

More Power ***for San Francisco Bay***



MARITIME





(Top) Baydelta's design calls for large windows forward and aft to allow for better visibility from the wheelhouse. Photo by Jennifer Rose. (Below) The Port of Everett's bollard was tested by Billie's 94 tons of pull. Photo by Chris Phillips. Cover photo by Jennifer Rose.

In late April a shiny new tug sailed into San Francisco Bay, flying the colors of BayDelta Maritime. The *Delta Billie*, a 100-foot, azimuthing stern drive (ASD) harbor tug, was built by Freeland, Washington-based Nichols Bros. Boatbuilders. The powerful new tug, to be christened in San Francisco later this month, is the third in a series built by Nichols for the San Francisco-based company, but only the first to wear the company's familiar black and yellow on her superstructure. Instead of going to work in the Bay Area, the first tug of the series, *Valor*, delivered in July of 2007, was painted red and chartered to Crowley Marine Services for operation in Puget Sound. The second was also painted Crowley red, modified with a strengthened ice belt and heated decks, and sent to Alaska. Third time's a charm, and the result is one of the most powerful tugboats to grace the waters of San Francisco Bay. During bollard



(Top) Billie's clean and spacious engine room has capacity for firefighting equipment in the future, if necessary. (Bottom Left) Stephan Hatvany, left, dials in the Markey towing winch while Baydelta captain Orrin Favro calls out engine revolutions. (Bottom Right) Baydelta General Manager Fred Henning takes notes as *Billie* tests her new Markey winch. Captain Henning was at the helm for the official bollard pull test for ABS the following day. Photos by Chris Phillips.

pull testing, which was performed on a crisp spring day in Everett, Washington, the boat performed admirably, delivering 93.68 tons of bollard astern, and 93.71 tons ahead.

Bay & Delta towing was founded in 1982, and purchased by its present owners in 1993, during a difficult period in the San Francisco ship assist market. Competition was fierce, with several companies, large and small, already competing for work. While many felt there wasn't room for another tug company to operate profitably, the new owners, Steve Ware, Ron Charlesworth and Jack Going, had recently retired as San Francisco Bar Pilots and knew the market. They believed there was a place for their services. Sixteen years later, the company has made a name for itself, and boasts a fleet of eight, soon to be nine modern ASD tugs, five of which are chartered to competitors. The company's two boats currently operating in the Bay Area, *Delta Linda* and *Delta Deanna*, are 105-foot boats built at MARCO shipyard, in Seattle, in 1999. At 100 feet long by 40 feet wide, *Delta Billie*, and her soon-to-be completed sister *Delta Cathryn*, are five feet shorter, but beamier by four feet.

Another difference is power. While the two current boats are very capable, with 4,400 hp driving Ulstein ASD units and providing a respectable 70 tons of bollard pull, *Billie* ups the ante. Powered by a pair of Caterpillar 3516C main engines, each producing 3,400 hp at 1,800 RPM, turning Rolls-Royce US 255 azimuthing stern drives, the new vessel produces a measured bollard pull astern of 94.75 tons. The sheer power of the new boat was enough to cause a length of synthetic line to part during recent bollard pull testing, and approached the limit of the capacity of Port of Everett Washington's shoreside bollard.

All four boats have the same or similar equipment in the engine room.



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“The engine room layouts are all the same,” says Port Engineer Peter Zwart. “It makes it easier for the engineers to work on the different boats and get used to the same equipment.”

Jensen’s lead naval architect Eric Blumhagen designed the boats, starting with a fresh sheet of paper. “BayDelta approached Nichols Bros. to build the boats,” he says, “and Nichols came to us for the design.”

The boat is a clean sheet design, says Blumhagen- one of the company’s first to include the large skeg adapted for ship assist and escort work.

The earlier boats have been well received by crew and pilots alike, Blumhagen says, but notes there is a learning curve for the powerful new boats. When the *Valor* first went to work in Seattle the tug operator’s office, which monitored the radio, would hear a ship’s pilot say, ‘*Valor*, full ahead...’ followed quickly by, ‘Whoa, *Valor*, whoa!’

Even with all the power *Delta Billie* brings to the table, her engine room is

large, clean and unencumbered, unlike engine rooms on similar vessels. One reason for this is the possibility, in the future, to add firefighting capability. “There’s space for two 700 hp diesels which would be required to run the fire pumps for a FiFi 1 class system,” says Blumhagen.

Another explanation for the large space is the construction method used by the Nichols yard. Some machinery was installed in the bottom of the house before the house was attached to the hull, eliminating the need to run machinery through the tight spaces created once the two parts are joined. “For example, they hung all of the mufflers before house was installed,” says Blumhagen.

Strength is only part of the equation. An effective modern tugboat needs to be able to apply force effectively and with finesse. This is where the Markey Machinery forward escort winch comes in. The DEPCF-52, 75 hp electric render-recover hawser unit was custom designed by Markey for

ship assist and tanker escort service, and was installed on the two previous Nichols-built boats. With a capacity of up to 750 feet of 10 inch synthetic line, the winch features an automatic level wind, 75 horsepower electric drive motor, and hands free Render-Recover controls. According to Markey, the Render-Recover controls enable the tug captain to adjust the set point for automatic cable tensioning operations to full rated line speed (378 feet per minute) and load (46,227 lbs.). A band brake applies 600,000 lbs of holding power to the winch’s single drum.

