



ETAPILOT[®] type EPE



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Introduced in late 2007, ETAPILOT type EPE is a new generation of the pioneering and well-known fuel-saving system ETAPILOT, now installed on many large Ferries and Ro/Ro ships around the world.

Fuel economy !

By means of ETAPILOT you operate your ship in the most economical way. ETAPILOT will continuously keep watch and **automatically** minimize the bunker consumption by actually **controlling** the propeller pitch and revolutions.

Using position data, the easy-to-use self-navigating feature ensures that the measured Distance To Go is always correct, even along complicated routes.

Network capability

You can monitor and create reports on PCs remotely, over the local network and over the Internet/intranet.

-In Real Time

Internet/intranet

(optional)



ETAPILOT



Offices On Board



Office Ashore

Read more on the following pages about

- Fuel-saving
- Shallow waters
- Easier than ever to install
- Self-navigation and Route-planning
- Database
- Conning Display
- Network capability

My ship? Yes!

ETAPILOT is designed for retrofit, as well as for new-buildings, and interfaces easily with any make and type of manoeuvring system. Welcome to contact us for a discussion. **Pay-back time is short!**

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INTRODUCTION

The fuel consumption of a vessel is primarily determined by its speed and displacement. However, at a specific speed and displacement, fuel consumption may vary considerably, depending upon such factors as propeller efficiency, specific fuel consumption of the engine, water depth, weather conditions etc.

For example, operation in shallow waters increases fuel consumption drastically in comparison with the consumption obtained for the same vessel speed but in deep waters. Thus, it is vital to have access to measuring and control equipment that sets the correct vessel speed, and -in addition- ensures that fuel consumption is as low as possible at every vessel speed.

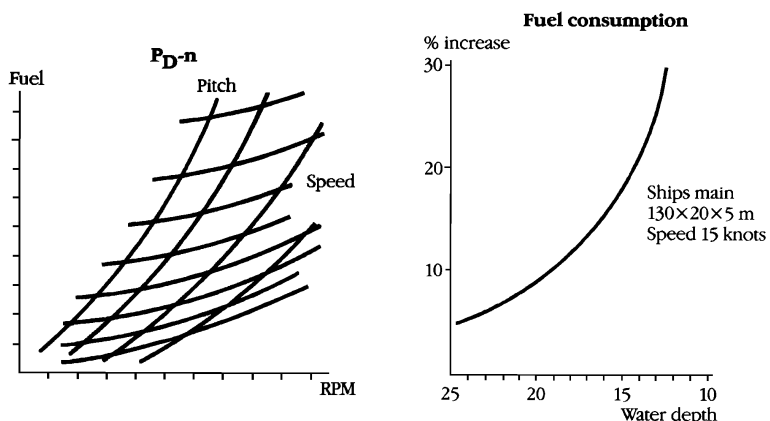
ETAPILOT® is a measurement **and control** system that performs the following tasks:

- Controls to a set vessel speed. The speed can be set directly or by setting distance to go and time of arrival.
- Controls to a set fuel consumption per nautical mile, so that account is automatically taken for changes in external conditions, e.g. water depth or weather conditions. The fuel consumption can be set directly or used as a limiting value in combination with a vessel speed setting.
- Controls to the combination of propeller RPM and propeller Pitch that gives the lowest fuel consumption at all vessel speeds and in all operating conditions.
- Controls to preset speeds and consumption values in accordance with a pre-programmed route plan (a nominal speed profile and coordinates), automatically adjusting leg-speeds to meet your set arrival time. Position data is continuously used to ensure that Distance To Go is maintained correct also along complicated routes (many turns).
- Provides the operator with all data necessary for economical vessel operation.

The statistics and analysis functions make it easy for the operator to analyse each voyage. The ongoing voyage is continuously displayed as a detailed graph. Any other old voyage can be simultaneously displayed as a detailed graph, thus facilitating comparison of the ongoing voyage with other voyages of the same category. It is easy to create fuel reports and other reports relevant to economical vessel operation. The memory has capacity to log many years of data.

If connected to the local network, the built-in database server makes it possible to, on other computers on board (and optionally ashore if an Internet/intranet connection is facilitated), monitor ETAPILOT data -in real time-, as well as create reports and look at any old voyage. In addition, upgrading and other kinds of technical support is possible over the Internet.

The name ETAPILOT (a registered trademark of ETAPILOT CONTROL AB) was once picked from the Greek letter η , pronounced "eta", which is commonly used in formulas for efficiency. $\eta = \text{Power out} / \text{Power in}$, so the connection to Estimated Time of Arrival is a coincidence. Optimizing the propeller efficiency is just one of the original ideas with the fuel saving system ETAPILOT.



TECHNICAL DESCRIPTION

ETAPILOT comprises the following main components:

Bridge Area:

- EPE-1: Embedded computer, I/O-terminals, I/O-LinkA*
- EPE-2: Operator's set: 19" Hatteland display, Control panel, PC-keyboard and mouse

Engine Area:

- EPE-3: Interfaces, RPM sensors, I/O-terminals, I/O-LinkB*

*) I/O-LinkA and I/O-LinkB units communicate over just two ordinary wires.

Input signals to the ETAPILOT-system are mainly:

GPS: NMEA-signal for speed and position,

fuel flow meter(s): typically 10 potential free pulses per litre

and from the RPM sensors which are to be fitted at the propeller shafts.

Additional signals necessary for control are case-dependent.

Signals from various sources can be handled for recording and displaying purposes, like Trim, Depth, Wind etc.

Output signals from ETAPILOT are mainly:

the speed setting signal to the engine RPM governor and

a pitch control signal to the propeller maker's load control system.

Note: ETAPILOT can only reduce the setpoint of the load control system, never increase it.

The installation of ETAPILOT is easier than ever, since **cabling** between the bridge area and the engine area is reduced to a minimum -just two ordinary wires, usually already available.

The display is available both for Flush mounting and for Bracket mounting and is dimmable 0-100%.

The system is 'self-navigating' using the GPS position data: Distance To Go is continuously updated by the latitude and longitude, also if you sail along a complicated route (i.e. many turns), so it is not just as the crow flies that is calculated.

The usage is extremely simple: normally it's enough with three button-pushes per voyage, e.g. ROUTE 5 CONTROL and this can be done at any location during the voyage - no need to watch for a precise moment.

Relevant data is stored in a **database** and you can display and print out detailed data for the ongoing voyage as well as any other old voyage, as graphs or lists. The database can be exported to meet your requirements, should you prefer to write your own SQL.

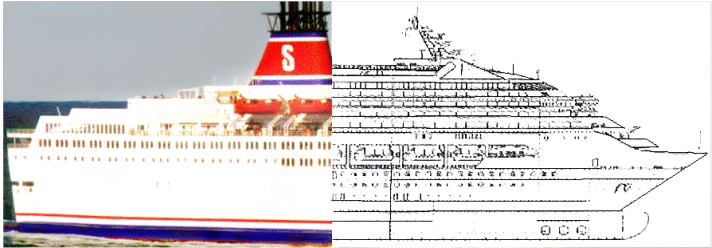
Data and the operating system are stored in flash technology memory, which is **vibration-proof**.

A **Conning Display** output is supplied for computer with ETAPILOT software or other make.

ETAPILOT[®]
saves fuel

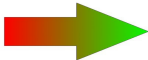
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The ETAPILOT system is designed to interface to different kinds of vessels. Whether the manoeuvring system is electrical or pneumatic, ETAPILOT can be interfaced.



For Newbuildings as well as for Retrofits.

Upgrades to the new EPE-functionality are available for the previous generation ETAPILOT, type EPD:



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