or May; another launching is planned in December and perhaps a dozen in all in the next decade, creating a civilian adjunct to military fleets.

Many experts say the biggest market for the commercial spies will be foreign governments that cannot afford their own reconnaissance systems.

The United States currently has no declared means of shooting down such satellites, though experts speculate that it may have secret ways that might be tried in an emergency. No East-West treaty prohibits tests of anti-satellite arms in space.

The kinetic weapon now gaining favor as a satellite killer is based on research undertaken during the cold war. In the 1970s and early 1980s, the United States struggled to build a small homing rocket fired from an F-15 jet fighter that would soar into space to knock out targets. In an orbital test in 1985, the weapon smashed an old satellite, creating about 285 trackable pieces of whirling junk. The \$4.2 billion program was canceled in 1987, a victim of controversy over its provocative mission and technical problems.

The Bush administration began a new effort in 1990. This time, the kinetic weapon was to be based on land and was to have a much larger rocket booster to give it greater range. Moreover, the kill vehicle was to deploy a large flexible swatter many times its own size that would destroy a target but leave it intact, eliminating the clouds of debris.

After \$235 million, the program was canceled in 1993, during the military contraction after the cold war.

That effort has been resurrected in the last two years by Congress, which is intent on completing the development job. In theory, financing would go from \$50 million this year to \$80 million in 1998 and \$45 million in 1999, for a total of \$205 million from restart to weapon fleet.

A brochure put out early this year by Rocketdyne, the prime contractor, says the nation faces a threat now, even before the first commercial spy satellites start flying. It lists Russia, Ukraine, China, India, France and the United Arab Emirates as either having surveillance craft or taking steps to get them.

"Today," it says, "any country can buy space-based imagery, satellites, satellite technology, ground stations and space launches from a variety of sources." Such proliferation, it adds, "will enable our enemies to inflict heavy losses to U.S. forces in future conflicts."

Architects of the new commercial spy craft are well aware of the anti-satellite effort and wary of issues and public comments that might inhibit sales. But one official at a Western company, who spoke on the condition of anonymity, said the weapon work was an unintentional nod to the importance of the emerging field.

"It's a great endorsement," he said.

The official also sympathized with the United States for trying to address a situation that might spiral out of control in a military crisis.

"Clearly, at the turn of the century, there are going to be a lot more birds up there," he said, referring to spy satellites. "There has always been this theory that getting more information into more hands makes the world a safer place. It's an interesting concept. I'd love to think it's true. But we don't really know. The bottom line is that if these things fall into the wrong hands, we're probably in trouble."

Robert Bell, a senior director for defense policy at the White House

National Security Council, was quoted last year by Defense Week, an industry newsletter published in Washington, as saying: "This Administration sees a requirement for a space-control capability but doesn't necessarily believe at this time that the Army program is the appropriate solution. It is worthwhile to carry out the research but not to turn it into an acquisition program."

Bell added that experts increasingly saw a variety of options for knocking out a foe's satellites, including hitting "ground nodes and data linkages," not just the craft themselves. Some experts have suggested that the electronic jamming of signals could silence all but the most robust satellites.

But other experts see the kinetic weapon as a big stick that could put teeth into diplomacy aimed at eliminating orbital spies in wartime.

"What happens when we're feuding with Iran and their ally is China and they say drop dead?" asked James T. Hackett, a military expert on the National Security Council during the Nixon administration and now a backer of anti-satellite technology at the Titan Corp. in San Diego.

"You can threaten to shoot down the satellites," Hackett said in an interview. "That gives you a lot of leverage, whether you're dealing with a commercial company or a country or a neutral."

But Pike, of the Federation of American Scientists, which opposes the anti-satellite effort, said such confrontations were unlikely.

"I see no credible scenario on the horizon for which this weapon is needed," he said. "All these satellites will either be in friendly hands or with countries we are unlikely to fight. The weapon is basically a solution in search of a problem."

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[ [Satellite Imagery](#) ]

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