Raymarine introduces Hydro-Balance™ technology for
Evolution™ autopilots

New adaptive Evolution™ autopilot technology delivers superior autopilot performance for rudder reference-less hydraulic outboard systems.

February 2014 – Raymarine is pleased to announce the addition of new Hydro-Balance™ technology to its multiple award-winning Evolution™ autopilot line. This new patent-pending technology brings an even higher level of autopilot steering performance to boats with hydraulic steering systems. Specifically designed for hydraulic steering systems which have no rudder reference fitted, Hydro-Balance™ is particularly effective on boats with outboard engines.

Evolution™ Hydro-Balance™ technology adapts to your boat’s steering system

Evolution’s new Hydro-Balance™ technology actively compensates for hydraulic system elasticity caused by air bubbles trapped in the steering system, flex in hose and piping, and variable valve performance. Elasticity is a variable factor that can degrade autopilot performance over time. Experienced captains instinctively feel and compensate for system elasticity when steering by hand, but an autopilot needs to learn how to detect and compensate for it when it is in control of the boat. Until now, conventional marine autopilots without rudder angle sensors were unable to detect this condition.

Left unchecked, an autopilot steering a boat with excessive steering system elasticity will show symptoms of hunting and oscillation; the boat’s heading may swing through a few degrees or the outboard motors may hunt as the pilot struggles to keep the boat on course. With autopilot hunting, the pilot drives the outboards back and forth over a few degrees,
New Hydro-Balance™ technology for Evolution™ autopilots

trying to sense why the boats heading is falling off. Often it’s just not possible to correct the condition as conventional autopilot systems do not have the precision heading reference or smart sensor built-in to exclude hydraulic system elasticity.

Raymarine’s Evolution™ autopilots with Hydro-Balance™ technology adjusts for elasticity in the system and compensates automatically to prevent steering oscillation. Under autopilot control, the result is precise course-keeping and no drive-unit hunting.

Hydro-Balance™ technology keeps Prop-Walk in check

Another common issue with high-powered outboard engine vessels is asymmetrical torque steer, commonly known as “prop walk.” Essentially, the torque of the turning propellers creates a minor side-force that acts like a tyre gripping the road. In addition to propelling the boat forward or aft, the side-force causes the boat’s bow to veer off to port or starboard (depending on the direction of rotation of the propellers.) Asymmetry also causes boats to turn more tightly in one direction than the other. At low autopilot speeds, asymmetry can impact the natural motion of baits and jigs while trolling. During rapid acceleration, asymmetry can cause the boat’s heading to pull to one side even though the helm is straight. Hydro-Balance™ technology detects asymmetry and then teaches the Evolution™ autopilot to eliminate it through smart adaptive algorithms. The result is straight-as-an-arrow course keeping at all speeds.

Raymarine’s Evolution™ autopilot systems with Hydro-Balance™ technology will be available in the spring of 2014. Best of all, it’s easy to add Hydro-Balance™ Technology to any existing Evolution™ autopilot system via a simple software upgrade. For the most up-to-date information on Evolution™ autopilots, go to www.raymarine.com/evolution, or see your local Raymarine dealer today.
For further information contact Haley Ellison, 503-919-0696 or by email at haley.ellison@flir.com

For high res images: Please visit www.raymarine.com/media

About Raymarine:

Raymarine, a world leader in marine electronics, develops and manufactures the most comprehensive range of electronic equipment for the recreational boating and light commercial marine markets. Designed for high performance and ease of use, the award-winning products are available through a global network of dealers and distributors.

The Raymarine product lines include radar, autopilots, GPS, instruments, fishfinders, communications, and integrated systems. Headquartered in Fareham UK, Raymarine is a division of FLIR Systems, a world leader in thermal imaging. For more information about Raymarine please go to www.raymarine.com.

About FLIR Systems:

Pioneers in all aspects of infrared technology, FLIR designs, manufactures, and supports thermal imaging systems and subsystems for industrial, scientific, government, commercial, and firefighting applications. With almost 50-years of history in infrared innovation, over 100,000 systems in use worldwide, and development centres and sales offices in over 60 countries, FLIR is the world leader in thermal imaging technology. Visit the company's website at www.FLIR.com

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