Questions and Answers about Full-Body Scanners

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WASHINGTON (AP) -- Travelers still getting used to removing their shoes in public and pouring shampoo into tiny bottles may soon have to adjust to something new in the airport security line — giant machines that that scan their bodies for anything a terrorist might use to cause harm during a flight.

High-tech, full-body scanning machines are already in use at a handful of airports, but they may become more common as security officials around the world respond to the attempted attack on an airliner on Christmas Day.

The Netherlands announced recently that the scanners would be used for all flights heading from Amsterdam's airport to the United States, and an official in Nigeria later said that country planned to buy full-body scanners too.

What exactly are these machines, and how do they work? What are the drawbacks to using these types of scans? Here are some questions and answers about the devices.

Q: How do these full-body scanners work?

A: The two main types of scanners are "millimeter wave" and "backscatter" machines. Millimeter wave units send radio waves over a person and produce a three-dimensional image by measuring the energy reflected back. Backscatter machines use low-level X-rays to create a two-dimensional image of the body.

___ Q: What sorts of things can they find?

A: The machines are designed to uncover what a physical pat-down could turn up but a metal detector wouldn't find. That includes plastic or chemical explosives and nonmetallic weapons in a pocket or strapped to someone's body. The machines would also find guns, knives and other metallic objects that would set off a metal detector.

___ Q: What can they not find?

A: Generally, the machines can't find items stashed in a body cavity, so the scanners wouldn't stop at least one common smuggling method used by drug traffickers.

___ Q: How common are they at airports?

A: Because of fears that the scans infringe on travelers' dignity by revealing bodily contours, European officials have generally limited the machines to tests in airports or train stations.

In U.S. airports, the Transportation Security Administration has begun expanding the use of full-body scanning machines, although passengers can opt for a physical pat-down instead. The TSA has 40 in place, just bought 150 and plans to buy 300 more.

Six of the machines are being used instead of a metal detector at airports in Albuquerque, N.M.; Las Vegas; Miami; San Francisco; Salt Lake City; and Tulsa, Okla. The other 34 are used for secondary screening of people who set off a metal detector in Atlanta; Dallas/Fort Worth; Denver; Detroit; Indianapolis; Jacksonville and Tampa, Fla.; Los Angeles; Phoenix; Raleigh-Durham, N.C.; Richmond, Va.; and two airports in the Washington area: Baltimore/Washington and Reagan National.

___ Q: Is there a way to make the scans less revealing?

A: The technology has evolved to reduce the clarity of identifying details. The systems blur faces, or they produce body images that look like chalk outlines. Amsterdam's airport is moving ahead with full-body scanners after trying new software that projects a stylized image — rather than an actual picture — onto a computer screen. It highlights the area of the body where objects are concealed in pockets or under the clothing.

The TSA says it uses logistical methods to safeguard privacy. Full-body images are viewed in a walled-off location not visible to the public. The security officer assisting the passenger cannot view the image, and the officer who views the image doesn't see the passenger. If the officer viewing the image sees something of concern, he notifies the agent who is with the passenger to do further screening.

The machines can't store or print images, and the TSA says officers who view the images are not allowed to take cameras or cell phones into the screening rooms.

___ Q: How long does it take to be scanned?

A: The machines are getting faster but still can take up to 15 seconds to scan a traveler, which could make the process slower than using metal detectors.

TSA officials note that in some instances, these machines can be faster. For instance, people with medical devices that typically set off metal detectors wouldn't have to make multiple passes through the machine or be pulled aside for additional screening.

___ Q: Do security officials hope to use the full-body scanners on every person getting on a flight?

A: At the moment, that's probably not realistic — in the U.S. alone, there are 730 checkpoints with 2,100 security lanes at the nation's 450 airports, and there are thousands more lanes at airports around the world. Cost may be an issue — the machines can be $130,000 to $200,000 each.

For example, in Amsterdam, where the machines are already in place, the airport's 15 scanners won't be enough to screen every U.S.-bound passenger, so pat-down searches will still be used. It remains to be seen whether that strategy will be copied at other airports.

Q: Do the scanners pose health risks, especially for frequent travelers?

A: The TSA says the technology is harmless. Millimeter wave energy is common in the world, and the TSA says the scanners produce far less energy than a cell phone.

The X-rays in backscatter machines are weak; TSA says the radiation is equivalent to what a person gets in two minutes of flying on an airplane. If someone fears the technology, the TSA offers a physical pat-down.

Associated Press Writer Ann Sanner in Washington contributed to this report.

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