

## Upward Mobility

CHS INC., OPTIMIZES ITS LPG SUPPLY CHAIN WITH THE HELP OF A MOBILE TRANSLOADER DESIGNED BY WESTMOR INDUSTRIES THAT FEATURES A BLACKMER® LB601-LU RECIPROCATING GAS COMPRESSOR

*By Bill Holmes*



The mobile LPG transloader that was designed for CHS Inc., is mounted on the bed of a truck with a hydraulic stairway and platform that allows the operator to walk to the top of the railcar in order to initiate the LPG-transfer process.

CHS Inc. is the nation's leading cooperative, owned by farmers, ranchers and co-ops across the United States. A diversified energy, grains and foods business and a Fortune 100 company, CHS is committed to providing the essential resources that enrich lives around the world. CHS supplies energy, crop nutrients, grain, livestock feed, food and food ingredients, along with business solutions including insurance, financial and risk management services. The company operates petroleum refineries/pipelines and manufactures, markets and distributes Cenex® brand refined fuels, lubricants, propane and renewable energy products. Currently headquartered in Inver Grove Heights, MN, USA, a suburb of Minneapolis/St. Paul, CHS is one of the nation's top 10 suppliers of liquefied petroleum gas (LPG) for use in fueling and heating applications.

CHS has one of the nation's largest private truck fleets, one that logs more than 35 million miles annually. But even a company as prominent and well run as CHS can experience some fuel-supply challenges. That can especially be the case in the fall, a time when the Midwest crop-drying season is

at its peak, while there is a simultaneous rise in demand for LPG as retailers and consumers build up their stocks in advance of the upcoming winter heating season.

"We have some railcar reshipe terminals that are strategically positioned throughout our network that can help us out with our crunch-time LPG needs," explained Joe Schnichels, Senior Account Manager in Propane Equipment for CHS Inc. "In the past, however, when a user needed additional supply during high season, we'd sometimes have trouble getting the supply out to them."

These are the types of challenges that can dog even the most successful of companies, but part of that success is identifying a problem and undertaking a search to find the solution, which often might only be found by resorting to atypical means. So, knowing that bottlenecks could sometimes crop up in the LPG supply chain and have a negative effect, in 2009 Schnichels went in search of a solution that would help improve any inefficiencies in the system.



The CHS mobile transloader has traveled as far as Idaho to assist in a variety of LPG-offloading operations.

For assistance, he turned to long-time CHS equipment provider Westmor Industries, Morris, MN, USA. Westmor Industries is a leading designer, manufacturer, distributor, installer and service provider of parts and equipment in the petroleum, LPG, CO<sub>2</sub>, aviation and liquid-handling industries.

## Going Mobile

“I was approached by Joe to help develop an LPG transloading system that was more mobile than the standard ones,” said Mike Hennen, General Manager, Truck and Trailer Division for Westmor Industries. “He wanted a transload system that was mounted on the bed of a truck,

had a hydraulic lift on a stairway and a platform that could swing to the railcar, which allowed the operator to walk to the top of the railcar. It would also use the truck’s power takeoff (PTO) to run the compressor.”

This design would enable CHS to simply drive the transloader to any railroad siding where a fully loaded LPG railcar would be waiting and then transfer the LPG to a waiting transport, which would then deliver the load to the expectant customer. The transloader is also outfitted with a 3-inch supply line and tees that allow the 3-inch line to accommodate multiple 2-inch lines so more than one transport can be loaded at the same time.

“The really unique part about this transloader is that it is self-contained,” continued Hennen. “It has a set of bulkheads that hook to the trailer, the pipes go up the ladder and swing with the platform, the operator hooks three hoses to the railcar and everything is operated from ground level. Since it has its own power unit it can be moved to a new site in a matter of 15 minutes with no disassembly required; you just unhook and store the hoses and you’re ready to go.”

The mobile transloader has not only been a boon for CHS’ existing customer base, but it can also be used as a tool to help identify potential new markets or business opportunities.



A Blackmer® LB601-LU Reciprocating Gas Compressor is mounted on the bed of the mobile LPG transloader and runs off the truck’s power takeoff (PTO) during product-transfer activities.



“The mobile transloader has added more flexibility to our supply operations,” said Schnichels. “Now, we can position railcars in various regions during the time of peak demand. When a user needs additional supply, we send out the transloader and deliver the product, which helps us build a good customer relationship. It also gives us another opportunity to test the validity of the market in that area. Already, we’ve used the transloader in a couple of different areas and then followed up by putting in a permanent railcar offloading facility there.”

