

Heavy duty champ turns 50

By Mark Sabbatini

Sun staff

For 50 years MaryAnn and her family have done Antarctica's dirtiest work.

They've been lost beneath the sea ice, abandoned in remote camps for the winter and seen newcomers with less ability take over their jobs – except for the hard ones. Even now, the old codgers are still the toughest hombres on the block.

They may be only machines, but for many in the U.S. Antarctic Program a set of antique bulldozers – known by names such as Pam, Colleen and Big John – are like family. But their retirement is within sight and, as MaryAnn gets ready to celebrate her 50th birthday Sunday, the thought of losing them is crushing for many.

"I'd rather see an old D-8 here than Scott's Hut," said Russell Magsig, a mechanic who has been working in Antarctica for 15 of the past 19 years. "I could easily push (the hut) into the ocean and park it there."

The D-8 refers to a bulldozer not produced since 1963, known as the Caterpillar SD-8 LGP. Caterpillar continues producing updated D-8 models (plus D-6's, D-7's and others), but none have quite the same heavy-duty features users outside Antarctica simply don't need.

"They will pull a heavier, bigger load than anything else that we've got, across more difficult conditions without sinking in and without slipping," said Larry Cook, operations manager at McMurdo Station.

Several decades of hard work and harsh experiences have taken their toll on the metal monsters, even with careful maintenance. Repairs are also getting harder, since many replacement parts are no longer made.

"The bottom line is these things aren't going to be around very long," Cook said. "We've reached a point where we can keep them going, but it takes a lot of effort."

Hence the well-deserved 50th birthday party, even if two of the three guests of honor will be a bit shy of the half-century mark. Colleen and Pam will join MaryAnn in front of the Chalet administrative headquarters at McMurdo at 10 a.m. today for a party honoring the machines for their service.

Dave Bresnahan, the station's National Science Foundation representative, will drive Pam to the event, bringing a cake and some other party nourishment with him. He's driven other bulldozers during his many years in the U.S. Antarctic Program, but this will be his first



Above, a McMurdo Station worker, center, inspects two older D-8 Caterpillar bulldozers in front of the Chalet administration building Jan. 16 as mechanic Russell Magsig parks the machine nicknamed "Colleen." To the left is "MaryAnn," the oldest of the three remaining machines. The third machine, "Pam," will join the pair today to celebrate MaryAnn's 50th birthday. At right, Dave Tuepker and Beth Henry set up a display detailing the history of the tractors, which still outperform newer bulldozers at tasks such as plowing snow and hauling heavy loads.

Photos by Mark Sabbatini/The Antarctic Sun



time behind the levers of an old-fashioned D-8.

"Those machines represent so much history, not only of the program but the people in the program," he said. "I consider it a real honor to do that."

An exhibit detailing the history of the bulldozers was displayed when MaryAnn and Colleen were parked in front of the Chalet last Wednesday. Cook said Mark Eisenger, a McMurdo crane operator, will perform a song titled "MaryAnn" he wrote about the machine. For the most part, the ceremony will be low-key.

"Part of the ceremony will include starting them up so those who don't attend can also take part in the celebration," Cook said.

Over the years those loved ones have been through a lot of abuse. Part of the affection of those who drive and work on the tractors has been their ability to withstand it.

Big John, a class of '59 heavyweight, found himself partially submerged after falling through

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See D-8 on page 8

D-8 From page 7

a crack at McMurdo’s Hut Point during August of 1990, Cook said.

“It went in shallow enough water that it only went halfway in,” he said.

Cook said they determined it was an eyesore and should be put out of sight.

“They decided to lower it by blasting the sea ice around it. In the blasting operation they pretty much blew up the machine, too.”

All was not lost, however. Crews retrieved the machine and fitted the cabin on Colleen, a class of ’59 tractor still at McMurdo, albeit in the repair shop.

MaryAnn, the oldest of the current fleet, was buried in snow after making a traverse to the South Pole. It was dug out and returned to work at McMurdo, although at the moment it is also undergoing repairs.

