Contents

1 Introduction

The Navman SmartCraft™ gateway connects one or two SmartCraft capable Mercury petrol/gasoline engines to a SmartCraft capable Navman instrument, such as the FISH 4380, FISH 4600 or TRACKFISH 6600. The single gateway is for single engines, the dual gateway is for twin engines.

Adding the gateway extends the functions of the Navman instrument, allowing the instrument to:

- Display engine data, such as speed, RPM, pressures, tank levels.
- Control troll speed and display trim.
- Sound an alarm if it detects an abnormal engine condition.

This manual describes:

- How to install a Navman SmartCraft gateway.
- How to use the SmartCraft functions of a Navman SmartCraft capable instrument. Refer to the separate Navman instrument *Installation and Operation Manual* for information on how to install and use the instrument.

The engine data available in a system depends on the type of engine used (see section 1-1). The gateway replaces any fuel flow sensors that might be plugged into the Navman instrument .

It is vital to read this document and the associated SmartCraft and Navman installation and operation manuals before installing or using the system.

1-1 SmartCraft data available from different engines

The SmartCraft engine data available in a system depends on the type of engine. SmartCraft is a digital engine network provided on some later model (2002 +) Mercury and Mariner Engines, both in-board and out-board.

	Engine type											
Engine data available	4 Stroke 30 - 60	V-6 EFI	Optimax 75- 115	Optimax 135-250	Optimax 225 DTS	Verado	Mercruiser 4.3 L	Mercruiser 5.0 L	Mercruiser 5.7 L	Mercruiser 6.2 L	Mercruiser 8.1 L	496 HO
Steering Angle							✓	✓	✓	✓	✓	✓
Fuel level		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil temperature						✓						
Oil Pressure						✓	✓	✓	✓	✓	✓	✓
Engine Trim				✓	✓	✓	✓	✓	✓	✓	✓	✓
Water Pressure		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Engine temperature	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fuel Flow	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fuel Level		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Engine voltage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pitot water (boat) speed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
RPM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

1-1-1 Tanks and sensors

Engines can have optional level sensors fitted:

- A two-stroke engine can have one sensor fitted to its oil tank, and one additional sensor fitted to a fuel, oil, water or waste tank.
- A four stroke engine can have one or two sensors fitted to its fuel, water or waste tanks.

If level sensors are fitted: the tank levels can be displayed; there are alarms for low tank levels; the tanks must be set up and calibrated (see following sections:

FISH 4380 : Section 3-8-1

TRACKFISH 6600 : Section 4-7-1

FISH 4600 : Section 5-7-1

1-2 What comes with your gateway ?

Built-in cable to the Navman instrument, 1 m (3.3 ft) long

Built-in cable to the SmartCraft system, 300 mm (1 ft.) long

Holes for mounting screws

SmartCraft Gateway

Gateway LEDS:

NAV (orange): Flashes fast when the gateway is exchanging data with the Navman instrument and the engine key is on.

PWR (green): On when power and the engine key are on.

CAN (red): Flashes fast when the gateway is exchanging data with the SmartCraft engine(s) and

Also supplied:

- Two mounting screws (8 gauge x 5/8 inch, Pan pozi, self tapping, stainless steel);
- warranty card;
- this manual.

Optional extras for SmartCraft

AA002237

Power/fuel splitter cable

A power/fuel splitter cable ('Y' cable) is required for Navman instruments that do not have a separate fuel sensor connector (such as the FISH 4380, see section 2-2). This cable is included in hardware packages AA005022 and AA005023 and is also available separately from your Navman dealer.

Also see Appendix-C

2 Installation

A system in a boat comprises:

a. One or two SmartCraft capable petrol/gasoline engines; the data available depends on engine type and the sensors fitted (see section 1-1).

b. A single or dual engine gateway.

c. A SmartCraft capable Navman instrument, such as the FISH 4380, FISH 4600 or TRACKFISH 6600.

