Big State Has Big Propane Needs

Challenges range from -45º F to temperatures to 1000-mile delivery routes.

Santa Claus and his reindeer have it easy compared to the men and women who have to make deliveries across Alaska. While Santa Claus leaves his home at the North Pole and flies over the difficult terrain below, drivers and technicians must deal with a wide range of conditions and challenges to deliver propane.

Describing the working conditions as "challenging" would be an understatement. Alaska is physically the largest U.S. state, with more than 570,000 sq miles of land. About the only thing not big about the state is its population, which is one of the smallest in the U.S. The combination of the two results in some of the longest delivery routes for marketers and a number of other interesting challenges.

And some of the longest delivery routes, in the 1000-mile range, are among Alaska's most famous manmade landmarks—the oil and gas pipelines that criss-cross the state. These systems need propane for generators that power a series of electronic gates, or valves, that regulate the flow of oil and function as an emergency shut-off system, and for a series of generators along the pipelines that power cathodic protection systems.

According to longtime Suburban Propane (Whippany, N.J.) sales manager for Alaska, Bill Halterman, industry personnel must be able to handle the state's diverse and challenging environment. For about two months every winter, the sun never rises above the horizon. It can warm up in late summer, but come late fall, temperatures start to drop and -45°F is common. Gravel, dirt, and, in the winter, ice roads are more common than paved. Ice roads are created by spraying roads with water once the temperature falls below freezing. There are also a large number of customers that can't be reached by bobtail, transport, or rail car.

Residential customers make up a sizeable percentage of the overall load, but other customers range from traditional commercial—forklift, agricultural heating and drying, hotel/resorts/travel industry—to very unique—oil and gas industry and mining camps, Department of Defense installations, and communications equipment power. Halterman said the range of customers and their needs can vary greatly depending on where they're located.

The most important requirement, according to customers, Halterman explained, is absolute dependability. "Whether it is the propane supply for a camp or the heat for an underground tunnel or the TransAlaska Pipeline operation, the product must be delivered,

Bobtails and transports have to be shipped along Alaska's coast where there are no roads or they are impassable. This vessel is In the Cook Inlet; the transport at top of page is on an ice road on the North Slope.

in sometimes awful conditions. Temperatures colder than -45°F are common. We don't shut the trucks down in the winter, and the sleepers provide emergency shelter when conditions become too severe to continue driving. .Our drivers all carry winter survival gear, insulated coveralls, special insulated boots, gloves, and hats. They have both CB and VHF radios to communicate with other trucks and emergency personnel. Cell phones are carried by all of our drivers, however, coverage is still lacking in many parts of the state."

With so many long routes, drivers carry a complete set of tools to make emergency repairs. Some routes require not only a bobtail but also a transport, which essentially provides rolling storage for the bobtail driver, especially in areas where the transport cannot physically make the delivery because of size or weight restrictions. In the dead of winter in some remote, rugged locations, crawler tractors are used to tow bobtails to delivery sites.

Tire chains are mandatory, and trucks and transports have their tires changed to meet summer gravel or winter ice conditions. Hoses on trucks are flexible, stainless steel because the standard neoprene hoses designed even for cold weather become too stiff to handle at the very low temperatures. Ice, rather than snow, is a driver's bigger concern. Trucks are also equipped with special lights for the dark winter months and to help spot moose and other road hazards. Trucks travel in convoys during inclement weather and drivers are constantly announcing their positions to others when visibility is limited.

Moose and caribou can be a problem. During high snow years, moose find the roads more convenient. While truck/moose accidents are common, Halterman says his drivers have been fortunate in avoiding them. Suburban doesn't have "moose gooser" guards installed on their truck grilles to reduce accident damage, but they are common on many trucks.

There is a two-month period each spring when the roads begin to thaw. The southern parts of the state are affected first. During this period, called "break-up," trucks have to cut back on their load size. Depending on the road and type of surface, a truck could be required to carry as little as 50% of a normal load. Many marketers try to anticipate demand and top off tanks prior to the break-up period.

While a large amount of gas is delivered via truck, barge, boats, helicopters, seaplanes. and snowmobiles are all used to deliver cylinders and tanks. Propane isn't the only hazmat fuel delivered this way. Gasoline, jet fuel, kerosene, and many other hazmats have long been delivered by whatever method works best. Federal regulations, 49 CFR, have a section permitting certain waterborne and air hazmat delivery situations when certain conditions are met and there are no other means of transportation. Alaska's Administrative Code and Coast Guard rules also apply.

Suburban and other marketers don't have barges and helicopters to make the deliveries, but their customers contract with companies that provide these services. In some cases cylinders are stacked on a pallet and shrink-wrapped before being placed on a plane; helicopters will carry similar pallets; and barges will move not only bobtails and transports but also tanks on skids.

Installing tanks underground, especially larger ones, has become much more common. This eliminates the need for vaporizers, which can be critical for an above-ground installation. Below-ground temperatures maintain a 30°F-plus range year-round. Where permafrost is present, tanks are sometimes insulated on the top as well and then mounded with gravel to enhance the ground heat transfer. Low-pressure vapor lines are commonly insulated and heat-traced to eliminate the possibility of the gas recondensing to liquid.

Interestingly, the Alaskan propane market is just as busy in the summer as it is in the winter. The majority of any installation work has to be done during the brief spring/summer period. Deliveries also pick up during this period. Empty cylinders are put back on pallets for pick-up and exchanged for full cylinders. During the winter, some delivery work can be done with fewer complications because the ice roads can support the trucks delivering large tanks and heavy equipment.

—Ann Rey