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Dredge Ladder Improvements for USACE Dustpan Dredges

The Dredge JADWIN started the 2015 Dredging season with a new look. The JADWIN completed the replacement of the A-frame and ladder during the offseason at the Ensley Engineer Yard (EEY), Memphis District's Maintenance Facility. The new ladder gantry frame reduces the height and vision obstruction of the former ladder hoist A-frame. The new ladder increases the JADWIN's dredging depth from 68 feet to 70 feet and incorporated the Dredge HURLEY's dustpan heads and jetting system to increase production.

The gantry frame and ladder design was completed by the Marine Design Center (MDC) and Bristol Harbor Group (BHG). The gantry frame was constructed by the JADWIN crew in Vicksburg, MS, while the ladder construction was contracted to Hendry Corporation of Tampa, FL, by MDC. The gantry and ladder were delivered to EEY and installed in their dry dock by a collaboration between EEY and the JADWIN crew, with JADWIN Chief Engineer, Perry Huskey, performing as the project superintendent.

The new ladder is constructed with high strength steel that allows the increase in dredging depth, while using the JADWIN's existing hoisting winch. The new ladder and gantry lifting configuration includes the use of a new block assembly from Gunnebo-Johnson and a platform that allows work to be done on the blocks while in place.



JADWIN in EEY Drydock with new ladder and gantry

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Floating Plant Highlights

Mat Sinking Unit Replacement

The initial design analysis for the new Mat Sinking Unit (MSU) has been completed. MDC has contracted with Naval Architecture firm, Bristol Harbor Group (BHG) to develop a potential hull form and perform systems analysis. Another contract will be issued through an existing research contract for the National Robotics Engineering Center (NREC) to determine the feasibility and application of robotics for the MSU's industrial process.

For additional information, contact Michael Kelley, Michael.Kelley@usace.army.mil.

QUAD CITIES Replacement

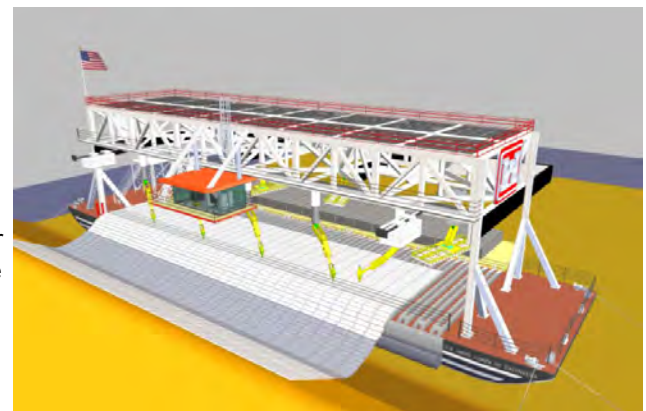
A contract was awarded to Seatrax Inc. to supply a Model S14440 Kingpost design lattice boom crane, rated for 846,000 lbs, which is to be installed on a new barge for the replacement of the QUAD CITIES. MDC has issued a task order to BHG for the barge hull and structural design, while machinery design will be completed by MDC.

For additional information, contact Walter Czop, Walter.J.Czop@usace.army.mil.

SHREVE Repair

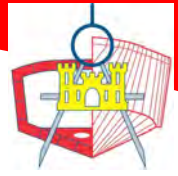
The floating crane SHREVE Repair was awarded in February 2016 to PaR Systems, Inc. The SHREVE Repair Contract consists of reviewing the crane for compliance with current crane standards, repair and replacement of the hoist drives, brakes and boom, as well as updates to other auxiliary systems.

For additional information, contact Walter Czop, Walter.J.Czop@usace.army.mil.



