

Transporting the MHU1700 hydraulic hammer around the country has become routine work for Bellville Rodair International. **ACT** reports

Hammer

Three times over 18 months Bellville Rodair International's (BRI) projects division managed the transport of a MHU1700 hydraulic hammer from Amelia, LA to Oakland, CA. The hammer weighed 403,000 pounds and was used to drive the piles for the Oakland-San Francisco SkyWay project on the new Oakland Bay Bridge.

The MHU1700 hammer dives piles into the seabed for support on the bridge spans. On the Bay Bridge project, the MHU1700 was used to drive 160 steel piles to support the bridge span. The piles are approximately 8 feet 2 inches (2.5 meters) in diameter. The MHU1700 is manufactured, owned and operated by Menck GmbH of Kaltenkirchen, Germany.

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Transporting the hammer is a monumental task, requiring the use of a barge, a Goldhofer system and a railcar. The MHU1700 hydraulic hammer was recently featured on the Discovery Channel's "Extreme Engineering" television program. This particular episode focused on the building of the bridge and was titled "Building the Bay Bridge."

The MHU1700 hammer, manufactured, owned and operated by Menck GmbH of Kaltenkirchen Germany, being lifted by a crane on the barge *The General*



The pile sleeve for the MHU1700 hammer was trucked from Louisiana to Oakland, CA. The sleeve attaches to the hammer and guides it down on to the piles being driven into the sea bed

The hammer was transported on a 260-foot inland deck barge from Amelia, LA to Morgan City, LA, approximately 11 miles via the Mississippi basin. It was loaded at 8 a.m. and arrived in Morgan City the next day at 7:30 a.m. During the transport, the US Coast Guard closely monitored and restricted river traffic between noon and 5.30 p.m. during the discharge phase of the move.

A 14-line Goldhofer system was used to disperse the weight of the hammer due to restrictions on the maximum weight per square foot on the dock at the Port of Morgan City, LA. "We had to bring the weight per square foot to below 1,000 pounds per square feet," says Paul McAuley, vice president projects, North America, for Bellville Rodair International. "We actually managed to reduce the pressure to 785.7 per square foot using the Goldhofer."

The Goldhofer system was 80 feet 3 inches long, with a total GVW of 550,000 pounds.

The Goldhofer was lifted and loaded onto the barge at J. Ray McDermott's terminal in Amelia, LA. The MHU1700M hammer was then lifted and lowered onto the Goldhofer system which was already on the barge and tied down.

"For discharge in Morgan City, we constructed a ramp and were able to drive the Goldhofer system and the MHU1700M



off the barge to the railhead at the Port of Morgan City," says McAuley. "The biggest factor here was the water level, and ensuring we did not exceed the 1,000 pounds per square foot across the dock at the Port of Morgan City. The local railway was the Louisiana Delta Railroad."

To lift the hammer off the Goldhofer system, an 850-ton capacity gantry crane was utilized. "Once released we simply pulled the Goldhofer out and slid the heavy duty rail car under the MHU1700 hammer," says McAuley.

about the company

Bellville Rodair International has become an expert at transporting the large hammer and its additional 400 tons of related cargo back and forth to California. BRI is a full-service project freight forwarder specializing in the transportation of oil and gas equipment and cranes and construction equipment requiring specialized hauling services including dismantling, heavy lifts, and rigging and over-dimension cargoes worldwide. Based in Houston, TX, BRI operates 18 offices worldwide.

haul



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The MHU1700, and its smaller sister MHU500T, was used several times on the Oakland Bay Bridge project, in the years 2001, 2003, 2004 and in 2006

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For the transport from Morgan City to Richmond, CA (just outside Oakland), “we utilized a KRL 304 – a 370-ton capacity, 45-foot straight deck flat car with two idlers,” says McAuley. “The transport via rail took 36 days outbound and 57 days

return. Arizona and California were the two problem states for permits and restrictions, but both accommodated us eventually.”

The rail clearance took 12 weeks and full pricing took another eight weeks, he says. “As the KRL railcars are in short supply and heavy demand, we had to reposition the KRL

The hammer secured to a KRL 304 rail car for rail transport. For tracking purposes BRI leased a GPS tracking system and secured it to the MHU1700 hammer, enabling the company to track and monitor daily progress via the rail system. The rail carrier contracted was BNSF



304 railcar all the way from Bellingham, WA to Morgan City, LA,” McAuley explains.

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“Once in Richmond, we transferred the MHU1700 to the barge crane **act** *The General* for delivery out to the bridge jobsite,” says McAuley.

In addition to the hammer, a pile sleeve was also a part of the transport. The pile sleeve attaches to the hammer and guides it down onto the piles being driven into the sea bed. It is 14 feet 8 inches wide and weighs 160,000 pounds. Due to width restrictions, the pile sleeve was not able to be shipped by rail. It was transported via road freight from Amelia, LA to Oakland, CA using a 13-axle transporter. It took five weeks for permits and route surveys on the road freight and 16 days to reach the final destination, McAuley says.