

# Northern X POSURE

By AMY REAGAN

Temperatures that can go from below zero to above freezing in one day . . . long hours of darkness . . . severe spring storms that produce dangerous lightning.

All this can sometimes make for difficult living and working conditions for residents of the northern-most U.S. state.

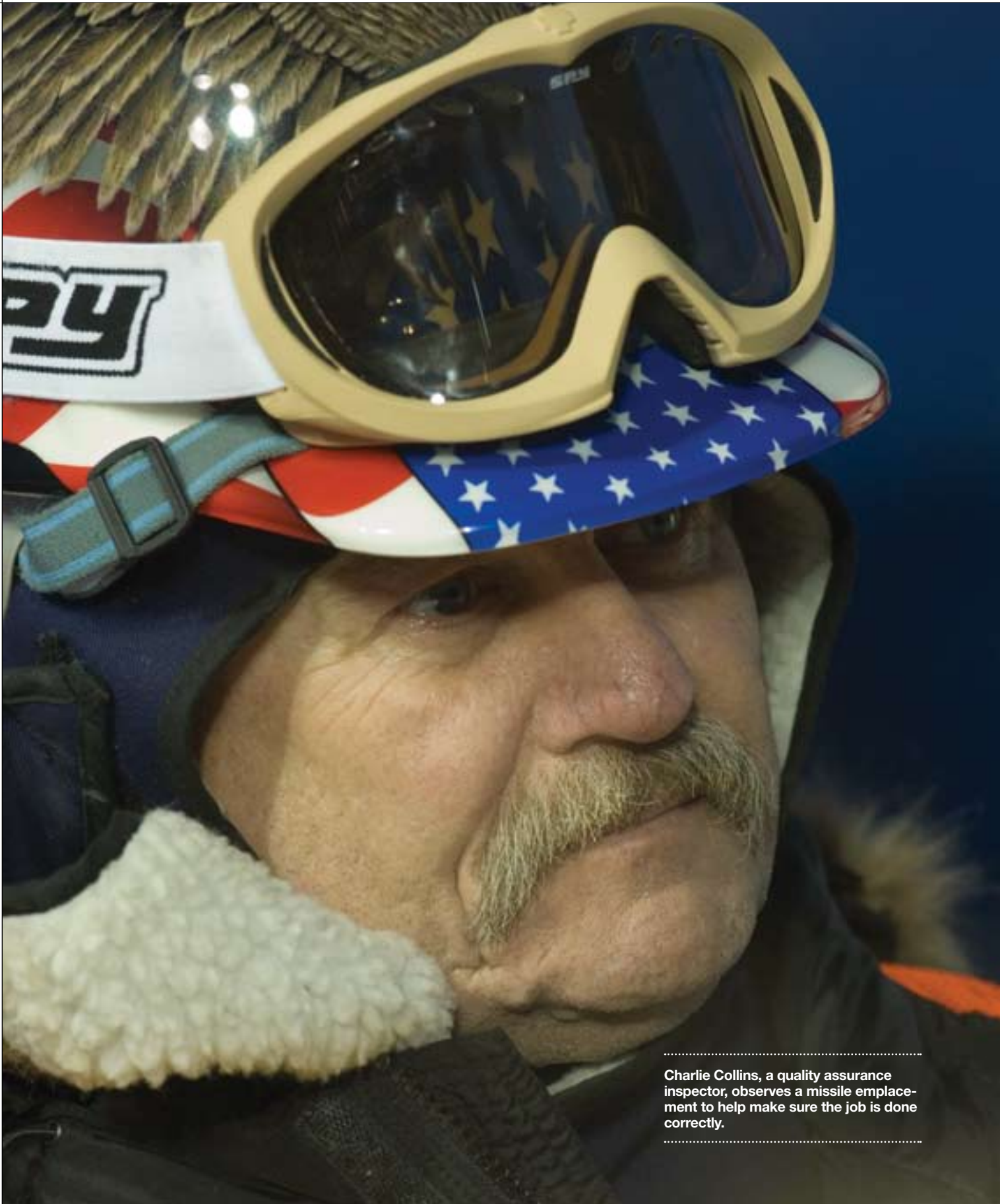
But Boeing employees and subcontractors have adapted to Alaska's sometimes harsh environment to maintain a vital piece of the United States' missile defense.

Fort Greely, Alaska, is home to about 250 Boeing employees and subcontractors as well as about a dozen interceptor missiles emplaced in silos as part of the Ground-based Midcourse Defense (GMD) program. The missiles will serve as a line of defense should the country come under an intercontinental ballistic missile attack. Fort Greely is on the eastern side of Alaska and is about 350 miles from Anchorage in the south and 105 miles from Fairbanks to the northwest.