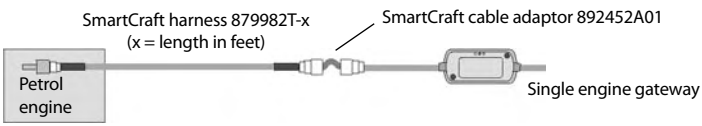
d. Other optional Navman instruments and SmartCraft displays. See Appendix-C

⚠ Warning: Correct installation is critical to the performance of the unit. Before starting installation, it is vital to read this manual and the documentation that comes with the other parts. Then plan the installation and select where the equipment and cables will be located.

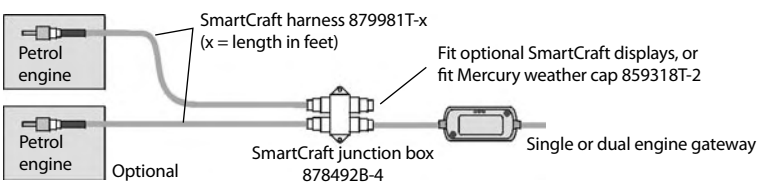
⚠ Warning: Ensure that any holes that you cut will not weaken the boat's structure. If in doubt, consult a qualified boat builder.

2-1 Connecting the gateway to the SmartCraft system

Using a Navman cable adaptor: Use a Navman cable adaptor in a single engine system which does not have optional SmartCraft displays. However, a SmartCraft junction box should be used if future expansion of the SmartCraft system is planned.



Using a SmartCraft junction box: Connect the gateway to a SmartCraft Junction box in a twin engine system or in any system with optional SmartCraft displays.



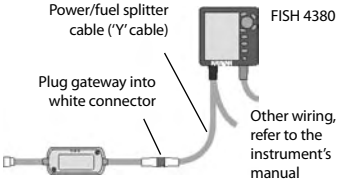
There must be two SmartCraft Terminators in any SmartCraft Installation. The Mercury harness 84-879982T-x has two terminators built-in; the Mercury harness 84-879981T-x has one terminator built-in.Terminators must be positioned at the furthermost ends of the SmartCraft network.

Refer to a Mercury SmartCraft manual, such as *Wiring for SmartCraft Gauges* (Mercury part 90-879939), for details of installation configurations and requirements, alternative termination methods and additional SmartCraft components such as harnesses, junction boxes and terminators. Also see Appendix C

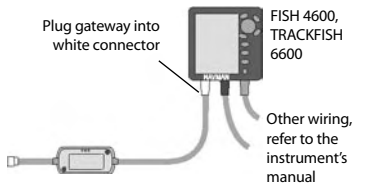
To use the SmartCraft functions, install the SmartCraft gateway (see section 2), then go to the System setup menu on the Navman Instrument and turn SmartCraft to On (See Setup > System menu).

2-2 Connecting the gateway to the Navman instrument

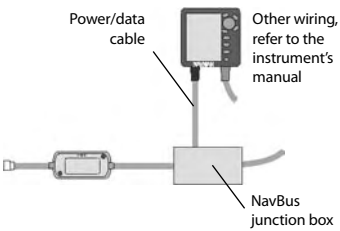
For a Navman instrument without a white fuel sensor connector (such as a FISH 4380):



For a Navman instrument with a white fuel sensor connector (such as a FISH 4600 or TRACKFISH 6600):



For any Navman instrument, using a NavBus junction box to connect to power/data cable (black power connector):



The wires from the gateway to the Navman instrument cable can be connected to the instrument's power/data cable. This option is not normally necessary. For more information, refer to your Navman dealer.

Cut white connector off gateway cable. Connect five gateway cable wires (red, black, blue, orange, brown) to the same colour wires in the power/data cable. An optional Navman NavBus junction box simplifies wiring.

