ropecordNEWS

THE CORDAGE INSTITUTE

Dedicated to the Advancement of Rope and Cordage Products

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In This Issue

Coast Guard Awards Six More FRCs to Bollinger

Workboat Staff

Lockport, LA based Bollinger Shipyards announced that the Coast Guard has exercised a $255 million contract option for six additional Sentinel-class fast response cutters (FRC). This option brings the total number of FRCs under contract with Bollinger to 30, with a current contract value of $1.4 billion. The FRCs acquired under this contract option are scheduled to be delivered to the Coast Guard in 2017 and will be homeported at various bases around the US.

"We are extremely pleased that the Coast Guard has awarded six additional fast response cutters to our current contract. This award reflects the continued confidence that the Coast Guard has in our vessels," said Chris Bollinger, President of Bollinger Shipyards.

On June 25, Bollinger Shipyards delivered the *USCGC Raymond Evans*, the 10th FRC to the Coast Guard. The Coast Guard is scheduled to commission the vessel in Key West, FL. FRCs now operating in the southeast US, the Bahamas, and the Caribbean have already had a major affect on Coast Guard operations. Recent interdictions by the FRCs Paul Clark and Charles Sexton resulted in the seizure of thousands of pounds of marijuana and cocaine. In addition, FRCs in south Florida have interdicted hundreds of illegal migrants attempting to reach our shores and saved over 100 lives. The Coast Guard says the FRCs are operational "game changers" for the Coast Guard.

The Sentinel-class is replacing the Coast Guard's venerable Island-class 110' patrol boat. The FRC uses a proven, in-service parent craft design based on the Damen Stan Patrol 4708. It can operate at speeds over 28 knots and is

armed with one stabilized, remotely-operated 25mm chain gun, and four crew-served .50 caliber machine guns. Other requirements include the ability to perform independently for a minimum of five days at sea, and capable of underway operations for a minimum of 2,500 hours per year.

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Foss Tug to Tow Aircraft Carrier to Texas for Dismantling

By: Dale K. DuPont, Workboat.com

The oceangoing tug *Corbin Foss* is preparing for an especially challenging journey.

The 150'x40'x20' vessel, on its first trip through the Straits of Magellan, will tow the *USS Constellation* 16,000 nautical miles from Bremerton, WA, to breakers in Brownsville, TX.

Powered by two ALCO 16-251F diesels that produce 4,100 hp each at 900 rpm, the tug will make the140-day trip moving the 61,000-dwt tow at about 6 knots, said Drew Arenth, Foss Maritime's manager of business development and planning. A sister tug, the Lauren Foss, earlier this year brought the aircraft carrier *USS Forrestal* from Philadelphia to All Star Metals in Brownsville.

Arenth said the Constellation trip was "an exciting opportunity for us" and perceived as an honor especially since a lot of Foss' crews have military backgrounds. The Kitty Hawk-class aircraft carrier was commissioned in 1961 and decommissioned in 2003.

"*Corbin Foss*' eight-person crew will be switched out at Punta Arenas, Chile, and after delivering the ship, the tug will stay and work in the Gulf for about six months," said Arenth, who spent a few days walking through the carrier and getting the rigging set up. In addition to the rigging, another key part of the preparation is fueling. So they are working closely with contacts in South America to see what fueling strategy will work best along the route.

The Navy awarded the recycling contract to International Shipbreaking Ltd., of Brownsville, which will be paid $3 million for the work. "The Navy continues to own the ship during the dismantling process," the service said. "The contractor takes ownership of the scrap metal as it is produced, and sells the scrap to offset its cost of operations."

Bob Berry, vice president of International Shipbreaking, said the Constellation job will take about two years and yield about 60,000 tons of material. "The majority of our ferrous scrap goes into the US market," he said, "but, there's really no telling where it's going to go."

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New Members

The Cordage Institute is happy to welcome the following members, who have joined since the last issue of ***ropecordNEWS***.

HOLLOWAY HOUSTON, INC.
Reseller Member
Houston, Texas
Contact: George Watson, Manager, Technical Services
Phone: (713) 674-5631
Email: gmwatson@hollowayhouston.com

Holloway Houston was founded in 1960 and is located in Houston, Texas. HHI offers a variety of products and testing services including slings, wire rope, fiber rope, proof load and break testing, and cyclic testing.
Their website is www.hhilifting.com.

INNEGRA TECHNOLOGIES LLC
Manufacturer Member
Greenville, South Carolina
Contact: Mark Smith, President
Phone: (864) 631-2800
Email: sales@innegratech.com

Innegra Technologies is located in Greenville, South Carolina and offers a variety of ropes, as well as two specialty fibers. Their website is www.innegratech.com.

