

Bomb Sniffing . . . Gerbils?

Aircraft of U.S. registry experienced eight hijacking attempts during 1978 – the highest level since FAA began screening passengers and carry-on luggage in early 1973. In 1980, a second wave of hijacking began, this time by Cuban refugees who had arrived in the U.S. during the Mariel boat lift trying to return home. In fact, between August 10 and September 17, 10 hijackings to Cuba took place. In the wake of the growing hijacking threat, FAA researchers began to experiment with new types of security countermeasures.

One such program caught the attention and imagination of the press and public alike. In 1978, FAA awarded a \$100,000 research contract to David G. Moulton, an associate professor of physiology at the University of Pennsylvania's School of Medicine. In August 1980, the agency gave him a second \$50,000 contract to continue his research. Moulton, a world-renown expert on olfactory physiology, was a founding member of the Association for Chemoreception Sciences and the European Chemoreception Research Organisation. In 1972, he had undertaken a research program for the Air Force, "Factors Influencing Odor Sensitivity in the Dog."

Moulton's research, based on an experimental program in Canada, focused on teaching gerbils to sniff out bombs in luggage. The rodents, according to Moulton, made ideal house pets – small, cuddly and lovable. They also had a very high sense of smell, were easily trained, and expected little in return for their work.

Moulton's experiments involved about 30 gerbils put in a box designed for behavior modification experiments for a half-hour a day. The box had three portholes, each covered with a metal door. Purified, odorless air was blown from two of the portholes when open. The third blew air mixed with an odorous chemical, amylacetate, which smelled like bananas. The gerbils pressed a lever when they thought they detected the odor. A correct choice was rewarded by a drink of water, "which is a big deal if you are a gerbil," one reporter explained. If the gerbil made a wrong selection, the door closed and the animal had 30 seconds to think about what it did wrong before it was confronted with a new combination of air and smells.



Although a serious researcher, Moulton took skepticism and sarcasm about his work in stride. When asked by reporters about his gerbils, Moulton explained, "We don't expect gerbils to be any better than dogs, but they are certainly cheaper and easier to train. Also, they can fit into smaller spaces, and you can use more of them." He said that dogs have a short attention span and require walking, petting, scratching, and emotional involvement. But give a gerbil a clean cage, good food and water, and you have a happy, portable civil servant.

The press had fun with the whole idea of bomb-sniffing gerbils. One envisioned a corps of tiny unformed rodents on duty at airport terminals. Another saw gerbils on leashes searching airport property. If Moulton's experiment worked, FAA planned to station

gerbils in small black boxes at airport checkpoints. If a passenger had explosives on his person or in his luggage, the trained gerbil would press a button that would turn on a red light and ring an alarm. The gerbil boxes could also be used in baggage areas and inside planes.

A novel idea, bomb-sniffing gerbils did not make it beyond the research stage. Although they had a highly developed sense of smell, and could detect certain vapors given off by explosives, Moulton found their sense of smell unreliable, especially if exposed to odors that masked the subtle smell of explosives.

In reporting on the experiment, the *Washington Post* reported it had learned the FAA recently “harnessed a herd of gerbils to detect explosives. But, the agency sadly reported to Congress, the furry Sherlocks ‘could not meet FAA requirements with regard to sensitivity to the odors involved.’” The reporter asked, tongue in check, “Will this vicious exploitation of our fellow mammals never cease? How'd you like to poke your snout into some stranger's Vuittons for half a head of lettuce a day?”