



## Autodesk Software Helps U.S. Navy Go Ropeless

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### Federal Equipment Company Uses Digital Prototyping to Create Cableless Elevator System for Aircraft Carriers

SAN RAFAEL, Calif., Apr 27, 2011 (BUSINESS WIRE) --

[Autodesk, Inc.](#) (NASDAQ: ADSK), has named Federal Equipment Company (FEC) as the Autodesk April [Inventor of the Month](#) for using Autodesk software to design a new type of elevator system for the U.S. Navy. The advanced system relies on magnets rather than cables to power its elevators, enabling the Navy to more efficiently transport munitions on board new aircraft carriers.

Unlike most elevators, which rely on a cable-based pulley system, FEC elevators for the Navy's new system use what is known as *linear synchronous motor technology* -- the same magnet-based technology that powers many high-speed trains. The elevator can move 150 feet per minute and accelerate to full speed in two seconds, which is a significant performance improvement over the Navy's legacy elevator systems.

FEC worked on the project with defense contractor and shipbuilder Northrop Grumman Newport News, which awarded FEC the \$55 million project as part of its larger assignment to build a new class of aircraft carrier called the CVN-21.

#### Digital Prototyping Helps Accelerate Design of Innovative Elevator System

To develop, simulate and optimize its groundbreaking design, FEC relied on Autodesk [Digital Prototyping](#) software provided by Advanced Solutions, an Autodesk Authorized Reseller and Gold Partner.

FEC used [Autodesk Inventor Professional](#) software to develop an accurate prototyping model of the elevator, [Autodesk Simulation Multiphysics](#) (formerly Algor Simulation) software to simulate its real-world performance, [AutoCAD Electrical](#) to design the electrical control system and [Autodesk Vault](#) to manage the project's data and share it with Northrop Grumman.

"Autodesk software saved us an immeasurable amount of time," said Scott Thompson, a mechanical engineer at FEC. "If a picture is worth a thousand words, a digital model is worth 10,000."

Autodesk software proved particularly valuable when FEC used the dynamic design analysis method capabilities in Autodesk Simulation Multiphysics to simulate the elevator model's response to shocks, such as those produced by underwater explosions. By running the simulation in Autodesk Simulation Multiphysics, the company identified and fixed potential problems before it performed live tests that cost \$400,000 -- helping it to pass the test on the first attempt.

In addition to the extensive finite element modeling tools provided in Autodesk Simulation Multiphysics, Autodesk provides [simulation experts](#) who offer technical support for all simulation users and explore the latest trends, issues and developments in simulation to help users and analysts gain knowledge and experience from fellow industry gurus.

"FEC illustrates the innovation that can be achieved by creating a single digital model to design, visualize and simulate the product, paired together with enterprise product data management," said Robert "Buzz" Kross, senior vice president, Manufacturing Industry Group, Autodesk. "Digital Prototyping enhanced FEC designers' and engineers' ability to think innovatively on an ambitious endeavor such as the Naval aircraft carrier project."

#### About the Autodesk Inventor of the Month Program

Each month, Autodesk selects an Inventor of the Month from the users of Autodesk Inventor software, which takes manufacturers beyond 3D to Digital Prototyping. Winners are chosen for engineering excellence and groundbreaking innovation. For more information about Autodesk Inventor of the Month, contact us at [IOM@autodesk.com](mailto:IOM@autodesk.com).

#### About the Autodesk SIM Squad

The Autodesk SIM Squad is a team of world-class simulation experts who speak the language of Computational Fluid Dynamics, finite element analysis, all things mechanical and plastic injection molding simulation. The SIM Squad's mission is to explore the latest trends, issues and developments in simulation to help users and analysts gain knowledge and experience from fellow industry gurus. For more information about the Autodesk SIM Squad, visit [simulation.autodesk.com](http://simulation.autodesk.com).

#### About Federal Equipment Company

Federal Equipment Company (FEC) was established in 1982 as a supplier of specialized military replacement parts for conveyors, elevators, dumbwaiters and helicopter hangars to the US Navy. Since then, FEC has grown and expanded into a design-build engineering firm providing both new construction and replacement parts to the US Navy, the US Coast Guard and shipyards throughout the world. FEC is also the largest designer, manufacturer and installer of commercial heliports in the world. FEC's vast array of product offerings also includes the design and manufacturing of commercial multipindle drillheads and custom conveyor systems. For additional information, visit [www.federaquipment.com](http://www.federaquipment.com).

#### About Advanced Solutions

Advanced Solutions, Inc., is an award-winning Autodesk Gold Partner in manufacturing and architecture, engineering and construction. It is an Authorized Autodesk Training Center and Authorized Autodesk Consulting Services Partner. For more than 24 years, the company has focused its business model on helping customers realize return on investment from 2D and 3D design software. For additional information, visit [www.advancedsolutionsonline.com](http://www.advancedsolutionsonline.com).

#### About Autodesk

Autodesk, Inc., is a leader in [3D design](#), engineering and entertainment software. Customers across the manufacturing, architecture, building, construction, and media and entertainment industries -- including the last 16 Academy Award winners for Best Visual Effects -- use Autodesk software to design, visualize and simulate their ideas. Since its introduction of AutoCAD software in 1982, Autodesk continues to develop the broadest portfolio of state-of-the-art software for global markets. For additional information about Autodesk, visit [www.autodesk.com](http://www.autodesk.com).

An interview with Federal Equipment Company is available on the Autodesk YouTube Channel at <http://www.youtube.com/watch?v=3bYUJFValsY>.

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