# DHS Science and Technology Directorate

# Controlled Impact Response Tool (CIRT)

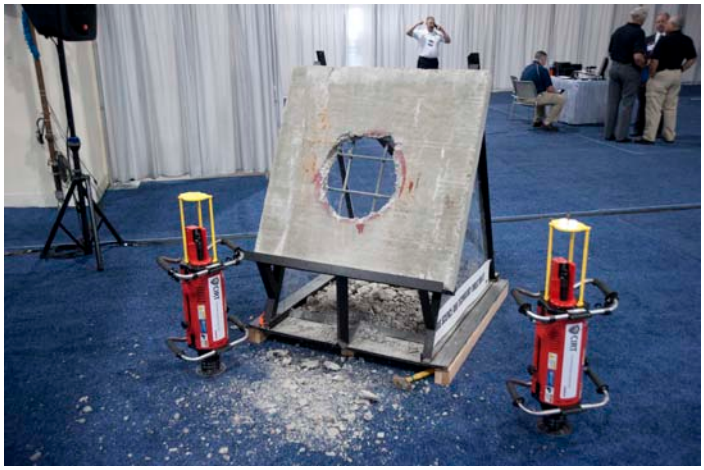
## Fulfilling a Need

The Department of Homeland Security Science and Technology Directorate's (S&T) Controlled Impact Response Tool (CIRT) is a new concrete breaching tool that is capable of providing Urban Search & Rescue (USAR) teams with the ability to penetrate a reinforced concrete wall up to four times faster than traditional methods. This could mean the difference between life and death to those trapped under collapsed concrete caused by natural and manmade disasters. Faster breaching times translate into shorter time needed to reach a victim-- increasing operator and victim safety, and the probability of success during a rescue mission.

In development since 2007, this 38-inch long, 105-pound tool was developed in partnership with industry partners and is now commercially available and listed on the General Services Administration (GSA) schedule of approved equipment.

## Saving Lives Safely and Quickly

CIRT uses blank ammunition cartridges to drive a piston that generates a high-energy jolt to create a contained hole in the concrete. A series of these holes allows the creation of an area large enough to deliver vital supplies such as food, water and medicine to victims before first responders are able to get victims to safety.



The force generated by CIRT is concentrated in a localized area, minimizing threats to the safety of survivors and the potential destabilization of the surrounding structure. A self-contained tool, CIRT does not require the drilling, chipping, or sawing used by traditional methods to reach survivors trapped under collapsed concrete. It does not require hoses, extension cords, or other auxiliary power equipment for operations.

## CIRT in the Hands of First Responders

The Federal Emergency Management Administration (FEMA) has acquired six CIRT units to add to their search-and-rescue capabilities. S&T also distributed CIRT units to municipal search-and-rescue teams in Cincinnati, Ohio; Los Angeles; Seattle; Fairfax County, Va.; Virginia Beach, Va.; and Texas Disaster City, a training ground used by USAR specialists. In 2008, Popular Science magazine selected S&T's concrete-blasting lifesaver as one of "The Top 100 Innovations of 2008."

Homeland Security
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