WESTERN RIBBONS LTD.
Manufacturer Member
Calgary, Alberta
Contact: Pearl Sztain, President
Phone: (403) 571-2626
Email: office@westernribbons.com

Western Ribbons has been manufacturing products in Alberta, Canada since 1993, and offers tie downs, slings, double tubulars, single tubulars, polypro straps, and nylon straps. Their website is www.westernribbons.com.

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Stephanie L. Kwolek, Inventor of Kevlar, is Dead at 90

By: Jeremy Pearce, New York Times

Stephanie L. Kwolek, a DuPont chemist who invented the technology behind Kevlar, a virtually bulletproof fiber that has saved thousands of lives, died on Wednesday, June 18, 2014 in Wilmington, DE. She was 90.

The CEO of DuPont, Ellen Kullman, announced the death, calling Ms. Kwolek, who spent 15 years in the laboratory without a promotion before her breakthrough, "a true pioneer for women in science."

Kevlar is probably best known for use in body armor, particularly bulletproof vests. A DuPont spokeswoman estimated that since the 1970s, 3,000 police officers have been saved from bullet wounds through the use of equipment reinforced with Kevlar, which is far stronger and lighter than steel.

Stephanie L. Kwolek in 2007 wearing gloves made with Kevlar. Credit The News Journal/ Jennifer Corbet, via Associated Press

The product has found its way into all corners of the modern world. It has been used in car tires, boots for firefighters, hockey sticks, cut-resistant gloves, fiber-optic cables, fire-resistant mattresses, armored limousines, and even canoes. It is used in building materials, making them bomb-resistant, and in safe rooms, protecting occupants during hurricanes.

Its popularity has proved a windfall for DuPont. Kevlar has generated several billion dollars in revenue for the company. Ms. Kwolek did not directly benefit from it financially; she signed over patent royalties to DuPont.

The research that led to Kevlar began in the early 1960s, when women were a rarity in industrial chemistry. Ms. Kwolek was part of a team at DuPont's research laboratory in Wilmington that was trying to develop a lightweight fiber that would be strong enough to replace the steel used in radial tires.

The work involved manipulating strings of carbon-based molecules to produce larger molecules known as polymers. At one point, in 1964, Ms. Kwolek was struggling to convert a solid polymer into liquid form and finding the results to be a murky disappointment. Instead of the clear, syrupy mixture she expected, the liquid was thin and opaque.

Ms. Kwolek's peers suggested that the polymer she had concocted would probably not work as a fiber. But Ms. Kwolek persisted. She persuaded another scientist to "spin" the liquid in the laboratory spinneret, a machine used to remove liquid solvent and leave behind fibers.

In "a case of serendipity," as she put it, she discovered that polyamide molecules in the solution, a form of liquid crystal, lined up in parallel and that when the liquid was "cold spun," it produced a fiber of unusual stiffness.

When the fibers were tested in 1965, they were found to be five times as strong as steel of equal weight and resistant to fire. Herbert Blades, Joseph Rivers and others at DuPont soon recognized the market potential for a tough, lightweight fabric and began to consider potential uses for the innovation. They have been credited with making it a mass market product.

DuPont says it spent $500 million to develop Kevlar, what *Fortune* magazine once called "a miracle in search of a market." The company initially began developing it for use in tires under the working name "Fiber B" at a pilot plant in Richmond, VA.

Ms. Kwolek later spoke of her uncertainty when testing and retesting the experiment's findings. "It wasn't exactly a 'Eureka!' moment," she recalled in 2007.

She added: "I didn't want to be embarrassed. When I did tell management, they didn't fool around. They immediately assigned a whole group to work on different aspects of the fiber's development."

It took a decade before Kevlar appeared in the form of a vest resistant to bullets fired by handguns. It was made available to police departments in 1975. Later versions increased the layers of Kevlar fabric.

Since the 1990s, the vests have been further reinforced with ceramic plates to withstand rifle fire. Military helmets have been lined with up to 24 layers to make them less vulnerable to penetration by shrapnel.

Stephanie Louise Kwolek was born on July 31, 1923, in New Kensington, PA, near Pittsburgh. In 1946, she earned an undergraduate degree in chemistry from what is now Carnegie Mellon University in Pittsburgh.

The daughter of working-class Polish immigrants, she considered becoming a physician but could not afford the tuition to medical school. After graduating from college, she joined DuPont's textile chemistry facility in Buffalo, before moving to the Wilmington lab in 1950.