Solidworks Rendering of new MSU Concept

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USACE Representative to the American Bureau of Shipping

Mr. Timothy Keyser, Chief of Hull Section with the Marine Design Center, has been appointed as the USACE Representative to the American Bureau of Shipping (ABS). The USACE Representative will be responsible to report to the Chief, Operations and Regulatory Division, HQUSACE and the Inland Marine Transportation System Board of Directions (IMTS-BOD) any proposed actions of the ABS and the analysis and interpretation of those actions with respect to their impact on USACE in general and the IMTS in particular. As the USACE Representative, Mr. Keyser will be the principle USACE member to ABS Technical Committees related to small vessels, "western rivers" and dredges. As well as coordinating with other USACE Centers of Expertise and operating elements for comments and impacts on proposed rule and regulatory changes.

For any questions related to ABS Rules or Regulations, contact Tim Keyser, Timothy.J.Keyser@usace.army.mil.

New MDC Dredge Expert

Mr. Ryan Immel has been selected as the new Marine Engineering Expert in Dredges, Dredging Equipment, and Ancillary and Auxiliary Systems associated with dredging, the position formerly held by Mr. Vinton Bossert. Mr. Immel has worked for the Marine Design Center since 2006 as a Mechanical Engineer and has done extensive work with many of the Corps Dredges. Mr. Immel earned his Bachelor's Degree in Mechanical Engineering and Master's Degree in Systems Engineering from Pennsylvania State University.

For any question on dredges and dredging equipment, contact Ryan Immel, Ryan.W.Immel@usace.army.mil.

Dredge Ladder Improvements for USACE Dustpan Dredges (Continued from Page 1)



Dredge HURLEY Ladder Extension under construction

being provided by AVID Controls, along with PLC controls. Auxiliary equipment for the new ladder include; a new Hofer Systems vacuum relief system, and a new water pump system for the suction sealing face, gland seals, VFD Cooling and the reduction gear oil cooling.

For additional information, contact Ryan Immel, Ryan.W.Immel@usace.army.mil.

The Dredge HURLEY Ladder Extension project is under construction at Ensley Engineer Yard. The ladder extension will increase the HURLEY's maximum dredging depth from 45 feet to 75 feet. Additionally, to keep dredging production the same at the new 75 foot maximum depth as the existing 45 feet, the new ladder will have a Mobile Pulley Works ladder mounted pump rated for 68,000 GPM at 20 feet total dynamic head (TDH). With the new ladder the HURLEY will be able to operate during higher water levels associated with early spring that have restricted the dredge from operating in the past.

The ladder pump will be driven by two 700 HP variable frequency driven (VFD) ABB electric motors, through a Lufkin horizontal reduction gear. The VFDs are rated for 1000 HP and are



Dredge HURLEY VFDs



Tulsa District Repowers M/V MR PAT



New Propulsion Engines in the MR PAT

The Tulsa District's M/V MR PAT completed a repowering of its main propulsion system. The new main propulsion system will reduce the MR PAT's air emissions and improve its fuel efficiency.

The original Caterpillar 3412 main engines, shafts, propellers, Twin Disc gears, grid coolers, exhaust systems and pneumatic engine controls were removed, and replaced with new Tier III Caterpillar C32 main engines, Reintjes reduction gears, shafts, propellers, Fernstrum Keel coolers, exhaust systems, Caterpillar Electronic engine monitoring and Kobelt electronic throttle controls. MDC provided engineering, contracting and project management services, in the procurement of the new equipment, design of the removals and installations, and oversight during the repower. The repower was performed by the Memphis District at the Ensley Engineer Yard (EEY), Memphis District's Maintenance Facility.

For additional information, contact James Asbury,
James.H.Asbury@usace.army.mil.

Floating Plant Highlights (Continued from Page 1)

PEGASUS

NASA's PEGASUS was successfully delivered to NASA's Stennis Space Center (SSC) on September 17, 2015. The barge remains docked at SSC where members of NASA have been continuing to outfit and prepare the vessel for future transports. The PEGASUS will be used to transport the new larger core stage rockets for the SLS to NASA's Kennedy Space Center in Florida. In addition, MDC in conjunction with BHG have continued to work with NASA on other related analyses for their marine plant.