The success of the initial mobile LPG transloader, which was delivered in 2009 (and has since been sold), led Schnichels to wonder just how effective the design could be if it had the ability to offer a higher flow rate when offloading a railcar, which would not only optimize the time spent unloading the railcar, but the cost to do so. With that in mind, he went back to Hennen and Westmor in 2011 with a simple demand: “Build me a unit with a larger compressor that can help optimize loading time and volume.”

### Relying on Compressors

At its most basic, the mobile LPG transloader will only reach its optimum level of performance if it features the right kind of compressor. With Hennen’s enthusiastic endorsement, the compressor on the newest CHS mobile LPG transloader, which was delivered in 2011, is a Model LB601-LU Reciprocating Gas Compressor from Blackmer®, Grand Rapids, MI, USA.

“We recommended the Blackmer for a simple reason,” said Hennen. “Though the LPG compressor industry is competitive, we told Joe that his best choice was to get a Blackmer, and that if he did he’d have a very sound, reliable piece of equipment.”



CHS Inc., through its Cenex brand, is one of the nation’s top 10 suppliers of LPG for use in fueling and heating applications.



Joe Schnichels, Senior Account Manager in Propane Equipment for CHS Inc., helped develop the mobile LPG transloader as a way to add flexibility to the company’s supply operations.

That’s because Blackmer’s reciprocating-gas compressors have been designed with LPG transloading operations in mind. Blackmer LB601-LU compressors are equipped with high-efficiency valves, ductile-iron cylinders, PTFE piston rings, self-adjusting PTFE piston rod seals and a pressure-lubricated power frame. This robust design gives them the ability to operate for hours, which is required to remove all of the liquid from a railcar, and also to maximize vapor recovery, which is like adding an additional 3% of product volume to every load. The compressor is also able to deliver a flow rate that approaches 300 to 325 gpm. This equates to lower offloading times, which is a benefit to all parties involved. Thanks to these operational advantages, Blackmer LB Series compressors can readily handle the transfer and vapor recovery of LPG, butane and propane. Additionally, Blackmer compressors, all of which are cast and machined at the company’s facility in Michigan and are American made, also offer the industry’s best warranty. The warranty covers the compressor for

three years after installation and also includes a One-Year Performance Assurance that provides free replacement parts during the first 12 months of operation.

“The key thing with the LB601-LU compressor is that we can take 30,000 gallons of product off a full railcar in three-and-a-half hours pretty easily, even with recovering the vapor,” said Schnichels. “The very low maintenance, reliability and overall performance are the other key operating points. We’re really very pleased and well-satisfied at this point with the performance of the Blackmer equipment.”

## Conclusion

With the success of the mobile LPG transloader already well-documented it has been traveling CHS’ expansive territory like a rock star, with crowd-pleasing stops throughout Minnesota and South Dakota, and as far away as Idaho. In fact, when Schnichels spoke in early 2012, the transloader was parked at a CHS terminal in North Dakota where it was loading LPG that had been produced at the Bakken Shale formation onto railcars for delivery to customers.

LPG produced in shale plays can also be another potentially lucrative market for CHS and Schnichels foresees a day in the not-too-distant future when an entire fleet of mobile LPG transloaders are traversing the Upper Midwest, helping LPG suppliers satisfactorily meet the demands of their customers.

“We’ve had this new unit for six months and we’ve been keeping it very busy,” said Schnichels. “People like the design and we have gotten interest in building other units for them. If all things go according to plan, then we’re probably going to expand in this area.”

And expect any new mobile LPG transloaders that are commissioned by CHS to have an LB601-LU Series Reciprocating Gas Compressor riding shotgun.



Blackmer® Model LB601 Reciprocating Gas Compressor

## About the Author

Bill Holmes is the Regional Director of Energy & Transfer in the USA and Canada, for Pump Solutions Group (PSG®), Downers Grove, IL, USA. He can be reached at (847) 726-7565 or [bill.holmes@pumpsg.com](mailto:bill.holmes@pumpsg.com). For more information on Blackmer’s full line of pumps and compressors, please go to [www.blackmer.com](http://www.blackmer.com) or call (616) 241-1611. PSG is comprised of several leading pump brands – Almatec®, Blackmer®, EnviroGear®, Griswold™, Maag®, Mouvex®, Neptune™, Quattroflow™ and RedScrew™ and Wilden®. You can find more information on PSG at [www.psgdover.com](http://www.psgdover.com).



[www.blackmer.com](http://www.blackmer.com)

World Headquarters

1809 Century Avenue SW  
Grand Rapids, MI 49503-1530 USA  
T 616.241.1611 F 616.241.3752