2-3 Installation

1 Plan the installation: select where the equipment and wiring will be installed. Ensure that gateway can be located on a panel near the Navman instrument, where it will not interfere with the operation of the boat. (eg: cables are long enough for the installation planned)

2 Screw the gateway to the panel using the screws provided.

3 Connect the gateway (see sections 2-1 and 2-2). Secure the cables at regular intervals.

4 Power up, set up and test the system. Check the gateway LEDs:

NAV (orange): Flashes fast when gateway is exchanging data with the Navman instrument and the engine key is on.

PWR (green): On when power and the engine key are on.

CAN (red): Flashes fast when gateway is exchanging data with the SmartCraft engine(s) and the engine key is on.

Important:

1 Do not connect any Navman fuel sensors to the Navman instrument.

2 It is not necessary to wire any Navman instrument for auto power on.

3 The Navman SmartCraft capable instrument sends SmartCraft data to other Navman instruments connected by NavBus. To connect other instruments by NavBus, see the instrument's installation and operation manual. Turn NavBus on in all Navman instruments connected by NavBus; for example, for a Fish 4380, in the `Comms` setup menu, turn `NavBus` to `On`.

4 A gateway does not provide data for system link gauges.

5 To use speed troll control, the Navman instrument must have a Navman paddlewheel speed sensor connected.

3 Operation with a Navman FISH 4380

Before a SmartCraft gateway is connected, the FISH 4380 functions normally, with no SmartCraft functions. When a SmartCraft gateway is connected and `SmartCraft` is turned `On` (see section 3-1), SmartCraft functions become available and some standard functions change.

SmartCraft features

Data displays

Engine performance and tank level displays ..... See section 3-2

Troll control

Automatically maintains a set engine idle RPM or idle boat speed ..... See section 3-3

Trim indicator

Displays the trim angle when engine trim is adjusted ..... See section 3-4

Alarms

SmartCraft engine fault alarms ..... See section 3-5
Engine fault list, a list of active SmartCraft engine fault alarms ..... See section 3-6
Engine fault history, a list of past SmartCraft engine fault alarms ..... See section 3-6
Tank low level alarms ..... See section 3-2

Setup data and calibrations

SmartCraft setup data ..... See sections 3-1 and 3-7
SmartCraft calibrations, `Tanks`, `Trim` and `Steering angle`. ..... See section 3-8

The SmartCraft data available depends on the engine type and the sensors fitted (see section 1-1). To disable the SmartCraft functions, turn `SmartCraft` to `Off` (see section 3-1); the instrument will now use any Navman fuel sensors which are connected.

To use the SmartCraft functions and not the sonar functions, turn `Sonar` to `Off` (see section 3-1).

Changes to standard functions with SmartCraft

- MENU **key**: When using troll control, pressing MENU can display the troll window. Press MENU a second time to display the normal menu of options.
- **Fuel display**: The fuel display functions normally, with fuel and speed data coming from the SmartCraft system rather than from separate sensors connected to the FISH 4380.
- **Fuel setup options**:

  If no fuel tanks have an optional level sensor fitted (see section 1-1-1), then the Smartcraft fuel flow is used to calculate fuel remaining. The fuel setup data is the same as the standard FISH 4380. You must tell the FISH 4380 when you add or remove fuel (see the *FISH 4380 Installation and Operation* manual).

  If each fuel tank has an optional level sensor fitted (see section 1-1-1), then these tank levels are used to calculate fuel remaining. In the Fuel display, `Used` changes to `Trip used`, and the only fuel setup option is `Clear trip used`. `Trip used` measures the volume of fuel used until it is reset to zero by selecting `Clear trip used` in the fuel setup menu. You do not tell the FISH 4380 when you add or remove fuel.
- **Engine hours**: Engine hours on the Log display come from the SmartCraft system. It can not be reset.
- **Simulate mode**: Data from the SmartCraft engine(s) and sensors is simulated in Simulate mode. The SmartCraft features simulated will probably differ from the features available in your system.

For more information, see the *FISH 4380 Installation and Operation* manual.

