

Innovative Technology in Propulsion Management

# ***EMS 1000 Fuel Management System***

- **Patented rack displacement fuel measurement technology proven in over 15 years of marine service**
- **Unsurpassed linearity and repeatability over entire operating range**
- **No fuel line blockage potential**
- **No costly fuel line modifications**
- **Monitors up to 4 main engines**
- **Optional auxiliary monitoring**
- **Precise digital RPM readings**
- **Main engine HP display**
- **GPS input for speed & position data**
- **Automatic voyage data logging**
- **PC electronic gauge display panel**
- **DataView voyage analysis software**



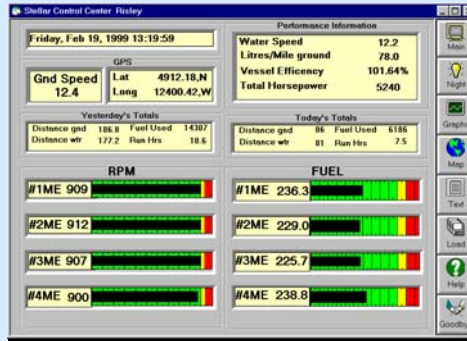
  
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## Stellar Control Center PC Software

Stellar Control Center is an easy to use data display and voyage analysis software package. The program runs on a standard IBM PC compatible under Windows 95, or Windows NT. A serial communications port on the EMS 1000 supplies vessel performance data to the PC. The program displays key performance information in real-time using an electronic gauge panel. In addition, it creates daily data log files on the PC's hard disk drive. Each daily log consists of records that contain navigational and propulsion performance data, recorded at one minute intervals. The programs DataView utility lets you examine vessel performance for a complete voyage, or any part of it using the information contained in the daily log files.



### Electronic Gauge Panel

Provides real-time vessel performance data using color bar graphs and readout windows. A series of buttons along the right edge of the screen lets you jump to any of the programs other functions. Vessel performance data logging occurs automatically regardless of which screen is in use. The program window can be minimized and runs in the background while other Windows programs are in use.

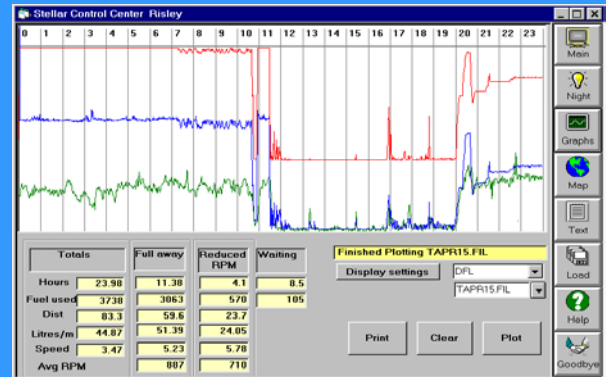


### Map Utility

The Stellar Control Center Map Utility plots vessel track information on area maps. Track information is displayed by plotting the one minute GPS position fixes from the daily data log files stored on the PC. A Lat. Long. mouse pointer display makes it easy to correlate vessel performance data with vessel location. Alternate maps are available, consult the factory for details.

### DataView Vessel Analysis

The DataView utility is powerful vessel performance analysis tool. It lets you select and view any of the daily log files stored on the PC. The program automatically calculates totals, averages and other statistics using the one minute data records. A 3-pen strip chart style graph illustrates the relationship between speed, RPM and fuel burn rate over a 24 hour period. The program features a zoom function that lets you mark areas of interest on the strip chart and view them in greater detail using an expanded scale.



### Remote Display Unit

The Remote Display unit allows continuous display of up to 12 data variables. It features a two-line eighty-character liquid crystal display with integral LED back lighting. A programmable function key enables the operator to toggle between two display screens. Display back-light intensity is adjustable for nighttime operation.

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WATCH REPORT FOR THE SAMUEL RISLEY      12:26:33      03/17/97

CURRENT STATUS:
LAT 4912.18N      LONG 124.43,W      CMG 057      GROUND SPEED 10.4
L/M GROUND XXX.X      L/M WATER XXX.X      WATER SPEED 11.1
VESSEL EFFICIENCY XXXX.X

FUNCTION          #1ME      #2ME      #3ME      #4ME
FUEL RATE XXXX      XXXX      XXXX      XXXX
HORSEPOWERXXXX      XXXX      XXXX      XXXX
RPM              XXXX      XXXX      XXXX      XXXX
RACK MM          XXXX      XXXX      XXXX      XXXX

TOTALS TODAY
DISTANCE SINCE MIDNIGHT      XXX.X
FUEL USED SINCE MIDNIGHT      XXXXX
```

### Print Reports

Hard copy reports are generated on a standard 80-column serial dot matrix printer. Custom report generating software produces Demand, Watch, Trip and Daily Summary reports. The format and content of each report is customized to suit the requirements of the vessel.