Laser Pointer Abuse Threatens Air Safety

By David A. Fahrenthold and Timothy Dwyer
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To astronomers, the new breed of hand-held laser pointer is a way to write in the sky, its two-mile-long beam allowing them to trace constellations and point out individual stars. To a lost hiker, the laser is a lifeline to a search and rescue team overhead. To a "Star Wars" fan, it is a prop for playing a lightsaber-wielding Jedi knight.

But to a pilot in a darkened cockpit, the pointer's bright green beam could be something very different -- a disorienting and even blinding blast of color.

"It's kind of like a flashbulb going off in your face," said Steve Luckey, chairman of national security for the Air Line Pilots Association.

Over the past month, pilots have reported more than 30 incidents of laser beams being trained from the ground into their aircraft, prompting warnings from federal authorities and new reporting guidelines. One of the incidents occurred in Anne Arundel County, where a man is charged with shining a laser beam at a police helicopter on New Year's Eve.

The controversy has led to a new focus on the beam machines -- gizmos seemingly stolen from science fiction that recently have become both cheap and readily available in stores and on the Internet.

Lasers are ubiquitous in American life. A laser tells a grocery clerk the price of a loaf of bread. Lasers are used in stores to keep track of inventory, in homes to help hang pictures straight, on automobile assembly lines for welding, in operating rooms, in the military for laser-guided weapons and in everyday electronic devices such as CD players.

The government does not regulate sales of lasers, and no laws restrict their use, though laser pointers have been banned from many public places, such as sports arenas.

The Food and Drug Administration regulates the manufacture of laser products and rates them in four categories based on the power of the beam. Beams in CD and DVD players are in category 1, the lowest. Laser pointers are in category 3, and industrial laser equipment is in category 4.

What's changed is the availability of powerful laser pointers. About a dozen years ago, a pointer with a red beam sold for about $600. Today, consumers can get a similar one for a key chain for $3.95 -- batteries included.

The popularity of red laser pointers is now being overtaken by green pointers, which are visible over a much longer range.

"The human eye responds to the green light approximately 50 times better than the red laser pointer, and that is why it appears so bright," said Richard Hughes, a member of the Florida-based Laser Institute of America, who has a doctorate in physics and holds 23 patents in the field of lasers.
The difference is striking: The old red pointers had a range of about a half-mile at best, experts say. The new green ones -- powered only by AAA batteries and no bigger than a Sharpie marker -- can send their beams more than two miles.

In recent years, prices of green lasers have fallen steeply -- from $400 each in 2002 to as little as $59 now.

As the lasers have become less expensive, they have become far more popular, said John Mueller, president of Beam of Light Technologies in Clackamas, Ore. Mueller said he is selling 1,500 to 2,000 a month.

"People are moving to green," he said.

Like their predecessors, green laser pointers are sold for a variety of legitimate purposes. Businesspeople, for instance, use them in presentations; outdoor enthusiasts carry them in case they get lost.

But just as red lasers were used by drug dealers to harass police helicopters and by sports fanatics to distract basketball players taking free throws, green ones have been put to ill use. And with their longer range, experts say, green lasers pose a real danger because they can render pilots temporarily blind.

"You're in an airplane, you're on final approach and suddenly you can't see," said Dan Kidder, a spokesman for the National Air Transportation Association, a trade group that includes charter airlines. "You can't see your instruments. You can't see your runway. There's the potential for a major accident."

According to federal authorities, there have been about 400 reported instances of lasers being aimed at aircraft since the early 1990s.

But they started to receive national attention late last month, after a man in New Jersey allegedly aimed a laser at a plane landing at the Teterboro, N.J., airport. He has said he was pointing out a star to his 7-year-old daughter.

Although the incident in Anne Arundel occurred Dec. 31, it wasn't made public until this week. County police said their helicopter was searching for a hit-and-run suspect when a "high-intensity" green beam suffused the cockpit, distracting the officers and forcing them to change course.

Police said they traced the beam to a bonfire in woods near Pasadena. Edward Pannell, 38, admitted to pointing the laser at the helicopter but said he didn't think it was a big deal, according to police.

He now faces harassment charges that carry a combined penalty of 10 years in prison and several thousand dollars in fines.

Federal authorities have issued a general warning to pilots, who are now required to report encounters with lasers.

Authorities say that terrorist organizations may have discussed using lasers to bring down a plane but that none of the recent incidents has been found to have a terrorism connection.

Jack Hess, acting assistant special agent in charge of counter-terrorism for the FBI, said the apparent increase in incidents in the last month might be caused by the new reporting requirements.

"There are more incidents being reported, but we're not sure if there are more incidents," Hess said.

The military already has taken precautions.
Navy contractor Optra Inc. of Topsfield, Mass., designed a laser-detection device for Navy and Marine planes that is about the size of a matchbox and runs on AA batteries. It detects laser beams and warns pilots with a green, yellow or red light, depending on the strength of the beam.

Company President James Engel said the device has a flash memory card that holds a picture of the beam's origin and uses the Global Positioning System to find the plane's location when the laser is detected.

At companies that sell laser pointers, officials say they are concerned about the aircraft incidents and have warned customers not to point the lasers at other people.

But the controversy hasn't hurt business. In fact, John Acres, whose company, Bigha, sold the laser that was pointed at the plane in Teterboro, said the attention has brought in new customers.

"We've got more orders. We are sold out," said Acres, whose company is in Corvallis, Ore. "The whole industry has shot up because of this."

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