

MULTIPURPOSE RESCUE SYSTEM

by Nitesh Dhawan

High-rise buildings have become not just a status symbol of any prominent metropolitan, but an answer to the ever-increasing demand for quality space at important city centers occupying lesser land area. As technology advances, and life becomes more complicated, the modern man sitting in his posh penthouse skyscraper suites and offices seems to be ascending towards the sky. However, life has not just become complicated, but hazardous too. Accidents, fires and terror attacks are the most dreaded threats to high buildings and the human lives thriving in them. But do we have the means to scale these heights and to fight such hazards?

Dangers of Height

The September 11 tragedy in New York forced companies to start thinking of fire safety in skyscrapers from altogether a different angle. Many months of research into the reasons of the collapse of the Twin Towers determined fire caused vital metal structures within the building to melt and cause the building to come down. Thousands lost their lives.

The hazards related to increased height pose a grave threat to the lives of those people working or living in these skyscrapers. As former Deputy Chief of the New York Fire Department Vincent Dunn once remarked, high-rise fires are the biggest challenge in the fire service.

During such fires, elevators malfunction, communications get destroyed, air conditioning ducts and pipes help spread the fire, and stairways get blocked with gases, fire and fumes. The rescue ladders are not long enough, discouraging the fire fighters to make any attempts to reach bizarre heights and people jump to their deaths. Even helicopter rescues become impossible.

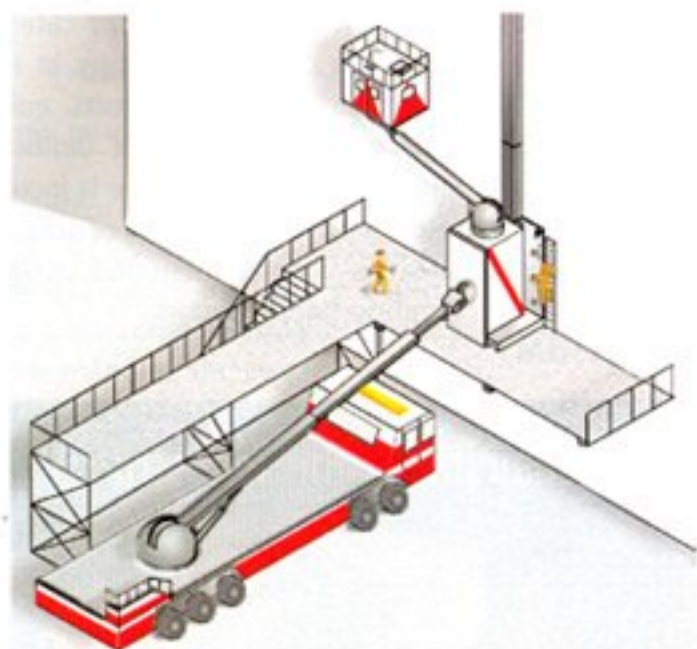
Until now, there has been no acceptable system capable of reaching the bizarre heights of 40 to 100 floors easily and in short time, a feat that becomes immeasurably compelling in an emergency.

A New Era of Fire Fighting Capabilities and Skyscraper Maintenance

A new system recently developed in Russia claims to stand up to this challenge with ease. The system, called Automatic Rescue Climber (ARC), can not only be used easily for fire fighting and rescue operations but also for external cleaning and building maintenance.

Chief inventor Pavel V. Korchagin explained, "The ARC system has been designed keeping ease of use on great heights in view. Until now, there was no other such system with such capabilities as ARC." The system designers also include Marina E. Korchagin, Igor I. Goldstein of Plymouth, Minnesota with co-authors and lawyers Vladimir Bararushkin from Brooklyn, New York and Steven E. Kahm.

Bararushkin expressed great enthusiasm about this project and said, "I can't wait to see the system in action saving innocent lives and making high building exterior maintenance nightmares a thing of the past." Talks for manufacturing the system inside or outside of Russia with an undisclosed elevator industry company in Russia are underway.



