

Latest truck stopping technology has applications in site protection

February 23 2005

Government buildings, power plants and other sensitive facilities that could be attacked by a hijacked tanker or truck may soon see an added layer of protection, thanks to a new variation of Lawrence Livermore National Laboratory's Truck Stopping Technology.

The Laboratory, part of the Department of Energy's National Nuclear Security Administration, today unveiled its latest version of the technology, a remote-controlled device that brings trucks to a screeching halt. The device was commissioned by and created for the California Highway Patrol to prevent tankers and other hijacked vehicles from becoming "bombs on wheels."

By enabling remote control technology, the device can be used to protect buildings such as government facilities, power plants and stations, and other areas where sensitive materials or critical infrastructures are housed.

"This technology is another great example of how the Laboratory is working to ensure homeland security," said Director Michael Anastasio, who along with CHP Chief Adam Cuevas unveiled the technology.

The remote-controlled device marks the fourth generation of the Truck Stopping Technology. When it debuted in 2001, it was a simple impact mechanism, in which a CHP cruiser would tap the back of a trailer or tanker to trigger a guillotine-like device to shear the air brakes and stop the truck.

Since that time the device has gone through rigorous testing to develop tamper-resistant and fail-safe systems.

The remote controlled variation works much like a child's radio-controlled toy. In a roadside emergency, patrolmen would use a hand-held controller to activate the device, which now sits behind the cab of a tractor trailer, to deploy the air brakes and bring the car to a screeching halt.

Laboratory researchers have taken the remote technology one step further by using a system of antennas that could be placed around various buildings. If a runaway truck tried to crash through the gates, the antennas, operating on a continuous signal, would activate the technology once the truck passed by, preventing any attack.

“This is a great way for facilities that have trucks routinely coming on site to add a layer of protection,” said Dave McCallen of the Lab's Engineering Directorate. McCallen is the principal investigator on the project. McCallen envisions placing the technology on a vehicle at a facility's inspection point. The device would be in a locked and tamper-proof box that could be removed once the truck left the facility.

McCallen and his team have taken into consideration interference from other radio frequencies, such as a cell phone or other wireless technology, to prevent hackers from interrupting signals or setting the technology off.

The Truck Stopping Technology was commissioned by then Gov. Gray Davis and the California Highway Patrol following the attacks of September 11, as well as a January 2001 attack on the state Capitol by a disturbed driver of a fuel tanker. The tanker burst into flames upon impact with the building; the driver was killed.

The CHP turned to the Laboratory and consultant Bill Wattenburg. It was Wattenburg who came up with the idea for the technology; McCallen, along with Chad Noble and Pat Lewis, helped develop it.

The devices cost approximately \$800 apiece. The Laboratory, CHP and a commercial truck company already are testing an earlier impact version of the device on California highways. To have the devices automatically equipped on all commercial transportation vehicles will require legislation.

Founded in 1952, Lawrence Livermore National Laboratory has a mission to ensure national security and to apply science and technology to the important issues of our time. Lawrence Livermore National Laboratory is managed by the University of California for the U.S. Department of Energy's National Nuclear Security Administration.

Source: Lawrence Livermore National Laboratory

Citation: Latest truck stopping technology has applications in site protection (2005, February 23) retrieved 23 April 2024 from

<https://phys.org/news/2005-02-latest-truck-technology-applications-site.html>

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