

Evolution of radar gauges continues

Saab Rosemount Marine has introduced a new radar gauge and takes advantage of the booming market for FPSOs; Kongsberg gains a foothold in Korea

Level gauging has come a long way since the time when tankermen still had to drop bobs into open tanks. The radar gauge, when it was first introduced just over 25 years ago by Saab, was considered to be an expensive luxury, although the unprecedented levels of accuracy and the safety its placement outside of the tank afforded, along with an eventual drop in price as the technology became more widely adopted soon saw a massive take-up within the industry.

Innovation in this sector of the industry consists of a drive towards ever higher levels of accuracy and an increasing level of integration between level gauging systems and other cargo control systems onboard tankers. In this spirit, Saab Rosemount Marine (Saab) recently announced the launch of a new 'three-in-one' radar gauge, called Saab TankRadar STaR, which is capable of providing ullage measurements, high level alarms and overfill alarms. Each of the three functions has its own separate radar channel, but all are encased in a single instrument.

In addition to the gauge's trebled functionality, the gauge employs a new sensor technology which allows it to transmit ready-processed signals from the radar tank unit and also gauges more frequently than previous generations of Saab radar gauges, allowing the user to react more quickly to level changes during loading and discharge, claims the company. One of the benefits of the new gauge, says Saab, is that it reduces costs for owners and operators by minimising the need for multiple deck penetrations, as well as cutting down on the amount of cabling required. The STaR gauge currently has type approvals from Lloyd's Register (for all three of the gauge's functions) and from Det Norske Veritas (for the level gauging and high level alarm functions).

According to CEO Anders Roos, Saab installed a prototype onboard a Norwegian shuttle tanker in November of last year. The results were more than satisfactory, and the product was placed on the market in March of this year. The first 'real' installations took place in June of this year onboard two chemical tankers owned by Bröström; both vessels were built in China less than five years ago and are around 13,000 dwt. Currently, says Roos, there are 15 to 20 orders for the new gauge on Saab's books.

Fitting FPSOs

The new STaR gauge represents Saab's next generation of radar gauges, but its G3 gauge continues to enjoy success, particularly onboard Floating Production, Storage and Offloading vessels (FPSOs). Saab's first order for an FPSO was onboard the Sellen, which was delivered to BP by Harland & Woolf in 1986. To date, Saab has fitted 56 FPSOs and FSOs.

The company's most recent order was for the Atlantic (formerly the Moss Ocean), a conversion to be carried out by Single Buoy Mooring in Dubai. The order is significant, says Roos, as it is the first conversion ever to be undertaken in Dubai. The majority of FPSO conversions take place in the Far East, primarily in Singapore, while many FPSO newbuilds are undertaken in Korea. Two of which, the Black Lion and an FPSO newbuild for Husky Oil of Canada, will have Saab radar gauges onboard.

"This year has been exceptional for FPSOs," says Roos. "There have never been so many conversions going on before. The prediction now for FPSOs is that they will continue to grow: outside West Africa, Vietnam and also the US Gulf."

The outlook for Saab, unlike manufacturers of other kinds of tanker equipment, is rosy. Other equipment manufacturers are already feeling the pinch of a slowdown in newbuilding, whereas Saab has been able to expand into other sectors of the industry. Roos is quick to point out, however, that the FPSO business is not a substitute for the seagoing tanker business. "It's an additional business," he says. "We have been in FPSOs from the very beginning. It's just that it's taking off more dramatically this year than it has done before. They have found more oil in the marginal seas and the prices are a little better than before, so it pays to take the opportunity."

Roos is justified in his optimism about the FPSO sector: a report published by industry analyst Douglas Westwood Ltd predicted that in addition to the current orderbook of 24 units and a further 17 "probable" installations, 134 new floating production systems will be launched by the year 2006, of which 91 will be FPSOs. Saab's success in this sector has led to discussions with its parent company, Emerson, an industrial manufacturer which provides the oil industry with machinery automation packages, about how best to cooperate. "If we look at the FPSO, it is more or less a ship; the refinery is on top of the vessel, and that is very often done by someone other than the shipyard. Emerson is very strong on the topside - the total automation package, as well as the instrumentation, pressure sensors and temperature sensors," says Roos.

"What we are looking at now is the possibility of doing something together, combining with our systems. They come from the refinery/production side, and we come from the marine side."

Kongsberg in Korea

Kongsberg Maritime Ship Systems (KMSS), borne of the merger between Autronica and Norcontrol, has been attempting to wrest a share of the market for radar gauges away from Saab, the market leader. The company recently announced that it had gained a foothold in the Korean shipbuilding market, with an increase in market share of 33 per cent, up to 41 per cent in 2002 from 8 per cent in 1998. KMSS gives the credit for this dramatic increase to its local sales network in Korea.

"We are very pleased with our development in Korea, and we intend to further penetrate the market," says Ragnor Slettestøl, vice-president of cargo monitoring and control systems for KMSS. "The Korean shipbuilding market has been dominated for too long by one cargo level gauging supplier, and we are confident that we will continue to offer strong competition."

KMSS provides what Slettestøl calls "a complete cargo instrumentation system", which includes a radar level gauge and systems for inert gas and cargo tank measurements and cargo line, cargo manifold and pump pressures, all integrated into one system. In addition, says Slettestøl, there KMSS also provides instrumentation for other types of tanks, such as saltwater ballast, portable water and all other technical tanks. KMSS' high level alarm system is an independent system that is sold as an option with the cargo monitoring system.

All of the inputs are run into a monitoring system, and increasingly, into integrated loading computers. The software which runs on KMSS' monitoring systems is based on Windows NT; this monitoring workstation allows the user to collect all of the relevant data on ullage, temperature, pressures, filling rate and other data.

Slettestøl is optimistic about KMSS' future. "Our aim is to become number one. We have increased the number of orders in Korea - during the first quarter of this year, we were very close to Saab in number of orders. One advantage is that we have become a bigger company with a bigger service network. Since we merged, we have become stronger."

Innovation continues

According to both Roos and Slettestøl, innovation is paramount. Roos foresees a time, perhaps within the next two years, when the integration which is currently going on onboard vessels between cargo monitoring and control systems will extend to the shore.

"We will see more integration on the high-end side of the instrument, where you will be able to make connections from the ship to the office, and from the office, you will be able to get into the system and track the vessel and its operating status, minute by minute. Satellite communications will make all the information they have onboard the vessel available in the office."