

# Travel Time BY CHASE BINDER | ROBOTS FOR MILKING!

Bud and I often stumble upon something unexpectedly interesting when we're abroad — a perfume maker on the Cote d'Azur, a truffle farm in Croatia, an elephant hospital in Burma.

So, imagine our delight learning that robots were milking cows right up the road at Boscawen's Highway View Farm, a dairy farm owned and operated by the Crete family! Now that's interesting! We couldn't visualize them — modified R2-D2's, kinder versions of the Terminator? We had to find out!



The Lely Astronaut looks a bit like a massive refrigerator.

Full disclosure: we had an inside connection. Our son Eric just married Sarah Crete. Sarah does marketing, her mother Martha does administration, and her brother Adam is the chief operator. The farm was started in 1958 by Adam's and Sara's grandfather, Edgar.

But back to robots. Looking towards the future, the Cretes decided to explore dairy robotics. They found a Dutch company, Lely Industries, which makes agriculture machinery and, yes, milking robots. Lely Center of New England operates out of Vermont and owner Paul Godin explained the Lely philosophy: an innovative robotic design commitment to "free cow traffic" supporting the natural behavior of cows.

Huh? It seems that dairy cows are kind of like people. Godin says they like to be comfortable, have a consistent schedule, hang out with friends when they feel social, or retreat for solitude. They like to be milked when their udders are full and eat when they're hungry. Calm cows are happy cows and happy cows produce more milk, better quality milk, and stay healthier. Result: the dairy farm is more sustainable and profitable. And cows get to be cows!



The robot collects milk and vital data.



Brushes clean and laser-guided tubes do the milking.

Martha and Sarah began our tour with the robot room. They are big red machines, somewhat like a massive refrigerator. They sport the name "Lely Astronaut" and there's a display screen for technical data. Four black tube shapes on the screen represent the cow's four teats. As the robot milks the teats, the display tubes turn white and "fill up." Next to each Astronaut are cut-outs in the wall where we could see the bottom half of the cows as they were being milked (and their faces when they peeked out at us).

The Astronaut works like so: each cow wears a sensor around its neck (a bovine smart watch?). The Astronaut senses the individual cow and records/analyzes health and lactation data for that cow.

Before actual milking, brushes on a robotic arm clean and sterilize the teats and the underside of the udder. Then the milking arm comes out of the robot. It has four tubes and uses laser technology to attach each tube to a teat. Milking begins. Each milking tube connects to clear tubing leading to a collector inside the robot.

But wait! As the milk is collected, it's analyzed to assess the quality, the health of that individual cow and much more. If the milk passes muster, it goes into a larger collector. If not, it's kept separate from the usable milk and disposed of. The data for each cow helps Adam understand the status and needs of individuals as well as the overall herd.

Back to robots milking cows! The robotic system is designed around the cow's need to eat and be milked—basically self-service. When cows feel the urge, they line up by a ramp in the large open barn. They decide themselves and jockey for position on their own. The ramp guides them onto a platform with a gate that stops the cow in the milking position. A feeding bin opens in front of the cow, dispensing the Highway View custom grain blend. Milking begins while the cow is eating. When the milking and feeding is done the gate opens and the cow saunters back to the open barn—full tummy and empty udder. She can now hang out with her pals.



This girl watches us watching her.

It can take two weeks or so for the cows to adjust to a new lifestyle. The system marries state-of-the-art technology with the natural rhythm of cows, hence "free cow traffic"—matching the Crete family's philosophy to stay as close to nature as possible.

Highway View Farm does more than produce milk. They are known throughout New England, for their own fresh sweet corn, farm-grown meats and local goodies sold at their farmstand. Please visit their Facebook page and their website for more information.



Sarah's twins, Zoey and Liv, are the 4th generation of cow-loving Cretes.

The Lely Astronaut robotic milking system was designed in 1995 and now milks 2.5 million cows in 50 countries around the world.

There are 15 Lely Astronauts on 6 farms right here in NH. The Cretes have 2 Astronauts for their 130-strong milking herd and the Astronauts have helped to increase their cows from 2 to 2.7 milkings (about 80 pounds) per cow per day.

