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# A rising awareness that balloons are everywhere in our skies

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By WIlliam J. Broad

*The New York Times*

The United States is going to need a lot of missiles if its fighter jets are to shoot down every stray balloon that sets off a radar warning in American airspace.

“At any given moment, thousands of balloons” are above the Earth, including many used in the United States by government agencies, military forces, independent researchers and hobbyists, said Paul Fetkowitz, president of Kaymont Consolidated Industries, a maker of high-altitude balloons in Melbourne, Florida.

Fetkowitz and other experts say this flotilla may explain the origins of some of what John Kirby, a National Security Council spokesman, called the “slow-moving objects at high altitude with a small radar cross section” that were shot down over the United States and Canada in recent days.

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Since Feb. 4, when the United States shot down a large Chinese surveillance balloon that was reportedly flying at an altitude of about 12 miles as it crossed the North American continent, federal officials have sought to enhance radars and atmospheric trackers so they can more closely scrutinize the nation's airspace. Balloon experts say the upgrade might generate a paralyzing wave of false alarms.

On Friday, fighter jets in waters over Alaska fired on an object the size of a small car that a Defense Department official said was most likely a balloon. The next day, an American F-22 attacked a cylindrical object over the Yukon Territory in Canada that was smaller than the Chinese surveillance device. On Sunday, an octagonal structure with strings hanging off it and no evident payload was hit over Lake Huron. It had first appeared over Montana days before.

Those three objects posed threats to civilian aviation, Kirby said, but they were not transmitting communications signals.

"This is a total shocker," Terry Deshler, an emeritus professor of atmospheric science at the University of Wyoming, said of the recent downings and the enhanced-tracking effort.

"For years you didn't hear anything about balloons," he said. "Now, we're on the lookout for any kind of flying object."

Fetkowitz said he worried that government officials in Washington might not realize how crowded American skies had become with highflying balloons. "There's a concern that the right hand doesn't know what the left is doing," he said of military and civilian activities.

Each year, around 60,000 highflying balloons are launched just by the National Weather Service, the agency said. They rise into the stratosphere, a layer of the planet's atmosphere that extends to a height of roughly 30 miles. The balloons used by the Weather Service are designed to rise 20 miles up — far higher than the altitude of any of the four objects detected in the past 10 days.

Fetkowitz noted that Alaska — where a U.S. fighter jet shot down the unidentified flying object on Friday — had more weather-balloon launching sites than any other state.

The Weather Service's balloons gather data that keeps passenger jets out of harm's way and lets experts predict the likely onset of violent storms, Fetkowitz said. "It's all about life safety," he added.

Then there is NASA, which runs a program from Palestine, Texas, that over the years has lofted more than 1,700 large balloons on scientific missions that can last for months. The balloons fly up to 22 miles high, and the payloads weigh up to 4 tons, about that of three small cars. Some carry sensors that explore the health of the ozone layer, which protects living things from the sun's ultraviolet rays.

Experts in the balloon industry said that DARPA, the secretive defense agency in charge of advanced technology development, was experimenting with a new class of long-duration balloons for battlefield use that would act as communication relays. But Randolph Atkins, an agency spokesman, said neither he nor his boss knew of any such project.

The United States is not alone in its frequent use of balloons. Many of the 193 member states and territories of the World Meteorological Organization, based in Geneva, regularly send up stratospheric balloons in large numbers, some designed for long-term missions that collect data from around the globe.

"It's endless," Fetkowitz said of the array of different balloons and programs.

Fetkowitz said the weather balloons lofted by National Weather Service were designed to burst at their highest point and break into fine debris that cannot endanger wildlife down below. He added that some, however, were underinflated and never flew high enough to burst, and thus could wander about aimlessly with the winds.

"A balloon launched in Denver," he said, "might land in New Jersey."

Users of balloons for scientific, commercial and military purposes have faced criticism in the past. For years, environmentalists have said that exploded balloons have fallen back to earth and imperiled natural landscapes, and particularly sea life.

"It's a major scandal," said Marilynn Mendell, a public relations consultant who has criticized the environmental effects of stray weather balloons for many years. She pointed to balloon debris she found on a beach in 2016 as an example. "The strings on these balloons are huge, long things," she said. "It's an international problem."

Fetkowitz of Kaymont Industries said that such criticisms had kept balloon users from speaking out and engaging with the public. "A lot of the scientists out there are keeping their heads down," he said, even though they know "they're doing the right thing" for public safety.

The silence of balloon experts might explain why no owner of a shot-down object, with the exception of China, is known to have come forward publicly to discuss the incidents or to complain.

Not all balloons are used for strict scientific or commercial purposes. A bizarre event happened, Fetkowitz said, when a customer used one of his company's balloons to loft a device that played aloud the Pink Floyd album "The Dark Side of the Moon." Fetkowitz said a different balloon carried a child's Thomas the Tank Engine toy to stratospheric heights.

"We do vet our customers," he added. "We've turned away people. We don't want to do business with a guy who wants to send up a gun."

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