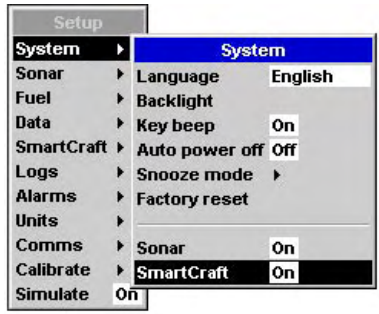
3-1 Setting up the FISH 4380 for Smartcraft

These features can be used only when the optional single or twin engine SmartCraft Gateway has been installed.

Press MENU twice to display the Setup menu, then select SmartCraft.

Press ▶ to select On or Off

Note: NavBus will be turned on when SmartCraft is turned on.



Sonar

Select:

Off: The sonar transducer and the sonar functions are disabled. Choose Off to use the instrument's SmartCraft functions only,

On: Normal sonar operation.

SmartCraft

Select:

Off: The SmartCraft functions and NavBus are disabled. The instrument will now use any Navman fuel sensors which are connected.

On: Normal SmartCraft operation.

3-2 SmartCraft engine data displays

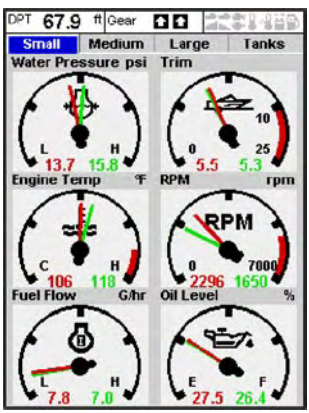
To display the SmartCraft data, press MENU and select `SmartCraft`, then press ▷, ⊕ or ⊖ or to select one of the four SmartCraft displays, shown below.

For the Small, Medium and Large gauges:

- The factory default has gauges appropriate to the type of engine. To change what gauges are displayed, see section 3-7: Gauge setup.
- If the boat has twin engines, the red needle or number shows port data, green shows starboard data.
- The gauges can be set up to be analogue (dial) or digital (number) (see section 3-7: `Gauge type` and `Speed range`).

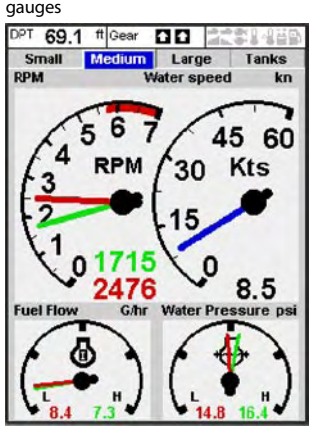
Each display has three items of header data. To select what data is displayed, see section 3-7: Header setup.

Small: Six small 'analogue' gauges:

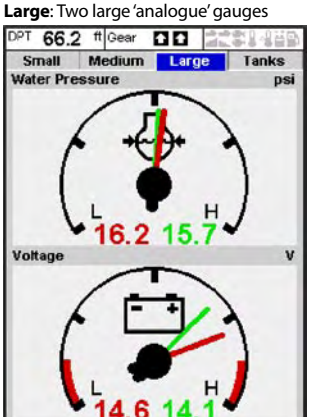


Header data

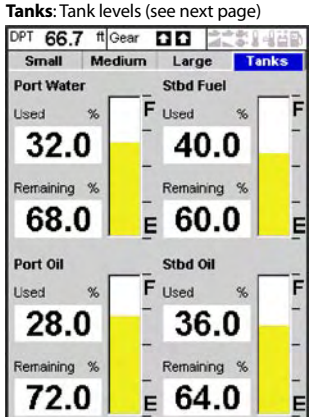
Medium: Two medium & two small 'analogue' gauges



Large: Two large 'analogue' gauges



Tanks: Tank levels (see next page)



Tank level display

The tank level display shows the levels from the optional level sensors in one or two tanks per engine (see section 1-1-1).

