

PT32-41\_3

# Increased safety and transportation efficiency

Erik Brinch Nielsen, Marimatech, Hinnerup, Denmark

As ships keep getting bigger, timely delivery becomes ever more important. Handling of goods is reaching levels over and above expectations. Increased efficiency without compromise to safety is just one of the issues of what is needed. Efficiency is many things, one such being the smooth and timely handling of ships. Even the smallest delay will cause problems, forcing harbours to think up all matter of solutions to get ships in and out on time.

## PPU features

One such tool is the Portable Piloting Unit (PPU), which will bring more opportunities to harbours if the technology is accepted and the relevant features and tools are included in the PPU. The PPU is not just an electronic chart but has much more to offer.

## What does the PPU offer?

Starting with its basic function the PPU is an electronic chart system based on an approved ECDIS. Here we have a range of basic functions for safe and accurate navigation and positioning, which in most cases is better than what is on board the ship. What is important is that the pilot has his own system with his own charter, which includes the latest updates.

Another standard today is the integrated AIS functionality now a part of the PPU. The latest system hardware makes the pilot

fully independent of the ships AIS installation, which often is not working properly for the efficient PPU support.

The PPU offers accurate heading better than any gyro ( $\pm 0.05$  deg) position accuracy in centimetre range. This kind of accuracy makes it possible to calculate rate of turn better than 1 degree per minute, all leading to a reliable prediction; important for difficult harbour manoeuvres.

This system now also makes accurate deviation measurements enabling one to calculate squat and dynamic under reel clearance.

Another feature is the ability to integrate tugboat positioning and their applied forces in the PPU, a feature, which again is becoming

increasingly important as ships get larger. This feature will require equipment permanently installed in the tugs; the first tugboat integrated systems are now being used for handling LNG carriers.

Marine terminal systems (particularly related to oil and gas) are becoming more automated. From the PPU, the pilot will be able to activate Quick Release Hooks when leaving the jetty. This will further improve safety as well as save the mooring crew in departure situations. In mooring situations the pilot will be able to monitor the tension in all mooring lines for a more efficient and safe mooring.

High accuracy is also of importance when handling large ships in locks. The new PPU opens up the possibility of operating 24 hours a day as well as in extreme weather conditions without compromising safety.

Simulators will soon be offering training with PPU's for both pilots and tugboat captains. This will be the most efficient way of providing top tuned PPU training to navigators.

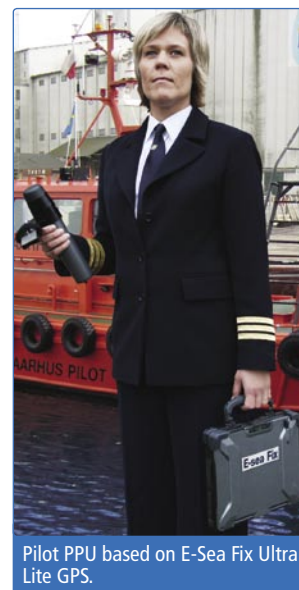
The Force Institute in Denmark have the most advanced tug boat simulator in use today. It is used for SvitzerWijsmuller og Voith Turbo Marine.

The internal recording facility in the PPU gives pilots the opportunity to analyse operations via an efficient play back and training facility.

The latest hardware has no cables, thus totally wireless bringing the system weight down below six kgs. The many features in the new system are increasing the importance of using the PPU to improve harbour operations and the ability to take extra care when managing an increased fleet of large vessels.

Other specialised uses of the PPU are in relation to lightening operations, single point mooring and offshore operations in general when safety is of high importance.

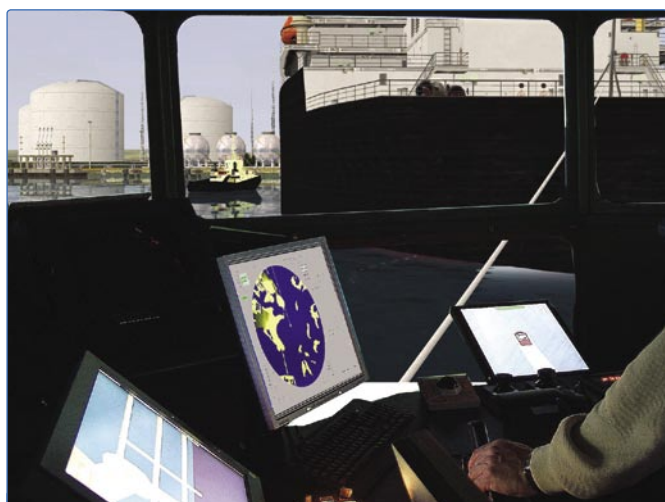
In the next few years as PPU's continue to become lighter and more compact, they will find their way into nearly all pilot organisations.



Pilot PPU based on E-Sea Fix Ultra Lite GPS.



Tug boat simulator (FORCE).



Tug boat simulator (FORCE).

## ENQUIRIES

Marimatech AS  
Samsøvej 31, DK-8382 Hinnerup, Denmark

Tel: +45 86 91 22 55

Fax: +45 86 91 22 88

Email: mail@marimatech.com

Website: www.marimatech.com