Ms. Kwolek was the recipient of many other honors, including the Lemelson-M.I.T. Lifetime Achievement Award, which recognizes the nation's most talented inventors and innovators. In 1995, she was inducted into the National Inventors Hall of Fame in North Canton, OH. In 2003, she was inducted into the National Women's Hall of Fame in Seneca Falls, NY.

She was also inducted into the Plastics Hall of Fame at the National Plastics Center and Museum in Leominster, MA, in 2004. At the museum, which closed in 2008, her plaque hung alongside those of innovators like Earl Tupper, the creator of Tupperware.

After retirement, Ms. Kwolek tutored high school students in chemistry, paying particular attention to grooming young women for work in the sciences.

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Submarine North Dakota Completes First Voyage

By: Eric Haun, Marinelink.com

The US's newest and most advanced nuclear-powered attack submarine, *North Dakota* (SSN-784), returned to the General Dynamics Electric Boat shipyard following the successful completion of its first voyage in open seas, called alpha sea trials. *North Dakota* is the 11th ship of the Virginia-class, the most capable class of attack submarines ever built. Electric Boat is a wholly owned subsidiary of General Dynamics (GD).

North Dakota's alpha sea trials included a range of submarine and propulsion-plant operations, submerging for the first time, and high-speed runs on and below the surface to demonstrate that the ship's propulsion plant is fully mission-capable.

The sea trials were directed by US Navy Adm. John M. Richardson, Director – Naval Nuclear Propulsion. Also participating in the sea trials were Vice Adm. William H. Hilarides, Commander – Naval Sea Systems Command; Rear Adm. David C. Johnson, Program Executive Officer – Submarines; Rear Adm. Kenneth Perry, Commander – Submarine Group Two; Capt. Darlene Grasdock, Supervisor of Shipbuilding in Groton; and Jeffrey S. Geiger, President of Electric Boat. *North Dakota* is commanded by Capt. Douglas Gordon.

"The crew and shipbuilders worked together as one unit to take this submarine to sea and put it through its paces," said Electric Boat President Jeffrey Geiger. "It was an outstanding effort by everyone involved, and demonstrates the commitment of the Navy and industry team to sustain the success of the Virginia-class submarine program. I appreciate the contributions made by the Navy personnel, shipbuilders, and suppliers who made it happen."

Electric Boat and its construction teammate, Newport News Shipbuilding, already have delivered 10 Virginia-class submarines to the Navy: *USS Virginia* (SSN-774), *USS Texas* (SSN-775), *USS Hawaii* (SSN-776), *USS North Carolina* (SSN-777), *USS New Hampshire* (SSN-778), *USS New Mexico* (SSN-779), *USS Missouri* (SSN-780), *USS California* (SSN-781), *USS Mississippi* (SSN-782), and *USS Minnesota* (SSN-783). Eight other submarines of the class are under construction.

In May, the US Navy underscored its commitment to an advanced and adaptable submarine force by awarding Electric Boat a contract valued at $17.6 billion for the construction of 10 additional Virginia-class submarines.

Virginia-class submarines displace 7,800 tons, with a hull length of 377' and a diameter of 34'. They are capable of speeds in excess of 25 knots and can dive to a depth greater than 800', while carrying Mark 48 advanced capability torpedoes and Tomahawk land-attack missiles.

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Do You Recognize These Cordage Institute Members?

This sketch was done by Rollin Stirman, with Miami Cordage, during a recent Cordage Institute Technical Meeting. Can you spot the Cordage Institute members featured?

Answers, along with more of Rollin's beautiful work can be found here.

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Metal Shark Opens New Louisiana Shipyard

Workboat Staff

Jeanerette, LA based aluminum boat manufacturer Metal Shark has begun operations at a new shipyard facility in Franklin, LA.

In January, Metal Shark acquired a 25-acre waterfront tract situated on the Charenton Bypass Canal in Franklin, LA, and announced plans to develop the new property into a facility to support its planned aluminum and steel shipbuilding efforts for vessels up to 250'. Six months later, the new facility is operational and production of its new Endurance-class catamarans is underway.

The Franklin shipyard features over 60,000 sq. ft. of workspace, a newly-constructed assembly building with overhead cranes, large-capacity marine travelift, and deepwater access to the Gulf of Mexico.

Construction at the site is ongoing and the company plans to continue its expansion well beyond this first phase. "We're booked well into 2015 with new 45', 55', and 75' pilot boats, multiuse port utility boats, and dive support vessels. We've been working around the clock to bring our new Franklin yard online," Metal Shark President Christopher Allard said in a statement.

