

# THE VOYAGE OF VESSEL 1631

Patrick Burdette, President, Modern House & Building Movers, Inc.

**F**rom the first question to her final resting-place, the voyage of Vessel 1631 was filled with unexpected challenges and spur of the moment decisions that tested the integrity and meddle of Modern House and Building Movers, Inc., of Orlando, Florida.

Can you load it in less than a foot? That was the first question Patrick Burdette, president of Modern House and Building Movers, said he was asked in exploring the possibility of moving the vessel from Ohio to North Dakota.



**Vessel 1631 arrives in Sandusky, Ohio, completing the 16-mile journey from Bellevue, Ohio.**

The reason, explained Jim Lyons of Lyons Specialized Transport, of Yankton, SD was that vessel 1631 was a low-pressure vessel bound for an ethanol plant in North Dakota.

The challenges continued. The vessel was 101 feet 3 inches long, 14 feet wide and 15 feet high. Fabrication was begun in Bellevue, Ohio where all utilities and traffic control devices are 16.6 feet above the surface of the road; hence, loading the vessel in less than a foot of water was imperative.

Also, the vessel had only a one-half-inch wall thickness and a requirement that the vessel could only be lifted and supported by saddles.

So, according to Burdette, a plan was developed to load the vessel in Bellevue, transport it to Sandusky to a site on Lake Erie suitable for loading it on a load-line barge. A 1,500 mile trip through the

Great Lakes would get the vessel as far west as water would allow to the Port of Duluth, Minnesota on Lake Superior. From there to its destination of Beulah, North Dakota was only 400 miles, as the crow flies, added Burdette. .

Burdette said he was suspicious that something might be amiss when he visited the Bellevue shop to verify the measurements and couldn't find a vessel. I might be a little slow on the draw sometimes, but it finally dawned on me that production was way behind schedule, he said. In fact, the vessel wasn't even built.



**Arriving at the Kelly Island Ferry Docks in Sandusky, Ohio**

The move had already been set, according to Burdette, so he immediately deduced that it might pose a problem. This soon became evident to Dakota Gasification, receiver of the vessel, who was under the impression that the fabrication was near completion. In fact, there were actually three vessels to move on that date with Vessel 1631 being the largest.

As a result, the fabrication shop went into high gear to get Vessel 1631 as ready as possible by the move date. Plans changed from Duluth to Beulah to Duluth to a tank shop in Cambridge, Minnesota, some 150 miles from Duluth. Cambridge was still about 400 miles from Beulah, North Dakota, Again, as the crow flies, said Burdette. But we figured we would burn that bridge when we got to it, he said.



**Loaded vessel up on dollies to achieve adequate ground clearance for loading onto the barge in Sandusky**

In the meantime, the low-pressure vessel had to be loaded by saddles only, and in less than 12 inches of water, Burdette recalled. We fabricated saddles out of one inch T1-steel into a U shape with flanges on the top, he said. The U would hang down between our double W8 X 67 carry beams and support the saddles on each end. The saddle were only 12 inches wide, which allowed Modern House and Building Movers to load or unload the vessel by jacking or blocking the remainder of the saddle. This would enable us to load the vessel setting only one inch off the ground, Burdette explained. We would be able to carry the load with adequate ground clearance and a loaded height of 15 feet and 10 inches.

Burdette said they were good to go with this design until they got to the vessel. Like I said, sometimes I may be a little slow on the draw but I had a drawing to go by.

Unfortunately, what Burdette thought were little lines on the drawing were incremental measurement marks were actually vacuum rings that were positioned from four feet to six feet apart for the length of the vessel. The rings were one-half inch steel plate on edge that protruded from the vessel six inches, adding 12 inches to the diameter of the vessel and were precisely in the way of the dolly tires, he said.

We used W12 X 170 Main Beams, bolted together to create a length of 100 feet, he explained. We put three dollies down each side of the vessel and one in the front to steer and to pull. The 150,000-pound vessel and 75,000 pounds of steel and dollies gave us an axle loading of about 18,000 pounds per axle. One set of dollies would be the control and two sets would castor.

This proved to be a huge problem, however, when the move made its first turn. The castoring dollies had a tendency to catch the vacuum rings, which immediately turned a dolly upside down. You could pump up the dolly's cylinders raising the vessel and vacuum rings out of the range of the tires unless you have any type of grade, Burdette explained.

The crew fought the predicament all the way to the ferry docks where arrangement had been made to use of the facility for loading the vessel on a barge. However, in order to make the ramp climb onto the barge, dollies were used to raise the vessel to a height where the crew could put four dollies under the carry beams to give it ample ground clearance for the climb.

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**Loaded, blocked and secured on the barge in Sandusky, ready for the two-week trip through the Great Lakes**