Case Study

Servo-Based Tank Level Gauging System Improves Inventory Control at Terminal Maritimo

“High accuracy and low maintenance has reduced considerably the man hours originally allocated for the tank gauging system”

- Ing Walter Ayo, Manager Instrumentation and Control, EP FLOPEC

Benefits
The Flopec gas terminal Maritimo in Monteverde, Ecuador is realizing improved tank level measurement accuracy, reduced maintenance costs and higher reliability since the installation of the Honeywell Enraf servo-based tank gauging system. Accurate assessment of tank contents for inventory control and tank farm management helps the terminal improve profitability. Accurate and reliable measurements also contribute to cost reductions and to plant staff safety. The inventory system is easy to use and user-friendly with flexible programming and quick and simple startup. Installation is straightforward. Almost any nozzle - 2” and up - can be used, even with the tank in service. To simplify startup, calibration and servicing, a portable Honeywell Enraf terminal can be used to bypass the central system.

The servo-based system delivers accuracy of 0.4 mm over the entire measuring range. Robust, modular construction and a minimum number of moving parts translate into reduced maintenance costs, high reliability and a longer life. The system drives down operational costs, while increasing safety. The Honeywell Enraf solutions are backed by local support and designed for the lowest total cost of ownership.

According to Mr.Ing Walter Ayo, Instrumentation Manager at the Maritimo terminal - "Our investment is already showing the expected results."

Background
Flota Petrolera Ecuatoriana - Flopec operates as a maritime hydrocarbons transporter. The company engages in shipping of oil and it designs and builds storage facilities for liquefied petroleum gas marine terminals. The Flopec gas maritime terminal Ep Flota Petrolera Ecuatoriana in Monteverde, Ecuador was on a mission to install a new, state of the art and accurate tank gauging system. The original project specification called for Radar technology to be used for the level measurement. Upon consulting with Honeywell Enraf however, Flopec management and operations staff came to the realization that Enraf's Servo technology was a better fit and would provide more accurate measurement of light products such as LPG, Propane, Butane and other products at the Monteverde terminal.

Challenge
"It is paramount for us that the level measurement and inventory calculations are highly accurate to support our operations and investments" said Mr. Ayo. High reliability and uninterrupted availability of data were also high on his list of requirements.

To monitor and manage physical inventories terminal operators need reliable gain/loss calculations, reliable tank gauging and dependable inventory management systems. Strong competition means margins are squeezed. In addition to those challenges Flopec must comply with stringent safety and environmental standards.

As the system requirements were being refined Flopec determined that they required not simply a tank gauging system but also a real “Inventory Control System” which required options such as density measurement with the servo level gauge that
allows them to calculate corrected volumes and total mass and to generate periodic management reports.

Flopec determined that the Honeywell Enraf Tank gauging was well suited to meet these challenges.

**Solution**
The Honeywell Enraf gauging system offers fast data access for environmentally conscious operation of gas and liquid bulk storage sites. A highly accurate force transducer, microprocessor control and advanced software provide precise, reliable measurement and control. The servo gauges are fully microprocessor controlled. All instrument functions are driven by smart software to optimize measurement accuracy; the software can also calculate compensation for hydrostatic deformation of the tank. This feature improves the measurement performance for tanks that are not equipped with a standpipe.

Said Mr. Ayo: "We selected Honeywell Enraf Servo level gauges due to the great quality, reliability, and high technology that they represent".

The Honeywell Enraf system installed at Monteverde comprises:

- 854 ATG Servo Level gauges
- VITO Smart Temperature Sensors
- CIU Prime and Plus Communication Interface Units
- ENTIS PRO Windows-based Tank Inventory System

According to Mr. Ayo, “The Honeywell Enraf solution provides us with a reliable inventory system well suited for LPG applications. High accuracy and low maintenance has reduced considerably the man hours originally allocated for the tank gauging system at our terminal. Everything has been working smoothly per the project specifications. Local support and technical service support during installation, commissioning and start-up were also drivers for our decision”

Honeywell Enraf gauging systems combine the latest technology with this proven measurement concept for an unrivalled solution to help terminals across the world create safer, more reliable and more efficient operations.