The first ship to take shape at the new yard is a 75'x22' aluminum catamaran-hulled Endurance-class vessel built for an LA port operator. The multiuse vessel has been designed to serve as a command and control center, and will be fitted with a 5,000-gpm fire pump and multiple RF-controlled monitors. Metal Shark will also equip the vessel with a chemical, biological, radiological, nuclear, and high-yield explosive (CBRNE) protection system for crew safety and mission readiness in disaster response situations.

Work will begin soon on a second 75' and two 55' versions of the company's Defiant-class monohull pilot boats as operations are ramped up at the new facility.

The launch of the new yard represents a significant expansion for Metal Shark, a company best known for its welded aluminum center consoles, and trailerable pilothouse vessels built for a wide range of law enforcement and military operators. Among its more notable contracts, the company has produced seven classes of vessels for the US Coast Guard and nine classes of vessels for the Navy.

To spearhead its efforts in commercial and offshore markets, the company recently hired marine industry veteran Carl Wegener, previously of Austal USA and Kvichack Marine, as its director of commercial sales. Wegener will be responsible for developing the company's relationships with operators in the passenger ferry, fast crew, utility, entertainment, and pilot boat markets.

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Tug Crew Assists Disabled Vessel Near Kotzebue, Alaska

Workboat Staff

The Coast Guard, Alaska State Troopers, local search and rescue, and the crew of the tug Naniq responded to a disabled vessel near Kotzebue, AK, on Wednesday, July 9, 2014.

The Naniq crew provided gas and a battery to the disabled vessel and escorted them back to Kotzebue.

Alaska State Troopers contacted Coast Guard 17th District command center watchstanders to request aerial assistance to help locate three women and a child aboard a disabled 24' aluminum Harbercraft. The women were traveling from Buckland to Kotzebue when the weather turned bad and they attempted to return to Buckland but had run out of gas.

A Coast Guard Air Station Kodiak MH-60 Jayhawk helicopter crew launched and were conducting a search of the area when Alaska State Troopers reported the crew of the tug Naniq had located the missing boaters.

The Jayhawk helicopter crew rendezvoused with the crew of the tug Naniq who reported the vessel had lost power and run out of gas.

The helicopter crew remained on the scene while the Naniq crew assisted the disabled boaters.

"This case illustrates how invaluable good Samaritans and our local and state agencies are to the Coast Guard," said Adam De Rocher, a watchstander at Coast Guard 17th District command center. "Without our partners, we wouldn't have been able to locate and provide assistance to the mariners in their time of need."

Weather at the time of the incident was reported as 3- to 5-foot seas and 17 mph winds.

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Important Events

International Workboat Show
December 3 - 5, 2014
Morial Convention Center
New Orleans, Louisiana
www.workboatshow.com

Cordage Institute Technical Meeting
January 27 - 28, 2015
The Westin Atlanta Airport
Atlanta, GA
www.cordageinstitute.com/new/events.asp

Associated Wire Rope Fabricators Spring 2015 General Meeting
April 12 - 15, 2015
Hyatt Regency
Indian Wells, CA
www.awrf.org

Web Sling and Tie Down 2015 Annual Meeting
May 5 - 7, 2015
Marriott Pinnacle Downtown
Vancouver, BC Canada
www.wstda.com

OCEANS 2014 MTS/IEEE
May 18 - 21, 2015
Genova, Italy
www.oceans15mtsieeegenova.org

Cordage Institute Joint Conference with EUROCORD
May 31 - June 3, 2015
Loews Atlanta Hotel
Atlanta, GA
www.cordageinstitute.com/new/events.asp

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ropecordNEWS
Editor: Dave Richards, Technical Director

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Members are encouraged to contribute articles and items of interest by emailing them to info@cordageinstitute.com. Rates for advertising are available from the Institute.

