CASE STUDY

Price Engineering

Full Control of 52m Flybridge 2-Masted Sailing Megayacht

CHALLENGE

Customer wished to control all aspects of a new 52 meter Flybridge 2-Masted Sailing Megayacht by way of state-of-the-art electro-hydraulic systems. While 52 meters might seem to be large; the actual space available for systems within the engine room and other service areas is actually quite small on a sailboat.

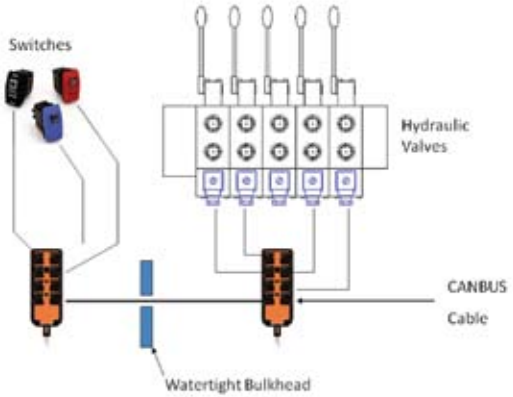
Based upon traditional central system technology (so called Ring Main system) there was insufficient power onboard to insure all function speeds and forces required for operation. Additionally, traditional point to point wiring scheme of the 48 electro-hydraulic proportional valves and dozens of monitors and switches would have been exceedingly cumbersome.

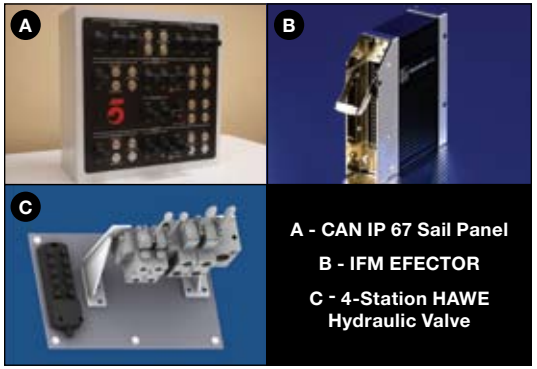

52m Ketch (Design No. 2725)

SOLUTION

Price Engineering pioneered a “Split Ring” hydraulic system whereby the port side of the boat would only be pressurized during a port tack and the starboard side during a starboard tack. Choosing which side is pressurized is automatic. This essentially carved the horsepower requirement in half.

Wiring was reduced to one 4-wire CAN cable threaded throughout the hull. Each valve and/or switch tapped into this cable by way of IP-67 rated CAN Input/Output modules. The CAN network was controlled by way of three IP-67 rated 32 bit PLC’s, one used as a master and two additional PLC’s used as additional I/O points.





BENEFITS

1. Triple redundant hydraulic pumping system with an additional hydraulic power unit all driven by variable frequency drives for “quiet sailing.”
2. CAN control reduced interconnected wiring to just one 4-conductor cable.
3. Proportional control of all shipboard functions provides accuracy, reduced mechanical wear and smooth operation. (sails, thrusters, winches, etc.)
4. Operator efficiency was increased with multiple station control PLUS hand-held radio remote control for several key functions (thrusters, winches, etc.)