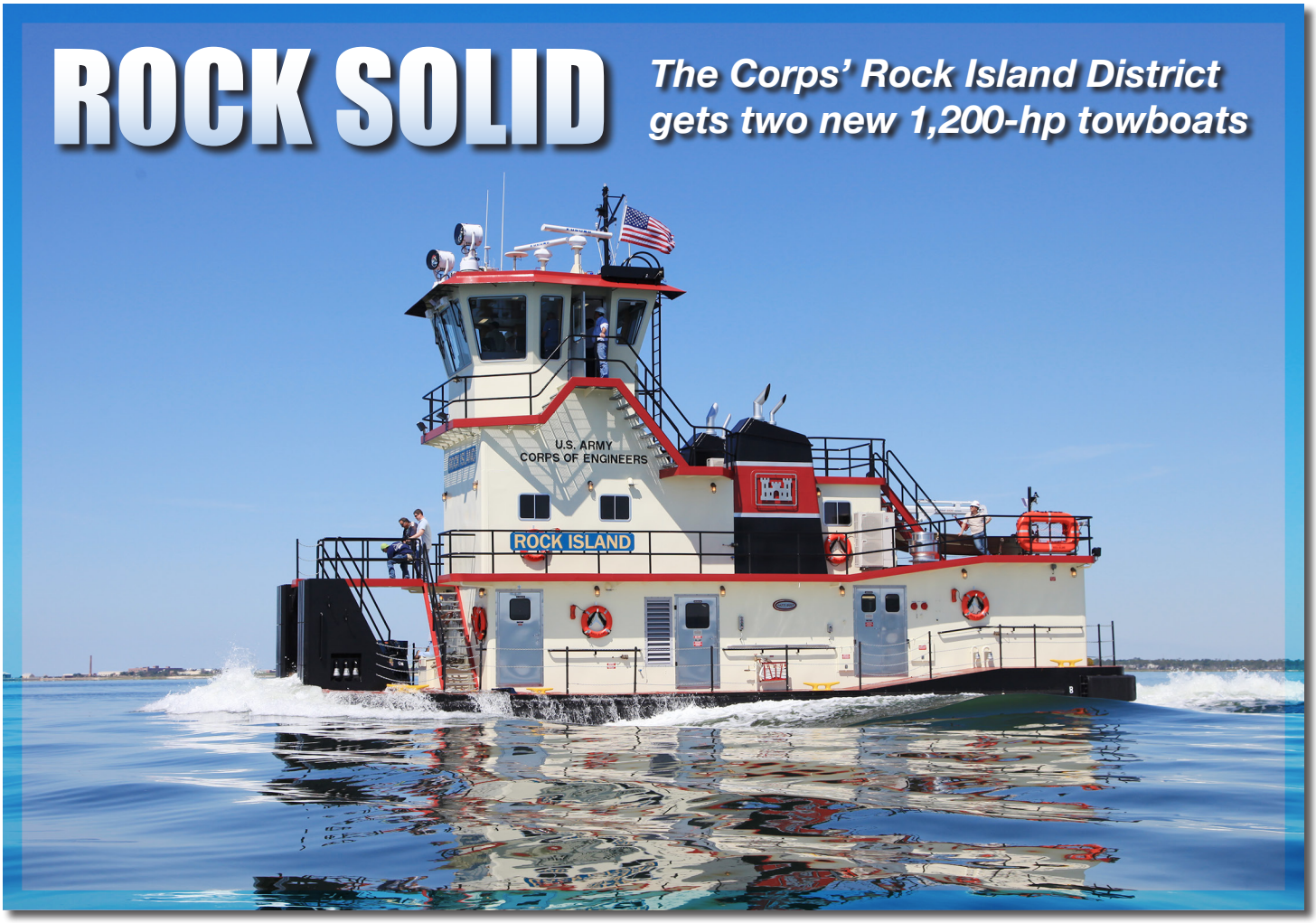
ROCK SOLID

The Corps' Rock Island District gets two new 1,200-hp towboats



By Ken Hocke, Senior Editor

About 40 years ago, the Army Corps of Engineers Rock Island (III.) District took delivery of the towboat *Rock Island.* About four years later, a sistership, the *Clinton*, was delivered.

With the recent delivery of the *Rock Island*— a 65'×24'×8'6", 1,200-hp towboat built at **Patti Marine Enterprises**, Pensacola, FL — followed by the delivery later this year of a sistership, the *Clinton*, it seems like déjà vu.

"The original *Rock Island* and *Clinton* have come to the end of their expected lives," said Andrew Barnett, crane operator supervisor, Structures Maintenance Unit, with the Corps' Mississippi River Project Office. "It's getting harder to find parts, and the hull steel is getting thin."

New construction projects like the *Rock Island* and *Clinton* are hatched at the Corps Marine Design Center in Philadelphia, where naval architects put together a design package that eventually goes out to bid.

Patti Marine, the winning bidder, has a long history with the Corps of Engineers.

"Given our past performance, I think it definitely helped in the awarding of the contract," said Ashley Stone, Patti's project manager.

