AEROSPACE AND DEFENSE TECHNOLOGY ALERT

SAFER EMERGENCY EVACUATION

The terrorist tactics of attacking urban buildings has led the armed forces to look for safety technologies to reduce casualties. In February 2009, the US Army in Iraq awarded High Rise Escape Systems Inc., of Sanford, Florida, a contract for their portable evacuation devices. This is the Florida company's first order through the new GSA Schedule, opening opportunities to sell their permanent and portable evacuation systems for multistorey buildings to all branches of the government.

"The core technology that we use was available prior to September 11, 2001. I think that it is safe to say that the rules changed that day and that was ultimately the fulcrum that caused a lot of people to change their priorities. I was one of them," declared Ryan Alles, a former firefighter and president of High-Rise Escape Systems. Alles said that although his company's evacuation systems are low technology, and thus immune to the complications of complex technology, this presented a challenge in protecting its intellectual property. "We have two US patents and just got the final text accepted for our trademark, but let's face it, those things alone don't keep people from ripping off your products," commented Alles. "So we adopted a business model of creating distributorships so that entrepreneurs and fire safety equipment manufacturers alike can sell our products wherever their locale."

Logistically this provides numerous benefits. It allows qualified individuals to represent High Rise Escape Systems Inc.'s products through their existing resources rather than compete with or attempting to develop similar devices. "This further establishes our expanding international brand campaign and opens up the opportunity for us to implement manufacturing on a local level where necessary," explained Alles. "Growing our presence on multiple fronts, creating jobs and paying taxes in those communities further increase our IT protection and sustainability in foreign markets. This also greatly reduces our need for a sales force."

There are five different evacuation systems, all working the same way, and divided into two categories: fixed mounted and portable. They are designed to serve buildings up to 1,000 ft. (approximately 100 storeys) tall. Each system offers 34 in. of

extension away from the building or structure to reduce the likelihood of dragging the building and eliminates the need for evacuees to "rappel" with their feet on the descent. At the heart of the systems is a controlled descent device (CDD) that operates like a pulley. As a user protected in a fire-resistive suit descends a little slower than an elevator, an empty suit automatically ascends for the next user. This process repeats until everybody is out.

In the fixed mounted system, the only permanent component is the bracket that is attached to the wall. This bracket is 18 in. tall, 3 in. wide. and a quarter inch deep, and can be painted to match the decor of any room or building. "Locating these inexpensive brackets at various locations on each floor provides for multiple exit points (whichever is safer at the time of the emergency) and requires just one system each floor," commented Alles. "As a reference, one system on the 17th floor of a typical condominium can evacuate all 16 people in 17 minutes. Portable Systems are suitable for fire departments, special weapons and tactics teams, construction sites, oil platforms, and maritime applications. "Just about anywhere you can imagine living or working above 33 ft. (3 floors), which is the LD (lethal dose)/50 for a fall to a human being. Our Responder 1 and 2 systems can be set up in as fast as 90 seconds after a couple of practice runs."

During his career as a firefighter, Alles saw first hand that evacuating high rise buildings was a problem, feelings underscored by the terrorist attacks of 9/11. "My personal pursuit that began in late 2001 had grown enough to become a professional pursuit in 2005; High Rise Escape Systems was incorporated. I was appointed to the National Fire Protection Agency (NFPA) Technical Committee for the Life Safety Code on Means of Egress in 2007. That same year, after 10 months of scrutiny by the US Department of Homeland Security, we were awarded `Designation' as a Qualified Anti-Terrorism Technology (QATT). Homeland Security recommended that we apply to the General Services Administration so that the world's largest customer--the US Government--could readily purchase this inexpensive, life-saving equipment. After 18 months we were awarded GSA Schedule GS-07F-0340. Shortly afterward we were awarded our first contract with the United States Army in Iraq. We believe it to be the

first of many to protect that unique portion of total US Government sales, but most importantly, our troops that are being targeted on the front lines."

Figure 1 shows a firefighter demonstrates the High Rise Escape Systems' emergency evacuation system that the US Army will use in Iraq to safely evacuate persons from buildings.

Picture Credit: High Rise Escape Systems, Inc.

When asked about the trends he sees in the development of supplemental evacuation, Alles responded that there are several qualified technologies internationally and The Safe Evacuation Coalition, the group of manufacturers that was responsible for driving the American Society of Testing and Materials (ASTM) and National Fire Protection Agency (NFPA) standards processes, represents all of them. "I would encourage [engineers engaged in developing escape technologies] to join The Safe Evacuation Coalition so they can work among peers in an environment committed to the safety of human lives," he concluded.

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