

Historic Steamer *Belle of Louisville*

All About the *Belle's* Engines and Steam System

How do the pilot house and engine room “talk” to each other?

On the ceiling on the port side of the engine room are several bells of different sizes. They are part of the original “bells and gongs” method of communication between the pilot house and the engine room installed when the boat was built in 1914.

Using a rope and pulley system attached to the steering wheel housing in the pilot house, through a specific set of signals the pilot would tell the engineers the direction and how fast he wanted the boat to go.

All the pilots, captains, and engineers had to be very well trained on the language of the bells and gongs to insure safe passage. One mistake could mean disaster.

Then...

In 1954, a “telegraph” system was installed in the *Belle's* pilot house. Using an indicator that looks a little like a clock face, the pilot moves a handle on the telegraph and stops on the necessary command.

A similar handle on a similar face responds in both the engine room and boiler room, telling the engineers and strikers whether the pilot wants to move forward or backward and at what speed.

The *Belle's* operation depends on teamwork between the pilot house, the engine room, and the boiler room.

While most of the communication will continue through the more trustworthy telegraph system, because of its historic significance several of our pilots, captains, and engineers are learning the complicated bell-and-gong signals.

How do the engines work?

There are two engines turning the paddlewheel – one on the starboard (right) side and one on the port (left) side.

They are simple machines with one cylinder each, working in tandem about a quarter-turn apart. While one pushes the other pulls, allowing the paddlewheel to work in an even rhythm.

Even today, forward and backward gears are changed by hand for both engines, the same way it was done when they were built more than 100 years ago in the 1890s. They're even older than the *Belle*!

As was often the case in steamboat history, when a boat could no longer operate parts were salvaged and used on other boats. That our engines work today as well (or better!) than they did when they were new is a testament to the conscientious care and regular maintenance they receive every year.

How important is the *Belle's* steam power?

Steam power turns the paddlewheel and provides electricity to the boat and her operational equipment.

A “power steering” system was installed when the boat was built, allowing the pilot to more easily turn the boat's original 7' maple steering wheel. That system is also steam powered.

If it weren't for steam nothing would function on the *Belle*. When you get a drink of water, buy a box of popcorn, read this information by electric light, or listen to the whistle blow, remember that steam makes it all possible.

How does steam move through the system?

The piping above the engine room carries steam between the boilers and the engines and other equipment necessary for boat operation.

For a closer look at how it all works, the diagram on the back of this page shows the *Belle's* steam system.

How does the boat move in the water?

The paddlewheel is the *Belle's* only propulsion. The engines are attached to the paddlewheel with pitman arms that you can see on each end of the paddlewheel.

Our paddlewheel bucket planks are 24' long and the wheel is about 17' in diameter. The buckets are made of very hard white oak so they can withstand the rigors of river wear and tear.

If you're on board and would like to know more, ask one of the members of the engine room crew for information.

To learn more about this special historic steamboat (the oldest operating river steamboat in the world!), you can purchase a booklet – “A Window to the Past, A Door to the Future” – in the *Belle's* gift shop.

With extremely knowledgeable assistance from the *Belle of Louisville* engineers and captains, history reported by Kadie Engstrom, Education Coordinator, 2006, rev 2008, 2009