"Certainly past performance is always a criteria," said Tim Keyser, senior naval architect at the Marine Design Center. "We know the quality of Patti's work is first class."

For more information: Patti Marine Enterprises, Inc. • 306 South Pinewood Lane • Pensacola, FL 32507 • (850) 453-1282 • ashley@pattimarine.com

RESPONSIBILITIES

Both towboats will work in the same Corps district but will handle different duties. "The *Rock Island* will be a tender boat for the Structures Maintenance Unit and the *Clinton* will go to the Project Maintenance Unit," said Barnett.

The Rock Island District oversees 314 miles of the Mississippi River and 269 miles of the Illinois Waterway and their tributaries. The district's responsibilities include navigation, flood control, emergency management, ecosystem restoration and regulation, recreation, and water supply.

For help with the details, the Marine Design Center and Patti turned to **Sterling Marine Ltd**. in Gulf Breeze, FL. "They did the detail design and developed all the machinery drawings and put everything together," said Keyser.

"The Corps comes out with a package that tells you exactly what it's looking for," said naval architect Travis Carver, Sterling's founder.

Carver said the Corps already had a design and some proposed changes to go along with it. Sterling took the information and gave them the final drawing details. "It's more than you would usually provide for a commercial vessel, more drawings and calculations to meet ABS criteria. Then ABS and the Corps review the plans and sign off on them. From a construction timeline, it's a slightly longer process."

One part of the design that impressed Stone was the use of five individual ballast tanks. "The design is not really original," he said, "but the use of five individual ballast tanks to get the vessel trim and the double bottoms for the fuel tanks is. This is not just a vanilla river tug."

DOUBLE UP

Keyser said environmental safety and fatigue reduction were two important areas when it came to the design.

The bottoms and sides of the fuel-oil tanks are all double hulled. "It's on the side shell," said Keyser. "The idea, environmentally, is to keep everything inside the shell."

"With the double bottoms for the individual tanks, [the construction process] was a little more time consuming," said Stone. "But as far as additional steel costs were concerned, it was minimum to the overall process."

Keyser said operator fatigue is a big factor in many marine accidents and noise increases fatigue. "We wanted to apply the ABS habitability guide to the boats noise level," he said. "We wanted to get to the guide's sound level criteria."

To reach the design team's noise-dampening goal, floating floors were used in select areas such as in the galley above the engine room, where the twin 600-hp **Caterpillar** C18B engines are located. **Marine Interior Systems** installed an **Isolamin** floating floor system. "The noise results came out really well," said Keyser. "We were very satisfied with the level of detail and quality."

"We added the floating floors to help with the dampening process," said Stone. "It's worked perfectly."

In the wheelhouse, Stone said a **FLIR** thermal imaging infrared camera system was installed. "This is the first Corps boat to have a FLIR."

M/V "ROCK ISLAND" - Hull 772 and M/V "CLINTON" - Hull 774

Construction and Equipment Details

The new Corps of Engineers towboat *Rock Island II* during hard-over maneuvers.

Twin 600-hp Cat engines power each of the new towboats.

Builder:	**Patti Marine Enterprises, Inc.**
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Designer:	**U.S. Army Corps of Engineers – Marine Design Center**
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	Sterling Marine, Ltd.
Attn:	Travis Carver, Naval Architect 1150 Shady Lane • Gulf Breeze, FL 32563
Ph:	(850) 916-0002
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e-mail:	SterlingMarine@aol.com
Owners:	**U.S. Army Corps of Engineers – Rock Island District**
Mission:	Inland River Towboat
Length:	65'-0"
Beam:	24'-0"
Depth:	8'-6" (@ Midship)
Draft:	6'-5" (Full Load)
Main Engine:	(2) CAT C18B, 600 HP @ 1,800 RPM diesel engines
Gears:	(2) Twin Disc MGX-516, 4.0:1 ratio
Props:	(2) Michigan Wheel, 54" diameter, (5)-blade, Progressive/ Variable Pitch Design, CF-3 stainless steel
Controls:	Twin Disc EC300
Gen-sets:	(2) CAT C4.4, 76kW @ 1,800 RPM
Hydraulic Steering:	Sentinel Control Technologies
Crane:	(1) Stellar 5520, 10-ft, 25,000 lbs.
Barge Winches:	(2) Wintech mdl. 311-RC, 5 HP, 40-ton
Capstans:	None
Hull Construction:	Steel
Crew Quarters:	6
Capacities:	Fuel Oil = 9,300 gal. Hyd Oil = None Lube Oil = 350 gal. Gear Oil = None Waste Oil = 350 gal. Oily Water = 250 gal. Potable Wtr = 1,600 gal. Grey Water = 2,200 gal. Sewage = 300 gal.
Electronics:	E & R Marine Electronics (Furuno)
Class:	ABS Class A1 Towing Service AMS Machinery USCG, Subchapter-C Uninspected Towing Vessel
Tonnage:	n/a

Completion Dates:
June 2011 (Hull 772)
November 2011 (Hull 774)

Homeport:
Pleasant Valley, IA