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Will New Airport X-Rays Invade Privacy?

By AUSTIN CONSIDINE

WITH each of the terrorist attacks in New York, Madrid and London over the last several years, new and increasingly complex questions have arisen for security experts, posing fresh challenges. One of the greatest debates now is between pushing security-related technical capabilities and protecting the right to privacy.

Among the most controversial technology being looked at by the Transportation Security Administration is the backscatter body scanner. The device - a boxy contraption that beams low-level X-rays through people's clothing - has received a lot of attention because of the explicit images of passengers' bodies it can produce.

This summer, for instance, Lori Borgman, a family humor columnist, wrote that such images were "bound to find their way to the break room, the Internet and the tabloids." The American Civil Liberties Union has called the backscatter a "virtual strip search."

As a result, the Transportation Security Administration has approached the deployment of the machines tentatively over the last several years. "I think that as we make the decision to roll out and go to pilot tests and move forward, we need to be sure we're doing it in a responsible manner," said the agency's chief technology officer and assistant administrator, Clifford Wilke. "A person's first experience with a new technology will determine their perception."

But there are signs that the T.S.A. is preparing to make its move. The agency said it did not have a specific timeline, but statements made in early August by the two manufacturers of the technology - American Science and Engineering and Rapiscan Systems, a division of the OSI Systems electronics company - indicated that the plans could be made public within the next two months.

One reason the agency may be ready to go forward is that it has found what some see as a middle ground between security and privacy: "cloaking" software that turns the explicit images into something resembling a generic chalk outline of the body, identifying plastic, ceramic, biological and other nonmetallic and metallic objects on the body. American Science and Engineering said it felt its cloaking software - first introduced in July during testimony before a House of Representatives committee - adequately addressed privacy concerns.

"If you look at backscatter images in their raw form, they're pretty explicit, no doubt about it,"
said Bob Postle, American Science's vice president of sales and marketing. But with the new software, he said, "it would be impossible to recognize from these images who we're talking about here."

There is little indication on how Americans would react to backscatter searches, either explicit or cloaked. There was a brief test in 2002 at Orlando International Airport, where backscatter was tried out along with several other emerging technologies, but the T.S.A. said the results were unavailable. According to Rapiscan, more than 90 percent of passengers searched while their machines have been being tried out at Heathrow Airport near London have chosen the backscatter over a pat-down.

Some still question whether a middle ground is possible, or even desirable. There are groups like the American Civil Liberties Union that maintain that even the cloaked images are too intrusive.

"There will have to be some significant evidence that you represent a threat" before a passenger should be scanned, said Barry Steinhardt, director of the technology and liberty program of the A.C.L.U. Such evidence, he said, could include the repeated tripping of a metal detector or passenger matches with a "legitimate watch list."

The A.C.L.U. has also suggested that the technology be used as a less intrusive alternative to body-cavity searches. But because a backscatter emits radiation strong enough only to pass through a person's clothes, it would not see into body cavities or body folds.

"It's looking for things hidden on the body," said Peter Kant, Rapiscan's vice president for government affairs. "So you don't want to penetrate the person at all, you just want to get through the clothing."

Since a backscatter's purpose is to detect both metallic and nonmetallic objects, manufacturers said the suggestion that backscatter be used as a follow-up to metal detection - the way physical pat-down searches are often used today - defeats the technology's advantages.

"It's the guy, randomly, that's not making the sucker go beep that you want to take a look at," said Peter Williamson, vice president for global sales of Rapiscan, who says that his company already supplies around half the country's airports with metal detectors.

Both manufacturers of backscatter machines also recognized that cloaking images can compromise detection abilities. American Science and Engineering, which, in their House testimony, released images produced by the cloaking software, acknowledged such a trade-off.

"There certainly is a chance to begin to miss some things that might be vital," Mr. Postle said. "So there's a balance between security and between the privacy issue."
BAA, the company that runs seven major airports in Britain, bought three Rapiscan backscatter machines in late July for use at Heathrow; the machines had been on lease. The devices do not use cloaking software.

"In Britain, they put a premium on security," said Mr. Kant of Rapiscan.

But Mr. Steinhardt of the A.C.L.U. said Americans did not have to take their cues from Britain. "The British are leading the world in creating a surveillance society," he said. "I mean, they've outdone America in that regard."

Radiation exposure is another concern for some. Both manufacturers’ machines fall well under voluntary standards put forth by the American National Standards Institute as well as limits outlined in a report by the National Council on Radiation Protection and Measurements in 2002. But scientists like David J. Brenner, director of the Columbia University Radiological Research Accelerator Facility, who worked on the report, say there is no completely safe level of radiation.

"If you multiply that very small risk by, shall we say, 700 million, which is the number of people, roughly, who use airports in this country, then you've got a significant public health issue that one should be concerned about," Mr. Brenner said. He cited particular concern for children - who he said can be up to 10 times more sensitive to radiation than adults - and for pregnant women.

Yet, the National Council on Radiation Protection and Measurements report says the levels of radiation from backscatters fall well within the acceptable, lower limits for children and pregnant women.

Mr. Williamson of Rapiscan suggested, as did many others in the industry, that various technologies and methods be continually rotated or even used in concert, in order to stay a step ahead of potential terrorists. "Like everything, it's got to be part of a layered process," he said. "I don't think there is a silver bullet out there in security."