

## Communications at Sea Enidine Wire Rope Isolator Application

By: Tom Zemanek

### Situation Overview

A manufacturer in the USA produces communication antenna for large ships. These antennas are installed on cruise ships, fishing and cargo vessels, navy ships and large yachts. A flexible mounting solution was needed to keep the antenna in continuous operation despite constant motion and a corrosive environment.

### Application Data

The large dish-shaped antenna is moved by servomotors, which help the antenna lock onto the correct satellite signal. The pedestal and electronics of the antenna enable the platform to remain in a constant position, no matter what the ship, the sea or the wind is doing. This system lets the antenna acquire, track and hold the distant, faint signal that provides entertainment, business, weather and communication information.

The dish-shaped antenna is mounted high on the pedestal. The large mass and high center of gravity of the antenna places significant stress on the small mounting base. The antenna is usually mounted at the highest point of the ship, exaggerating the motion of the waves. The continuous motion of the ship coupled with corrosion that comes with a harsh saltwater environment causes fatigue on the mounting plate and bolts, which will eventually fail.

### Product Solution

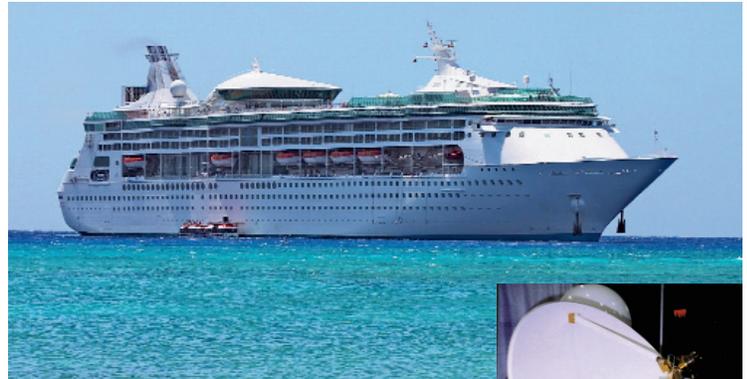
Rigid mounting systems often fail in sensitive electronic equipment. The solution lies in making the system flexible and adding damping. ITT Enidine Inc. wire rope isolators were the perfect solution to the problem. The wire rope isolators are used as a base isolation system. They are arranged in a triangular configuration to allow some flexibility during rough seas, and damping in all directions.

The units were installed on a shaker table and tested under several maritime specifications. The wire rope isolators provided the isolation required to protect the antenna and electronics. The environment is characterized by severe temperature swings and saltwater conditions, making the stainless steel construction of the wire rope isolators a distinct advantage. This protects the antenna and sensitive electronic controls necessary to maintain constant communications from anywhere on Earth.

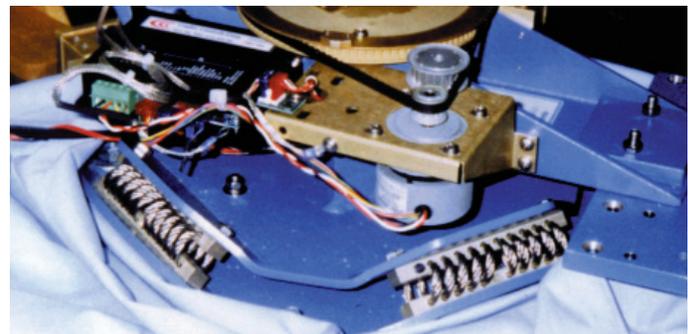
### Project Results

The need for flexible mounting of sensitive electronics required to operate or be transported under rugged conditions is growing. Often, the customer is unfamiliar with wire rope isolators and will welcome a simple, durable product that will solve a typically expensive problem.

ITT Enidine Inc. has the technical experience to solve tough applications like the one described here. Wire rope isolators are competitively priced products with unique benefits such as the ability to withstand harsh environments. Our established, flexible-manufacturing cell can ship wire rope isolator samples and reasonable quantities of production units in 24 hours, provided that orders are placed before noon EST the previous day. Modified standards can be products within 72 hours.



*A flexible mounting solution was needed to keep the antenna in continuous operation despite the constant motion and corrosive environment.*



*The wire rope isolators are used as a base isolation system. They are arranged in a triangular configuration to allow some flexibility during rough seas, and damping in all directions.*