Extreme debris removal

RescueVac pushes survival rates in trench rescue up by 80 per cent and cuts out digging operations. Ann-Marie Knegt talked to Dave Adler, the man who pioneered this innovation.

In trench rescue operations time determines the survival of the victim. The longer someone is trapped, the more likely they are to die of Crush Syndrome, internal injuries, or hypothermia. Furthermore, statistics are riddled with cases of would-be rescuers being killed in failed attempts to rescue buried or partially buried victims. As much as 65% of all deaths from trench cave-ins are of would-be rescuers. Trench collapses are one of the most time-consuming technical rescues as well as one of the most labor-intensive. The victim must be completely uncovered before he can be removed from the trench. As a single cubic foot of dirt can weigh as much as 145 pounds, a typical small cave-in can involve about 1.5 cubic yards of dirt, or approximately 4000 pounds.

The life saving potential of the RescueVac--an integrated debris removal system for trench, silo, landslide, mining, parallel vertical shaft and collapse rescue operations – is so large, that firefighters across the US, Canada and now also in China and Australia are cottoning on to the fact that this kit cuts rescue time down by such a staggering percentage that it's pushing survival rates up spectacularly. Dave Adler, founder of RescueVac Systems, based in Illinois, explains that the Los Angeles County Fire Department Urban Search & Rescue Task Force 103 & 134 last summer alone made two documented saves with the RescueVac. In the last ten days before this interview, the RescueVac system helped save four people in trench rescue operations across the US, two of which were in California, one in Indiana, and one in Georgia. In each one of these scenarios the victims were saved within minutes instead of hours.

Since Fire and Rescue Magazine last reported on this life saving equipment a year and half ago, things have evolved rapidly within the company, and Adler explains that the product line has been expanded considerably. "We started off with an eight inch hose and nozzle, which has the greatest volume transfer and can carry heavy sludge and debris over the longest distance. When we talked to the users of our product, however, we found that there are certain scenarios where a lighter and more compact kit would be better suited. This inspired us to develop a six-inch product line and nozzle, which is ideal for sucking out material from around the victim in spaces where an eight-inch line could not reach," says Adler.

In addition, the company developed a four-inch product line that has been designed to be deployed in silo's and ship holds, and used in situations where access is extremely narrow. The safety devices that hold the lines together can be used on all of the lines, which can all be connected to the eight inch as a main supply line. All procedures have remained the same, but it means that the user has a greater flexibility to deal with the different types of material. "In Florida, for instance, they deal with a lot of sand cave-ins. If they use the eight inch as a main supply line, they can attach two four inch lines to this and have one working on either side of the trench. This also works well for silos and ship holds, and our clients have received this very well because it gives them a greater flexibility."

The system also works very well when there's water running into a trench. Water can be sucked from the trench with one hose, while the other hose removes the sludge and debris that's putting pressure on the victim. There is no need for large pumps to be transported to the rescue site.

Another new development from RescueVac is the Avalanche Kit, which consists of a four inch hose with special nozzles that liquify the typically gooey mud seen in avalanche operations. "We have rolled out extension tubes for all our different products, and have made the systems modular to increase flexibility, mobility and user friendliness."

Additionally, the RescueVac Shield has been specifically designed for silo and engulfment rescues, and consists of interlocking quarter moon sections, which surround the victim. Each section is then methodically pushed down around the victim. According to Adler, this is a very popular device since much less material has to be vaccuumed from inside the shield and around the victim. Adler is extremely passionate about his product, and being a rescue veteran of 33 years, he is sharply aware of what the industry requires. "The only thing we can do to save these victims is to cut down on the amount of time that is needed to extricate victim from the trench. The rescue community is recognizing what this product can do, and the great advantage it has over traditional digging methods. The New York Fire Department liked our product so much that it has built a special truck for it. The truck features an air compressor, and is built like a flatbed with removable sides so easy access is gained to all the RescueVac hoses and nozzles," concludes Adler.