For additional information, contact Nick Hirannet,
Nick.N.Hirannet@usace.army.mil.

Survey Vessels

The NAP SHUMAN Replacement was awarded to All American Marine of Bellingham, WA. Construction is in progress with an estimated delivery in Spring 2017.

The NAB Survey Vessel was awarded to Technology Associates Inc. of New Orleans, LA. Notice to proceed was issued on January 27, 2016 and delivery is estimated in Fall 2017.

For additional information, contact Michael Kelley, Michael.Kelley@usace.army.mil.

Olmsted Wicket Lifter

The Olmsted Wicket Lifter design is scheduled to be completed in the Spring of 2016. MDC had Computational Fluid Dynamics (CFD) analysis performed to provide required forces for raising and lowering wickets. These forces were then used to size and design the wicket lifter crane and barge. The majority of remaining design work is in finalizing the crane foundations, electrical system, spuds, winches, and deck anti-icing system.

For additional information, contact Nick Hirannet, Nick.N.Hirannet@usace.army.mil.



PEGASUS



Regulatory and Industry Notes

Subchapter M

Workboat.com has reported that The Department of Homeland Security has signed off on the 46 CFR Subchapter M legislative package and forwarded it to the White House Office of Management and Budget (OMB) for review. This is the final stage of the process before it is published in the Federal Register.

The OMB review is typically limited to 90 days, so the final rule will be expected to be published in the late spring or early summer. Details of the Subchapter M package that was forwarded to OMB have not been disclosed to the public, and without specific information, the industry is assuming the final Subchapter M package will be similar in content and requirements as the proposed Subchapter M that was issued in August 2011. ([Subchapter M, Aug 2011](#))

Districts and vessel operators should be familiar with the proposed Subchapter M requirements and evaluate their operations and vessels to best prepare for the pending legislation.

Ballast Water Management

In November 2015, the US Coast Guard revised their rules for ballast water reporting and record keeping. Effective on February 22, 2016, the Coast Guard will require vessels with ballast tanks operating exclusively on voyages between ports or places within a single Captain of the Port (COTP) Zone to submit an annual report of their ballast water management practices.

33 CFR 151.2060(e) states that "a vessel operating on voyages exclusively between ports or places within a single COTP Zone, and subject to this subpart and this section, must submit the information required by paragraph (f) of this section to NBIC by electronic Annual Ballast Water Summary Report format using methods specified at NBIC's [Web site](#).

The report will include the vessel's information (name, identification number, vessel type, operator, tonnage, call sign and COTP Zone of operation), ballast information (number of ballast tanks and total ballast water capacity) and operational information (estimated number of times ballast water is discharged, estimated volume of ballast water discharged each time, primary port of ballast water loading and discharge, and certification of compliance with § 151.2050 - ballast water management practices).

For calendar year 2016, the Annual Report is due on March 31, 2017. The following link is to the US Coast Guard's [Ballast Water Management Program](#).

For any questions, contact Tim Keyser, Timothy.J.Keyser@usace.army.mil.

US Army Corps of Engineers Marine Design Center

The Marine Design Center is the Corps of Engineers center of expertise and experience for the development and application of innovative strategies and technologies for naval architecture and marine engineering. We provide total project management including planning, engineering, and shipbuilding contract management in support of Corps, Army, and national water resource projects in peacetime, and augments the military construction capacity in time of national emergency or mobilization.

Marine Design Center
Wanamaker Building
100 Penn Square East, Room 630 S
Philadelphia, PA 19107

Any questions or suggestions for the next issue can be referred to Ryan Immel at:
Phone: 215-656-6850
Fax: 215-656-6868
E-mail: ryan.w.immel@usace.army.mil



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- Model Testing
- Dredging Systems
- Design & Construction of Floating Plant
- Arc Flash Hazard (AFH) Analysis

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