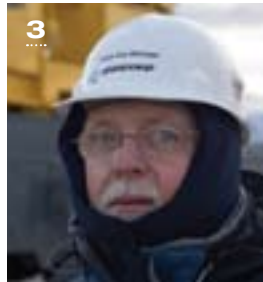
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Alaska's winter cold presents special challenges for Boeing employees working on America's front line in missile defense.





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Charlie Collins, a quality assurance inspector, observes a missile emplacement to help make sure the job is done correctly.  
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Missile Defense Systems Director of Engineering Dan Olberding says some of the most demanding engineering environments anywhere in the world are found in the interior of Alaska. “These cold regions offer unusual challenges. Design engineers must take into account the behavior of materials, the performance of mechanisms, and numerous human factors in the extreme cold and extended periods of darkness. And Boeing’s systems engineers must understand, properly specify and adequately test each element of the system for these environments.”

The practical difficulties of working in Fort Greely begin with simply trying to get there. Visitors must fly first to Fairbanks, then brave the elements in a two-hour drive to get to Fort Greely. Depending on the season, travelers may encounter frigid temperatures, washed out roads, or have to negotiate moose and other large animals that cross the road.

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1. Safety engineer John Lewis, and a colleague, provide emplacement support for one of the missiles.
2. Don Day, mechanic task leader, and John Lewis confer on top of one of the missile silos.
3. “Employees are very aware of safety concerns and issues,” says Fort Greely site manager Scott Campbell.
4. Equipment being delivered by a U.S. Air Force C-17 Globemaster III transport to Allen Airfield at Fort Greely.
5. One of the missiles being placed.
6. Marshall Coyle, manufacturing manager, and John Christensen, quality engineer, check wind speed during one of the missile emplacements.
7. Don Day observes the operation.

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Working at Fort Greely in temperatures that can feel like -80 degrees Fahrenheit when the wind is high is a huge switch for staff analyst Misty Mersch, who grew up in balmy Florida. “Wearing the right clothing is the key,” says Mersch, who moved to Alaska with her U.S. Army husband three years ago. “And in the winter when there are up to 22 hours of darkness, you simply have to make the effort to get out and keep busy. But you soon adapt. Alaska is so beautiful, and I am so proud of our Boeing team.”

Once at the base, she and other employees and guests live in comfortable, warm conditions. Outside they face almost constant hard winds with extreme temperatures in winter and sometimes strong storms and forest fires in summer. The wind often blows so hard that the portable restrooms, for example, must be tied down with steel cables over the tops and anchored with heavy, solid concrete blocks. In the winter months, employees with responsibilities outdoors sometimes can work only for 20 minutes at a time before getting back into their trucks to warm up.

“Because of the conditions at Fort Greely, employees are very aware of safety concerns and issues,” says Fort Greely site manager Scott Campbell. Staying outside too long could result in



frostbite or hypothermia, and the harsh conditions create great stress on structures and hardware. “Our employees know that their decisions and actions could have life-or-death consequences for themselves, their families and, in fact, the country.”

Because the work at Fort Greely is of international importance, the team makes sure that the facilities and hardware all work properly in the subzero temperatures. For example, the buildings have roofs with ventilation designed to prevent blowing snow from entering the vents and to prevent ice dams from forming. Plumbing systems in the buildings must be installed underground below the frost line to avoid freezing pipes. The missile silos are temperature-controlled to protect the missiles, and special lubricating oils must be used for metal on the buildings as well as for hardware associated with the missiles.

“Necessity is the mother of invention, and the conditions at Fort Greely have forced us to come up with some creative solutions for many common engineering and maintenance problems,” Campbell says. “But we all recognize the importance of this facility to the nation’s defense, and we are all committed to ensuring that it will perform as required should the need arise.” ■



**Above: The 800-mile-long Trans Alaska Pipeline System stretches past Fort Greely from Prudhoe Bay on Alaska’s North Slope to Valdez, the northernmost ice-free port in North America.**

**Left: Caribou and other wildlife, including moose and bears, are a common sight around Fort Greely.**

**Below: For all its extremes, Alaska offers stunning landscapes, balmy summers and outdoor adventure, making it one of America’s most attractive destinations.**





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**Mike Hoskowitz, a logistics engineer from Huntsville, Ala., travels on equipment delivery flights to and from Fort Greely.**  
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