Pam is still used daily to clear snow and maintain the six-mile-long Williams Field road, service the ice runway, transport 5,000-gallon tanks of fuel to aircraft facilities and transport mobile buildings over the long road. Magsig said Pam has put in about 500 hours of work so far this year, less than the 1,000 she used to in her prime, but it’s heavy-duty work other tractors can’t manage.

“I know they’re putting a lot more than that on the Challengers, but they’re just flying up and down the runways,” he said, referring to a newer model of tractor being used.

The Caterpillar SD-8LGP – which stands for Stretch D-8 Low Ground Pressure – was built specifically for polar programs by Caterpillar, based in Peoria, Ill., during the 1950s.

“Most of the machines were purchased by the U.S. Navy and U.S. Army in the 1950s to 1960s era,” wrote Fred Kaiser, Caterpillar’s sales application engineer. “They were sent to Antarctica and Greenland to do the heavy towing work.”

They were designed to carry heavy loads across snow, featuring a special cold-starting ability and a 54-inch wide track instead of the 36-inch track found on modern equipment. They also had a drawbar pull capacity on snow of 30,000 pounds, compared to about 24,000 for the D-7 model.

“The design was optimized by increasing the flotation of the machine by installing a much wider track than a standard D8, but retaining the weight so high drawbar pull could be exerted even in soft underfoot conditions as snow,” Kaiser wrote.

All the extra heft meant some trade-offs, which is why the newer machines don’t try to imitate them.

“Everybody would rather go 20 mph hauling nothing or haul-

ing a little than 4 mph per hour hauling tons,” Magsig said.

Caterpillar stopped producing the machines because military orders for them stopped, Kaiser wrote.

The design life of Caterpillar equipment is 10,000 to 15,000 hours without a major overhaul, he noted. He said overhauls typically extend the useful life of machines and “I think it would be safe to say the D8 LGP machines at McMurdo have exceeded their design life many times over.”

Part of the reason the machines have lasted so long in Antarctica is driving on snow and ice put much less strain on the bulldozer’s drivetrain than soil and rock, which the drivetrains are designed for, Kaiser added.

Beyond the numbers are the names – and the history they blazed.

A train of the tractors transported construction cargo from Little America V in Kainan Bay to Byrd Station during the 1956-57 summer for the International Geophysical Year. The D-8 was also used during the 1960-61 summer to pull the first U.S. surface traverse to reach the South Pole.

There are also tragic parts of Antarctic history associated with the D-8 models. Williams Field, the skiway for planes coming into McMurdo during the latter part of the austral summer, was named for Richard T. Williams, a Navy tractor driver who drowned in 1956 when the D-8 he was driving broke through the sea ice and sank too quickly for him to escape. Another tractor driver, Max Kiel, fell victim to a huge crevasse during the same period while driving 250 miles southeast of Little America.

Magsig said only one or two of the tractors were running when he first arrived in Antarctica nearly 20 years ago. He said at the time he never would have expected the machines to last this long, but within a few years it became apparent they were built to last and ideally suited for a “sledgehammer mechanic” such as himself.

“We were just as simple as one another,” he said.

But repairs aren’t as simple anymore. Mechanics are forced to make their own replacement parts, borrow them from other tractors or find other ways to piece together the tractors when they malfunction. That takes up an increasing amount of time and money, making them less efficient to keep here, said Bobby Werner, supervisor of the vehicle maintenance facility at McMurdo.

It’s possible the machines could be shipped off the Ice as early as next season, Werner said. He said he has mixed emotions about losing them, but noted they’re probably older than 90 percent of the station’s human population.

“I view them as nostalgic old machines that should be put in a museum somewhere,” he said. “But it’s time to modernize our fleet.”



Photo courtesy of Larry Cook
An older model Challenger D-8 tractor clears snow near McMurdo Station. The bulldozers have a wider track than newer models, making them more suitable for such work.

Model	Drawbar pull	Ground Pressure	Weight
SD-8LGP	94,000 lbs	4.3 psi	69,600 lbs.
D-7HLGP	48,955 lbs.	6.9 psi	62,563 lbs.
DV-87 Challenger	19,360 lbs.	4.6 psi	45,685 lbs.
Challenger 65	12,480 lbs.	5.2 psi	31,000 lbs.
Challenger 95	35,202 lbs.	5.3 psi	33,980 lbs.