Another feature of the winch is the company’s advanced winch system software. The company says the new software, which is fully integrated into the winch drive and render recover control system, enables drive and render recover control system status to be displayed to the operator during winch operations. Operator selected drive system alarms can be date-time stamped, logged to file, and instantly retrieved via download to a flash type

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Delta Billie flies the US and Baydelta flags as she prepares to leave Puget Sound for the San Francisco Bay area. Photo by Jennifer Rose.

**DELTA BILLIE
SPECIFICATIONS**

Length: 100'
 Beam: 40'
 Draft: 17'
 Bollard Pull: 94 Tons
 Speed: 14 Knots

CAPACITIES

Fuel Oil: 70,000 gallons
 Water: 8,000 gallons
 Sewage: 1,400 gallons

**MACHINERY
& EQUIPMENT**

Main Engines:
 Two (2) – Caterpillar
 3,386 HP @1,800 RPM
 Z-Drives:
 Two (2) – Rolls-Royce
 US255 360 degree
 Azimuth Thruster
 Gensets:
 Two (2) – Caterpillar
 215 kW@1,800 rpm;
 One (1) – Caterpillar
 50 kW @1,800 rpm

drive plugged into the panel-mounted USB port. The company claims the software puts diagnostic and corrective winch tools in the hands of the operator.

The aft end of the *Billie* is equipped with a JonRie Series 525 towing winch with a 55-ton line pull at 39 feet per minute. It carries 2,500 feet of 2.5-inch wire rope. An independent drive level wind can be operated from the wheelhouse or deck location.

The roomy *Delta Billie* wheelhouse has been designed to offer enhanced visibility to the skipper with large windows that wrap all the way around the bridge. “The bridge layout is very open, and gives a great view,” says Peter Zwart. The conventional aft-mounted door has been eliminated in favor of doors on the port and starboard sides, offering access to elevated bridge wings. In its place is a wall of glass that offers the skipper an unobstructed



Congratulations Baydelta!

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(Left) JonRie InterTech provides load cell measurements for the aft JonRie towing winch as well as the forward Markey electric hawser winch. (Below) Bobby Davis, of JonRie InterTech, checks the readout of the wireless Water Weights load cell monitor. Photos by Chris Philips.



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From the helm, the skipper has the controllers for the Rolls-Royce z-drives at his fingertips, as well as all the most modern communication and navigation equipment, designed to work as a package. The bridge systems integration was provided by Mackay Marine Communications, and includes all of the various electronics necessary to meet both USCG and any other class or vessel type requirements, as well as the tools required to compete in the 21st century ship assist market.

“The vessel owner usually specifies that the equipment for a new build be uniform with or even mirror the existing vessels in the fleet,” says Phil L’Esperance, West Coast sales manager for Mackay Marine. “The uniformity makes it easier for crew members to move between vessels and allows familiarity with the equipment.”

The boat’s navigation and communication equipment includes, AIS, radar, depth sounder, chart plotter, DGPS, SSB, Loudhailer, VHF, autopilot and gyrocompass systems. “It’s a pretty straightforward package,” says L’Esperance, “customized based on where the vessel will operate.”

Mackay has been providing maritime communications since 1884, and offers complete navigation and communication bridge packages, including all marine satellite communication systems, for both existing ships as well as new construction programs.

Accommodations include three twin crew cabins and two single cabins for the captain and chief engineer.

A pair of 215 kW Caterpillar gensets provides electrical power, while a third, 50 kW Cat serves for lighter harbor duty or as an emergency unit. A fire monitor mounted on the aft upper deck is capable of providing 900 gallons per minute in an emergency. Rounding out the deck equipment are Smith Berger tow pins, and a Shibata fendering system, provided by Schuyler Rubber.

Delta Billie is already hard at work in the Bay Area (“She’s really pulling her weight,” says Peter Zwart), and her sister, *Delta Cathryn*, is due to join her in July. An option remains for a fifth boat in the series. “We have the drive units and engines reserved,” says Captain Fred Henning, BayDelta General Manager.”

Better warn the pilots. **PMM**



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Pacific Maritime Magazine congratulates Baydelta and the completion of the *Delta Billie*. May there be many more to follow!

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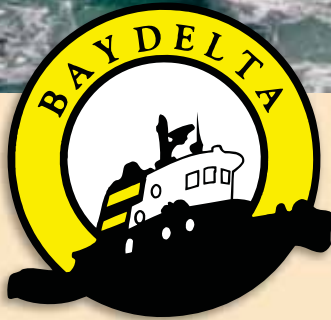
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Baydelta Maritime Welcomes the *Delta Billie* and the *Delta Cathryn*



Delta Billie



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Baydelta Maritime, San Francisco's premier tugboat company is proud to welcome its fifth and sixth tugs to their Bay Area fleet. Serving the maritime industry from Pier 15 on the San Francisco waterfront, Baydelta is committed to providing its customers, the maritime industry and the Bay Area community with the best available technology in the industry.

Delta Billie (launched March 2009)
and *Delta Cathryn* (due July 2009)

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- ASD Drive
- 6,800 Horse Power

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