The GBS Group

Ship Propulsion System Meters

Established in 2006, The GBS Group is a full-service engineering firm based in Virginia Beach, USA, specializing in full system integrations for multiple customers in the commercial and government maritime, rail and transportation industries. The company's Maritime Division comprises an expert staff of marine, controls & automation, and navigation engineers.

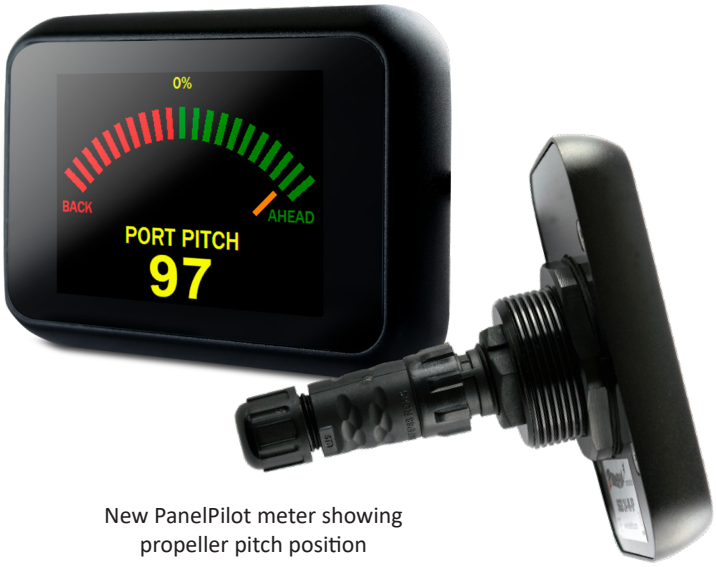
NOAA Fairweather

In 2018 GBS was commissioned by the National Oceanic and Atmospheric Administration (NOAA) to replace the propulsion control system on the NOAA Fairweather, a 231 foot Arctic Classed NOAA Oceanographic Vessel, as the existing propulsion controls had become obsolete and the original equipment manufacturer could no longer support the system with spare parts.

The ship had four independent control stations; in the pilot house, in both bridge wings and in the engine room. New throttle controls were installed at each for the main propulsion engines and the bow thruster, using a PLC to interface them to the existing propulsion systems. Control panels were also overhauled at each station, and the existing meters used to display data from the propulsion system were each replaced with Lascar's waterproof, programmable digital meter - the SGD 24-M-IP420 – to display main engine shaft speeds (port and starboard), main engine propeller pitch position, bow thruster engine speed, and bow thruster propeller pitch position.

GBS chose the Lascar display primarily for its easily-programmable interface, allowing information to be displayed in graphs with user selected colours and labels. Free configuration software supplied with the display allows the creation of a display application from one of 40+ meter styles, and then the addition of various custom elements such as colour, labels, scaling and splash images on power-up. Once complete, the app can be uploaded to the display via USB.

As well as being waterproof to IP67 standard, GBS also liked the display's right angle pigtail cable which made installation inside the control consoles very easy. However, before being installed the company needed some additional modifications to be made.



New PanelPilot meter showing propeller pitch position

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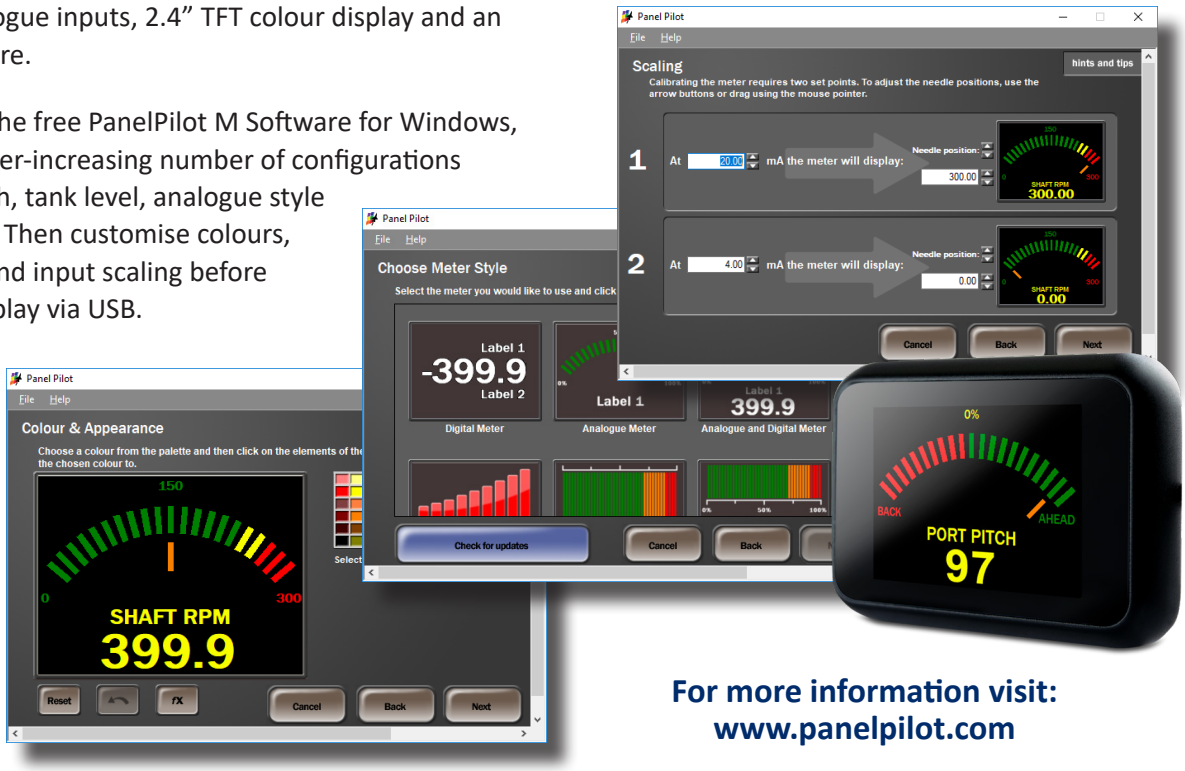
The meters needed to be dimmable in three of the control stations, as this is a critical feature in the maritime world. Working with GBS Group engineers, Lascar designed a custom meter configuration allowing adjustment of one of the analog inputs to control the brightness of the display.

All components of the new propulsion control system were interconnected in the GBS Lab, and Factory Acceptance Testing performed prior to shipping the system to the vessel in Juneau, Alaska, for installation. After 5 weeks, installation and sea trials were completed, and the ship's force was very pleased with the responsiveness, accuracy, and speed of the new system, allowing the NOAA Fairweather to embark on its Arctic Mission.

New PanelPilot meters (top) and dimmer switches (bottom middle) in the Pilot House control panel

PanelPilot SGD 24-M-IP420 is a programmable panel meter with 4-20mA analogue inputs, 2.4" TFT colour display and an IP67 rated enclosure.

Configured using the free PanelPilot M Software for Windows, choose from an ever-increasing number of configurations including bar-graph, tank level, analogue style and trend graphs. Then customise colours, text labels, units and input scaling before uploading to a display via USB.



For more information visit:
www.panelpilot.com

"In addition to the customized dimming function, the most useful feature of the PanelPilot meters is the ability to configure the units for many different parameters and display configurations. This allows only minimal spares to be kept on board which can be installed in many different locations."

Ron Donston, Senior Controls Engineer, The GBS Group,
www.thegbsgroup.us