Containership Goes Green with Marinfloc

On July 22, the Oakland, Calif. based Matson Navigation Company christened the CV 2500 containership, MV Maunalei. The Maunalei was christened by Millie Akaka, wife of Senator Daniel Akaka (D-Hawaii), at a ceremony held at Aker Philadelphia Shipyard. The 681-ft. Maunalei, or mountain flower in Hawaiian, is the final in a four-ship series built at the Philadelphia yard. The Maunalei completes Matson's $500m fleet modernization and replacement strategy, following the Manukai launched in 2003, the Maunawili in 2004, and the Manulani in 2005.

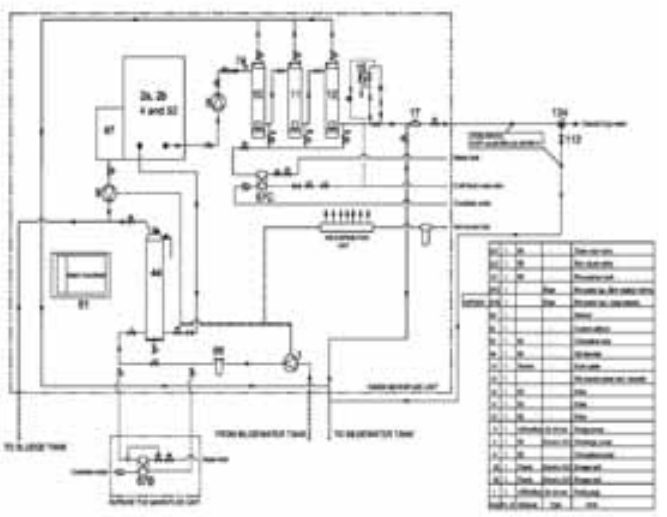
"Between 1983 and 2002 Matson had only one new ship constructed, the MV R. J. Pfeiffer, in 1992. In only four years, Matson has introduced four new ships to its fleet, an achievement that's truly historic. In 2002, the average age of the Matson fleet was 25 years. Today the age is a more youthful 14 years," A&B and Matson Chairman Allen Doane said.

Designed to meet Hawaii's current and future market requirements, the Maunalei can hold 2,500 20-ft. containers and cruise at a maximum speed of 23 knots. It is in service in Matson's Hawaii-Guam-China route alongside the other Aker-built containerships. Matson initiated the contract for the containership series in 2002 for two ships for $220m. In 2005, the second contract followed for two more ships at $315m. As Aker Philadelphia Shipyard's first customer and first repeat customer, Matson helped re-establish the shipbuilding presence in the Philadelphia region, once home to the Philadelphia Naval Shipyard. The Matson series was part of an overall plan by Aker Kvaerner Yards, the Philadelphia Shipyard Development Corporation (PSDC), the Delaware River Port Authority (DRPA), the Commonwealth of Pennsylvania and the City of Philadelphia to rebuild the shipyard as a viable commercial yard. In 2004, Aker signed a 10 product tanker deal with OSG, further solidifying Philadelphia's shipbuilding revival.

"A second objective in the modernization is the replacement of old technology with new, particularly in engine fuel consumption, where the new vessels are 25 percent or more efficient than the old," said Matson CEO Jim Andrasick. "This comes during a period where oil prices have tripled."

In line with the modernization efforts, the Germanischer Lloyd classed-Maunalei, like the previous three similar containerships, was designed to be fuel efficient. The main propulsion engine, manufactured by MAN B&W, is diesel electric 2-stroke, fully reversible that

Mrs. Millie Akaka, wife of Senator Daniel Akaka, prepares to pull a lever which will trigger the release of the traditional bottle of champagne against the hull of the Maunalei, with Matson President and CEO Jim Andrasick (left) and A&B and Matson Chairman Allen Doane (right) joining her on stage.



Marinfloc EBBWCS Type CD Principle Diagram

produces 21,770 kW of power. The vessel features four MaK diesel generators, capable of producing 4,500 kW of electrical power.

Because the vessel flies the American Flag, every inch of the ship, from the bulbous bow to the rudder, was inspected by the Coast Guard's team of marine inspectors.

As a U.S. Merchant Vessel, the construction of the Maunalei complied with Jones Act.

Going Green

In accordance with emerging pressure on shipowners to run increasingly clean operations, the new series of Matson containerships feature a number of "green ship" features, including the Marinfloc AB Emulsion Breaking Bilge Water Cleaning System (EBBWCS), which is USCG, MED and IMO approved.

This type of system is of particular interest due to a number of high-profile cases of late where shipowners have been tried and convicted for purposely dumping oily water into coastal waters illegally.

The political and legislative environment in the U.S. and around the world have become increasingly punitive on such infractions.

The MEPC Resolution 107 (49) which was adopted by IMO's Marine Environmental Protection Committee in July 2003 and released January 1, 2005, calls for regulation governing the treatment of ships bilge water involving the requirement to treat emulsions. Marinfloc has been developing its technologies in anticipation of such regulations.

The EBBWCS Type CD installed aboard the Maunalei has a constant flow system which is an influent water capacity equal to the discharge water capacity. The bilge water, is drawn by the feed pump from the bilge water holding tank or preferably from a Settling/Primary Tank and — via a strainer — fed into the oil descaler for the separation of free oil. The free oil will automatically be led of to the sludge tank while the remaining, emulsified, bilge water will be led in to the circulation tank. A flocculent will automatically be fed into the emulsified bilge water. A very small amount of service air is fed into the water. A circulation pump mixes the bilge water, flocculent and air. The flocculation process is almost instant, and emulsions are broken in a very short period of time. The mixture of water, flocks and air, is then fed into the expansion tank and sludge chamber where the flocks will be skimmed off by the sludge/drain pump. The almost cleaned water will be fed into the three polishing filter steps, by the discharge pump. Cleaned, effluent bilge water passes out of the filters. However before this water can be pumped over board, it has to be checked by the PPM monitor .

When < 15 PPM the water will, be discharged overboard. If for any reason the PPM value is > 15 (or >5 PPM if set to 5 PPM) the effluent water will be returned to the BWHT or Settling/Primary Tank and the CD unit will go into an alarm position.

The system includes the Marinfloc White Box System (WBS) which is a new direct support for surveillance of discharged bilge water.

The fully automatic white-box system keeps track of discharged water, and automatically reports the results to a new support service at Marinfloc AB.

EBBWCS-information is automatically transmitted together with GPS information via the ship's ordinary e-mail system.

Marinfloc AB then keeps record of the vessels' discharged bilge water, evaluates the results and reports back to the Shipowners or Ship Managers.