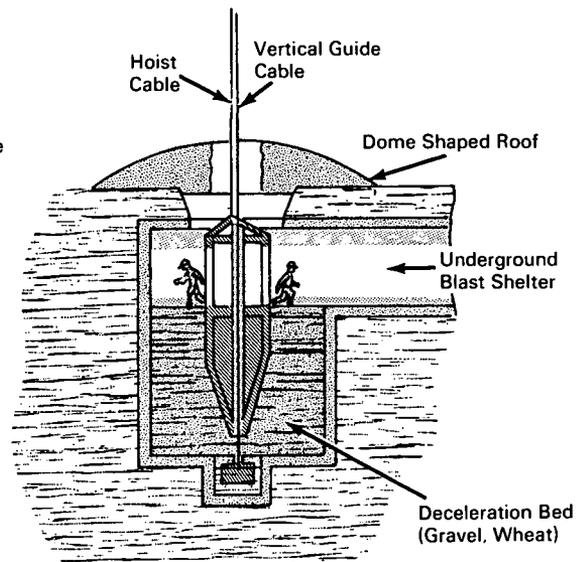
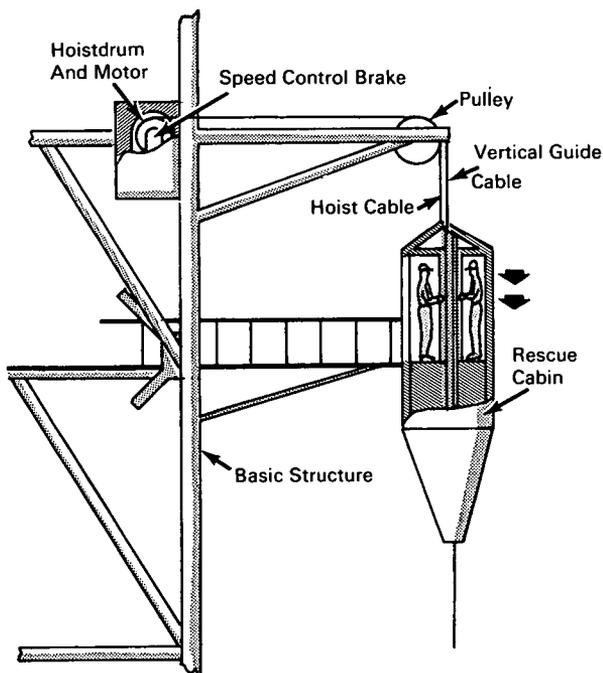


NASA TECH BRIEF



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Emergency Escape System Protects Personnel from Explosion and Fire



The problem:

To design an emergency escape system to evacuate personnel from tall structures, especially when the possibility of explosion or fire exists. The high energy propellants used in launch vehicles present an explosive hazard that precludes the use of conventional escape devices and methods, such as fire escape stairs or ladders.

The solution:

An elevator-type system designed for emergency escape from launch complex gantries and servicing structures.

How it's done:

In an emergency, personnel evacuate the structure in a rescue cabin, which descends along a vertical guide cable. The spike shaped cabin penetrates the dome shaped roof of an underground blast shelter and is brought to rest in a deceleration bed of gravel, wheat, or other granular material. Personnel depart the shelter through a tunnel.

The rescue cabin is secured at the top of the structure by a hoist cable. The cable passes over a pulley and is attached at the opposite end to a hoist drum and motor. A speed control brake on the drum holds the cabin in place prior to use and controls cabin

(continued overleaf)

descent speed during emergency operations. A control lever in the rescue cabin releases the brake for descent.

The dome shaped roof of the blast shelter keeps liquids burning on the ground from entering the shelter. The roof also prevents combustible materials from dropping into the shelter prior to cabin penetration. The opening, resulting from cabin penetration, is essentially the same size as the cabin cross section, since the roof is constructed of material having a low maximum shearing stress.

Note:

Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Kennedy Space Center
Kennedy Space Center, Florida 32899
Reference: B66-10634

Patent status:

This invention is owned by NASA, and a patent application has been filed. Royalty-free, nonexclusive licenses for its commercial use will be granted by NASA. Inquiries concerning license rights should be made to NASA, Code GP, Washinton, D.C. 20546.

Source: Wolfgang G. Offik
of Martin-Marietta Corp.
under contract to
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