

## Case Study

COMPANY | Nationwide Structures, Inc.  
INDUSTRY | Government and Defense

## Bergstrom Off-Highway teams up with Nationwide Structures to keep US troops in Middle East comfortable

Harsh environment AC unit cools in temperatures in excess of 130° Fahrenheit



"Our mission is to protect troops from gunfire, and Bergstrom's mission is to make them as comfortable as possible as they stand guard in the middle of the desert."

Charlene Garcia-Weeks  
Nationwide Structures

NSI

### Harsh Environment A/C Specifications

#### Features

- 18,000 or 30,000 BTU cooling capacity
- Independent climate control system
- Operates in temperatures in excess of 130°F (54°C)
- Easy installation
- Virtually maintenance free
- Quiet Operation
- Available in multiple voltages
- Optional heater package available

#### Construction

- All steel shell for durability
- Hermetically sealed electrified unit
- 134A refrigerant sealed loop



### The Customer Challenge

Nationwide Structures has been helping ensure troops' safety since its formation in 1986. The Virginia-based company supplies prefabricated security structures and protective barriers used in all types of military facilities across the world.

Most of the company's products are used in harsh environments, including extreme heat, severe wind and sand. Many of Nationwide's guard booths, for example, are currently being used in military conflicts in the Middle East.

"It's like you're sitting in a bank vault in the middle of the desert with the sun beating down on you," said Charlene Garcia-Weeks, president of Nationwide Structures. "It's literally like sitting in an oven."

When Nationwide began supplying these types of high ballistic guard booths to the military five years ago, they were equipped with a roof-mounted AC unit, very similar to ones seen on recreational vehicles. Garcia-Weeks quickly learned, however, that this wouldn't be effective.

"The units were failing well below temperatures of 115 degrees Fahrenheit," said Garcia-Weeks. "The compressors were burning up and as a result the units were completely useless."

Garcia-Weeks knew she had to replace the roof-mounted units with a system designed specifically for these types of harsh environments. After lots of research, she turned to Bergstrom Off-Highway.

### The Bergstrom Solution

As a global leader in the design and supply of climate systems to the commercial vehicle industry, Bergstrom Inc. was exactly the type of manufacturer Garcia-Weeks was looking for.

In fact, the company's Off-Highway division, headed by Gus Anton, Vice President Sales, specializes in producing climate control systems for some of the toughest environments in the world.

After being contacted by Garcia-Weeks, Anton and his team visited one of her manufacturers to see the trailer-mounted armored guard shacks (AGS) for themselves. The Bergstrom team then began the process of custom-fitting the units to the booth roofs.

After conducting a series of heat load calculations on the booth, they sized the appropriate unit and then worked with Garcia-Weeks to ensure the unit would properly mate up to the roof of the booth.

"It was obvious that they knew what they were doing," said Garcia-Weeks. "They went through all the testing and were able to come up with a more powerful unit that was even a lot smaller."

The resulting unit, named NSI 3000, has a 30,000 BTU cooling capacity and is capable of providing air conditioning in ambient temperatures in excess of 130° Fahrenheit.

### The Results

By using their more than 60 years of experience in climate control systems, Bergstrom was able to provide Nationwide Structures a cooling system that would be able to stand up to the extreme conditions in the Middle East.

Most importantly, the NSI product line doesn't only help keep troops comfortable in desert locations, but also helps reduce fatigue and maintain mental alertness.

As a result of the success of the NSI 3000, Nationwide recently partnered up with Bergstrom to begin manufacturing an 18,000 BTU unit, called the NSI 1800. In addition, Garcia-Weeks intends to submit the Bergstrom unit for testing and evaluations by the government to have it certified as the cooling unit of choice.

"Manufacturing cooling units for these types of extreme conditions is a natural fit for Bergstrom," said Garcia-Weeks. "They know what to do in sandy, dusty conditions and in extreme heat, and they are very good at it. Our mission is to protect troops from gunfire, and Bergstrom's mission is to make them as comfortable as possible as they stand guard in the middle of the desert." ●



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