



CASE STUDY

## ANATOMY OF AN EARLY ADOPTER:

Viant Crane and Samson K-100™ Synthetic Hoist Lines



K-100 on the delivery spool, spliced and ready to install.



Viant Crane is among the fastest-growing crane companies in the country. Two fleets, one of rental cranes and another of operated cranes, are busy year-round. They service an area that stretches from Wisconsin to North Dakota, and from the Canadian border to Texas. A new service center was built in 2014 in Superior, Wisconsin to maintain their equipment.

*"We're meticulous about our machines. We're detailed and precise when it comes to planning and anticipating all the elements of a project. We take nothing for granted, and it shows. As we like to say, there is no 'uh-oh' in the crane business. It has to be right every time."*

— David Lemke, President Viant Crane.

This attitude towards safety and customer service makes it no surprise that Viant Crane decided in early 2015 to retrofit one of its cranes—a National NBT55 'taxi' crane in its operated truck crane fleet—with Samson's ground-breaking K-100 synthetic hoist line.

With just over 2 years of use, we checked in with Viant to review their experience with the K-100 hoist rope, including the decision-making process, operator reaction, and the current state of the rope within their fleet.



The decision to retrofit the 55T boom truck was made after reviewing corporate safety goals and the advantages to be realized with Samson's *K-100*. The specific crane was chosen in part due to its workload, and the frequent need to change between ball and block.

*K-100* on a mobile crane makes for safer handling and more efficient lifting operations compared to steel wire.

## SAMSON K-100™ SYNTHETIC HOIST LINE

Samson's *K-100* replaces steel-wire hoist ropes with a blend of high-performance, high-modulus fibers, including Dyneema®; creating a synthetic rope that has equivalent strength at similar diameters. The result is that the crane's load chart and load pull at a 5:1 design factor remain virtually unchanged, while saving 80% of the weight of wire rope. *K-100*'s resistance to drum crushing is superior to wire rope and it provides robust spooling capabilities.

Easier handling without the danger of injury from broken strands results in quicker, safer reeving operations, while the torque-neutral braided construction reduces load spin and cabling. Kinking and bird-caging are eliminated, and rope diving to lower layers on the drum is easily reversed with no adverse effect on the rope. Add it all together, and *K-100* on a mobile crane makes for safer handling and more efficient lifting operations compared to the wire rope it replaces. With no lubing required, *K-100* eliminates environmental concerns on the worksite. It is also easily inspected externally and internally in the field.

## VIANT'S DECISION

The decision to retrofit the 55T boom truck was made after reviewing corporate safety goals and the advantages to be realized with Samson's *K-100*. This specific crane was chosen in part due to its workload, and the frequent need to change between ball and block. The ease of handling makes this type of switch much faster. After reviewing all the data, the decision to proceed with the retrofit was made quickly—within a month.

## IMPLEMENTATION: THE PROCESS

The hoist line was installed in April of 2015. Samson field technicians were on-hand to survey the crane and ensure that all contact surfaces were within Samson's recommended maximum surface roughness threshold of 300 micro inches, and the crane was ready for the installation of the new hoist line. Installation of *K-100* is a valuable opportunity to pass along information on proper handling and inspection techniques to both the operator and the maintenance crews. Training picks, graduated lifts as detailed in the installation procedure, allow the new rope to 'bed in' to its operating diameter and settle on the winch drum while giving the operator an introduction to the new hoist line and its capabilities.

Because best-in-class service is a standard for Samson, they contacted Viant personnel periodically throughout the trial to check on Viant's experience, answer any questions, and resolve any issues that they may have. Of Samson, and Regional Sales Manager Joe Lander, Viant says, "Samson has been excellent with providing training. Joe is upfront, and quick to respond."

At its one-year anniversary, the hoist line was end-for-ended. The rope was spooled off the winch drum and thoroughly inspected for abrasion and wear, both internally and externally, as it was removed. After a satisfactory inspection review, and approval for continued service, the outboard and inboard ends were re-spliced, and the hoist line was returned to service.

In April 2017, with two years of service, the rope was removed from the crane for the purpose of collecting field data and replaced with a new *K-100* hoist line. The removed rope was inspected on site and showed minimal wear and abrasion that were consistent with its length of service. The rope was returned to Samson's lab for further testing where lab inspection and residual strength tests confirmed the rope performed according to published specifications.

## RESULTS: THE BENEFITS

With just over two years of experience using the rope, we spoke with Barry Buckman, Viant's fleet manager and Jeff McGuire, operations manager and crane operator, to get their feedback. They shared thoughts about the rope's performance and the benefits they've seen thus far:

*"...operators were somewhat reluctant at first, just because they didn't understand it—as it wore a little and got a little fuzzy outside, they were a little skeptical. Over time they've accepted it well, come to trust it. They do appreciate how easy it is to work with. They wouldn't want to switch back (to wire), I can guarantee that."*

*"Other operators are patiently waiting for the chance to use it on the larger rigs."*

Asked about the operational benefits: *"Ease of use for the operator, faster to reeve when changing from ball to block...it's a big time saver."*

Compared to wire: *"It's night and day to handle—safer—no broken strands to cause punctures."*

There was another benefit that came to light that hadn't been fully anticipated—concerning the more stringent spring road weight restrictions in Wisconsin and Minnesota. As the spring thaw begins, the states mandate load restrictions and axle weight limits. According to Viant, the lighter weight (*K-100* is 80% lighter than the wire rope it replaces) was "a definite benefit on the spring roads up north."



Samson trains the operator and the maintenance crews on handling and inspection techniques.

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**JEFF MCGUIRE, VIANT OPERATIONS MANAGER**





“We’re looking forward to retrofitting our larger cranes when possible. There’s a definite advantage on larger cranes where they swap out equipment more often, going from two lines to one, swapping drums...lower maintenance costs, lower weight—including over-the-road weights—are all a definite benefit.”

BARRY BUCKMAN, VIANT FLEET MANAGER



### WHAT THE FUTURE HOLDS:

Barry Buckman: *“We’re looking forward to retrofitting our larger cranes when possible. There’s a definite advantage on larger cranes where they swap out equipment more often, going from two lines to one, swapping drums...lower maintenance costs, lower weight—including over-the-road weights—are all a definite benefit. Any weight we can save is a real benefit.”*

About working with Samson: *“Samson is excellent to work with—the information is top-notch, the training for inspection, it’s all backed up with solid information.”*

### FOR ADDITIONAL INFORMATION:

For more information on Samson’s complete line of high-performance ropes, visit our website, **SamsonRope.com**, or contact our customer service department at [CustServ@SamsonRope.com](mailto:CustServ@SamsonRope.com)



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