Note:

- Each tank must be set up and calibrated (see section 3-8-1).
- An alarm can be set to sound if the level in a tank is low (see section 3-8-1). These alarms are in addition to any SmartCraft engine fault low level alarms (see section 3-5).

3-3 Troll control

Troll control allows adjustment of the engine's idle speed from the Navman instrument. Troll control automatically controls the engine idle speed to maintain a set engine RPM or boat speed.

To use troll control, set `Troll window` to `On idle` or `Always` and set `Troll mode` to `Speed` or `RPM` (see section 3-7). To use speed troll control, set `Speed type` to `Paddle` (see section 3-7).

To prohibit troll control, set *Troll window* to *Never* (see section 3-7).

Engaging troll control

1 Set the throttle(s) to idle and the engine(s) in gear. From a main display, press MENU to display the Troll control window (see right).

2 Press ▲ or ▼ to set the desired RPM or boat speed (see notes 1 and 2).

3 Press ► to engage troll control. The FISH 4380 automatically controls RPM or speed. Or, press ◄ to leave troll control disengaged.

Changing RPM or speed while troll control engaged

1 From a main display, press MENU to display the troll window.

2 Press ▲ or ▼ to change the desired RPM or boat speed (see notes 1 and 2).

3 Press ◄.

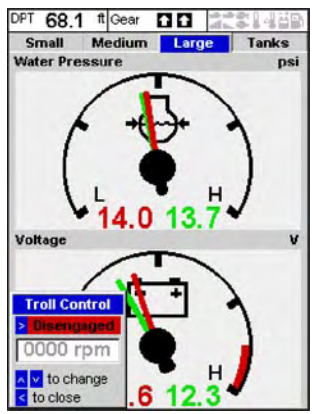
Disengaging troll control

Either move the throttle from idle, or:

1 From a main display, press MENU to display the troll window.

2 Press ► to disengage troll control.
Or, press ◄ to leave troll control engaged.

Note:



1 The range of engine idle RPM adjustment available for both RPM and speed mode depends one engine type. Generally this is between 600 and 1000 RPM.

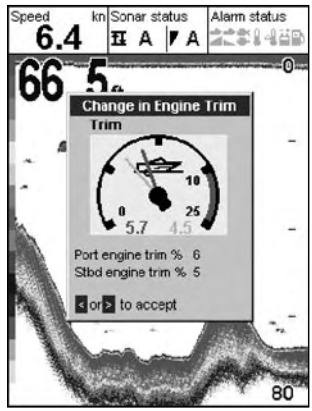
2 In speed troll control, the boat might not reach the desired speed if the maximum RPM available for troll control is too low or if conditions are bad.

3 Troll control is not available on some MerCrusier™ engines.

3-4 Trim indicator

When the engine trim is adjusted, a trim popup window can show the new trim angle. To see this window or not, set Trim popup to `On` or `Off` (see section 3-7). The window will automatically disappear after two seconds, or else press ◀ or ▶ to make the window disappear.

Before use, calibrate trim (see section 3-8-2).



3-5 Engine fault alarms

There are many SmartCraft engine fault alarms. These alarms operate just like the other alarms in the Navman instrument; when the alarm sounds, press ◀ to mute the alarm:

Low reserve oil.

Low remote oil.

RPM over speed.

Low oil pressure.

High engine voltage.

Low engine voltage.

A Navman instrument's low battery alarm measures the voltage the instrument; the above two alarms measure the voltage at the engine.

Low block (water) pressure.

Engine overheat.

Low drive lube.

(MerCrusier stern drive only).

Water in fuel.

Engine Guardian™ active: The Engine Guardian has detected a fault. The fault is displayed with the alarm.

Engine communication lost: The Navman instrument can not receive engine data from the SmartCraft gateway.

Check engine: There are many other engine fault alarms. When one of these alarms sounds, the alarm **Check engine** is displayed. For more information about the alarm, display the list of active alarms or the alarm history (see section 3-6).