System for High Altitude Construction and Rescue Services

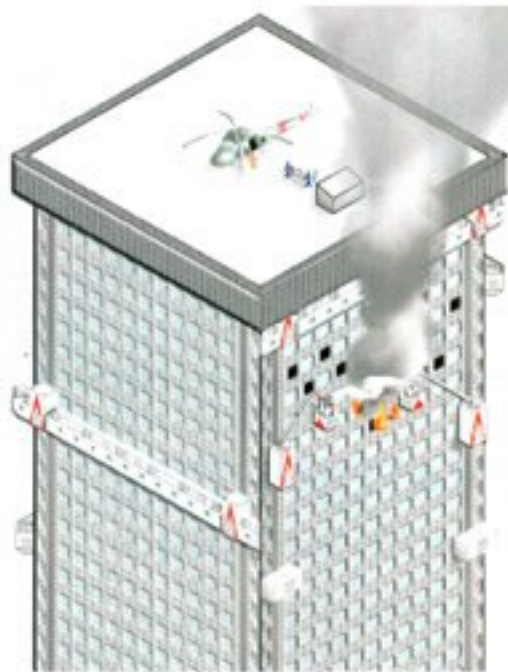
Field of Invention

This invention relates generally to combination elevator and crane for use on high-rise structures. The invention can be used for fire-fighting and rescue operations. The ARC system can also be used for construction and maintenance services of high-rise structures.

Analysis of Currently Available Systems on the Market

Currently, vertical transportation in high-rise structures is limited to fire-fighting machine ladders, stairs and elevators (which are not operational during fire or emergency power outage). Fire fighters on the outside of the building are limited by how high their ladders will reach when fire fighting or attempting rescues.

Construction and building maintenance are limited to access to the outside walls and roof of the building. For example, window washing is limited to plank or dangling from ropes extending from the top of a building. Construction of the building is similarly hampered by the need for scaffolding and lack of easy transportation and access on the outside of a high-rise building.



Summary of Invention

The invention comprises a device having a crane portion and monorail elevator portion for extending an arm to a desired location on the building.

An elevator portion has a telescopic pole for adjusting the distance to a cabin on the other end of the telescoping pole. The telescoping has pivots on both ends; the one attached to the cabin is for keeping the floor of the cabin horizontal. The pivot attached to the elevator portion is to angularly position the cabin relative the elevator portion.

A rotation portion on the elevator portion swings the telescoping pole toward or away from the building. The crane portion can support a passenger cabin for fire rescue.

It can also have fire-fighting equipment for access to all portions of a building. The crane can also haul building materials to any location of a building under construction and can be used for window washing and other maintenance activities on the outside of the building.

A rail attached to the side of the building is engaged by wheels, which are clamped to the rail and hold the elevator portion in place and propel the elevator portion vertically on the rail. The clamping feature keeps the elevator portion in place and propels the elevator portion vertically on the rail.

The climbing feature allows the elevator portion to engage or disengage the building and very quickly deploys the ARC to the top of the building. The elevator portion may thus be moved to different portions of the building or transported to different buildings when needed. A telescopic arm, a rotating mechanism and a pivoting mechanism can position the elevator portion adjacent a rail for engagement thereto.

Cabin

A cabin or platform attached to the telescopic pole on the elevator portion can perform many tasks. It can deliver goods or workers to places on the building during construction. It can also be used for fire fighting and rescue people for the buildings.

Multi Purpose Use

The invention can be used for various purposes stated above and for any type of buildings and structures – residential, office, industrial and engineering, transport structures and bridges. In other words, everywhere quick and safe delivery of personnel, technical equipment and building materials to various sections of the outside surface of buildings is required.

This invention has been found advantageous first of all for the high-rise buildings, more than 12 to 15 floors, as the level below can be reached by ladders and hoists currently in use. Design attributes of the invention allow for its use on very tall buildings, more than 30 to 50 floors.

The ARC system may prove to be an important fire rescue and building maintenance tool in very near future.

The inventors believe this system can prove to be a great success in the United States with its numerous high-rise buildings and are keen to make it available here soon.

*Nitesh Dhawan is based in Moscow, Russia and has been writing about the real estate market, construction technologies, equipment, elevators, etc. for the past seven years for major English and Russian language publications. Dhawan has helped design a specialized bilingual publication on the real-estate market in Russia as consulting editor and currently also writes for **Estates News**, the Central and Eastern European property gazette.*