

# Bringing safety to pipe handling

New technology allows for precise operation and keeps ground crews out of the "danger zone"



by Keith Barker

Until very recently, the precision movement of large amounts of pipe on a major pipeline project meant having personnel in close proximity to the pipe. Traditionally, crews have been needed on the ground to load, line up and stabilize pipe, and in harsh winter conditions, to clear it of snow or mud and debris. Add to that, the pressure of time constraints on a major pipeline project (or in a directional drilling application, the requirements for precision) and conditions can get unsafe.

The Deckhand Pipe Handling System is a newly introduced technology that allows for precise pipe handling and placement

without requiring ground crews to work in the vicinity of moving pipe.

Developed and manufactured by Minnesota-based LaValley Industries, the Deckhand includes a main head and three interchangeable grab arms designed specifically to handle pipe. The main head connects to an excavator's hydraulics and electrical system using two quick couplers. Because of this, it works as well as its carrier in extreme conditions. It also features 360-degrees of controlled movement, plus a tilt function and side-to-side capability.

The Deckhand's three interchangeable grab arms include a Directional Drilling Arm, Utility Arm and a Pipeline Arm.

The Directional Drilling Arm was the first arm to be developed, for application in horizontal directional drilling. In oil & gas applications, it is ideal for moving and placing pipe casing on a drill deck. It will securely grip pipe casing and easily maneuver it through various angles, and then either stack it or hold it for connection on the drilling platform. The Utility Arm is specifically designed for moving multiple pipe sizes, in a yard or stockpile facility. And lastly, the Pipeline Arm is engineered for stringing operations – moving pipe to and from trains and trucks, and to stockpiles and right-



of-ways. All three arms can securely grip pipe off-center if needed.

For protection of pipe and pipe coatings, the Deckhand uses replaceable pads on both the pipe and utility grab arms, which combined with preset hydraulic pressures, prevent damage. Plus, pressure-sensing controls are linked in the cab of the excavator, which allow operators the ability to set and monitor the pressure, according to any particular pipe design, for any type of coating or wall thickness.

## The DECKHAND is born

Jason LaValley, the inventor of the Deckhand, comes from a background that includes positions as a horizontal drilling jobsite foreman and labourer. He is someone who has first hand experience with the task of loading and unloading drill pipe.

"I lived with the hazards of moving pipe using slings and cables," says LaValley. "I knew I had to come up with a machine to do the dangerous work and keep hands, arms and legs – including my own – out of the danger zone."

"Once the HDD [Horizontal Directional Drilling] Deckhand attachment was up and running and filling the potential we had seen for it, others in the pipeline

**The DECKHAND Pipe Handling System consists of a main head with 360° movement, tilt and side-to-side capability, and three interchangeable grab arms designed to handle pipe.**

dirt, snow or ice and in extreme weather conditions," explains PLM Senior Vice President, Tony Fernandez. "The ground crew doesn't have to climb on top of a slippery pipe stack to clean it."

"We recognized the significance of bringing this level of security and safety to the pipe handling operation."

## On the proving grounds

Premay Pipeline Hauling (PPH) is an industry leader in hauling, stringing and stockpiling of "big inch pipe." The company services pipeline contractors, pipe mills, transmission companies and engineering firms involved in the construction of oil and gas transmission pipelines.

Back in the fall of 2010, PLM demonstrated the Deckhand with 24-inch pipe handling arms at Premay's yard in Edmonton.

"We showed them how it would work for moving pipe from truck to right-of-way, and also demonstrated its flexibility with different kinds of lifts required in the field," explains Sherry Getis of PLM.

"After that demo, Premay's Senior VP and General Manager, Paul Schultz, took it out onto a pipeline project in Northern Alberta."

"One of the things it is being quite successfully used for there, is in handling stockpile that, with the record amount of snowfall, is deeply covered with snow."

"The operators are using the Deckhand's side-to-side feature to push the snow aside enough so that the unit's arms can get a good grip on the pipe," she explains. "Then, they're lifting the pipe up, giving it a shake, and dropping off most of the snow."

"Previously, they would have to use several people up on the pile to clear snow, so they could get a vacuum system to work. It is just so much safer this way – and significantly more productive."

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Jason LaValley

industry were asking us to develop this same handling system for pipeline work."

"We came up with two more options," continues LaValley. "The interchangeable utility arms and the pipe handling arms. We came to the attention of PLM and the rest is making history."

In 2010, Pipeline Machinery International (PLM), who is Caterpillar's global distributor dedicated to pipeline machinery, teamed up with LaValley. As the exclusive distributor of the Deckhand system, PLM has since seen the product operating on several pipeline projects around North America.

"The Deckhand can pick up with stability, even when the pipes are covered in