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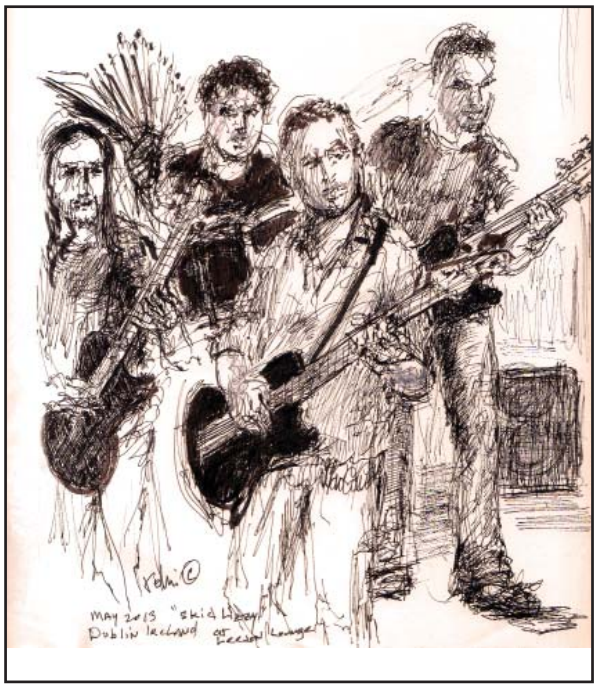
Do You Recognize These Cordage Institute Members?

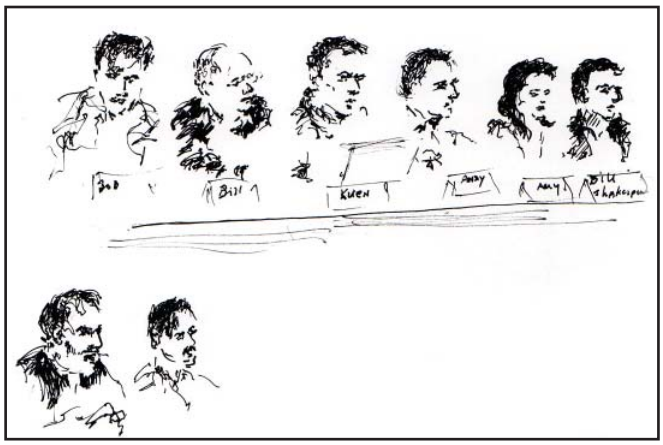
***Guess those Members (from left to right)**: Beth Huntley with Whitehill Mfg. Corp. , Loui McCurley with Pigeon Mountain Industries, Knut Buschmann with Unirope Limited, and Koen Van Goethem with I-Coats NV*

The Art of Rollin Stirman

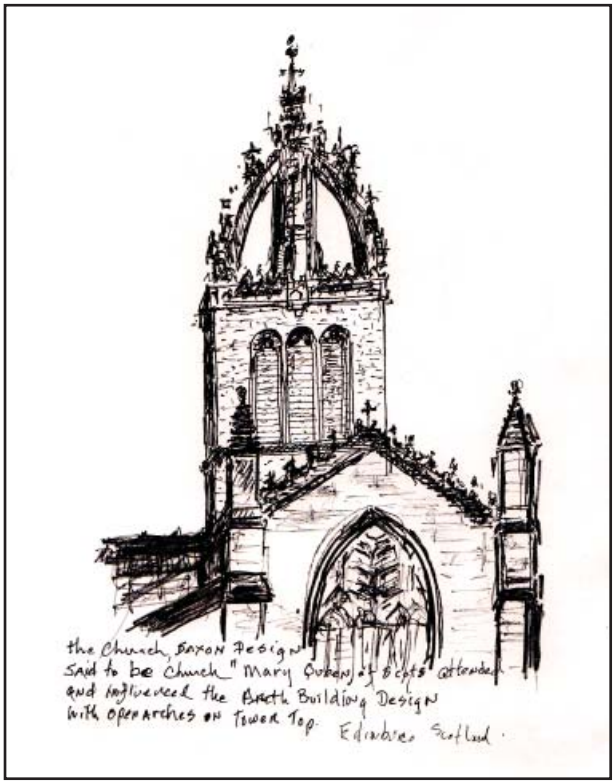
Over the past 40 years, Rollin Stirman of Miami Cordage has been documenting his life through drawings, and on August 15, 2014, he finally showed these smaller pieces of art to the world. You most likely have seen Rollin drawing during a Cordage Institute meeting, and there is a good chance that he has, in fact, drawn you. These are just a few examples of Rollin's work. Enjoy!




Rollin 1/21/2011
Walter Woodenhole
Richard Plymcraft
Dave CI
Pete Executive Director CI
Stewart Bloom Kuroda
John Long Process Engineering


Bill
Karen
Mary
Mary
Bill Shakespeare


inn Dublin Ireland
Cordage Convention
Late in the
Bar at th
Burlington Hotel
Meeting
Lute
Coats
Bob Thompson
Bill Bronfield - DSM
Jon Yates
Meeting


the Church, Saxon Design
said to be Church" Mary Queen of Scots attended
and influenced the Booth Building Design
with Open Arches on Tower Top.
Edinburgh Scotland