Notes:

1 For help when an SmartCraft alarm occurs, contact your Mercury dealer.

2 These SmartCraft alarms are always on. The alarm values are determined by the engine type.

3 A list of active faults and a fault history can be displayed (see section 3-6).

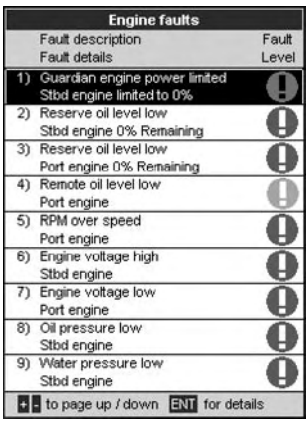
3-6 Engine fault lists

There are two lists of SmartCraft engine faults:

1 Engine faults list

A list of active engine fault alarms.

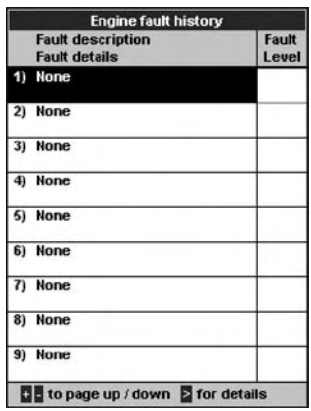
- To display the list, press MENU until the Setup menu is displayed, select `Smart-Craft`, then select `Engine faults`.



2 Engine faults history

A list of nine recent engine fault alarms.

- To display the list, press MENU until the Set-up menu is displayed, select `SmartCraft`, then select `Engine fault history`.



When a faults list or history is displayed

- Press + or − to page up and down the list.
- To display more information about a particular fault:
  - i Press ▲ or ▼ to select the fault.
  - ii Press > to display the information.
  - iii Press < or > to return to the list.
- To exit the list, press <.

To clear the engine fault history:

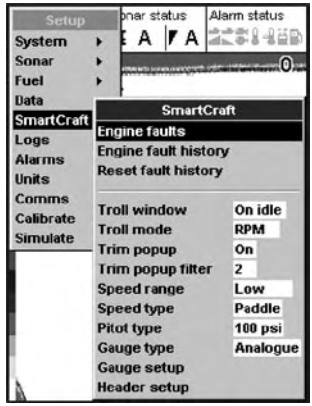
1. From a main display, press MENU until the Setup menu is displayed.
2. Select `SmartCraft`, then select `Reset fault history`.

Each engine fault has a priority:

- Red: Critical
- Orange: Severe
- Yellow: Warning
- Black: Caution
- Information

3-7 SmartCraft setup data

To go to the SmartCraft setup data, press MENU until the Setup menu is displayed, then select `SmartCraft`. The setup options are:



Engine faults, Engine fault history, Reset fault history

See section 3-6.

Troll window

Select from a menu:

`On idle`: Troll window is displayed when you press MENU and the throttle is at idle and the engine is in gear.

`Always`: Troll window is displayed when you press MENU.

`Never`: Troll window never displayed, troll control is not available.

Troll mode

Press ▶ to select what troll mode controls:

`RPM`: Controls engine idle RPM.

`Speed`: Controls engine idle RPM to try to achieve the desired boat speed.

See section 3-3, notes 1 and 2

Trim popup

Press ▶ to select:

`Off`: Trim popup window is never displayed.

`On`: Trim popup window is displayed when trim is changed.

Trim popup filter

This filter can stop the trim popup window appearing because of engine vibration rather than a trim change.

Press ▶, then press ▲ or ▼ to select a value, then press ▶. The values are `Off` and `1` to `5`.

Select `Off` or a low value first. Run the boat at a range of speeds and increase the value if vibration causes the trim popup window to appear. If the value is high, the trim window will appear slowly when trim changes.

Speed range

Set the speed range for an analog speed gauge (see `Gauge type` below). The options are `High`, `Medium` and `Low`. A higher range displays a higher maximum speed but the display is more compressed.

Speed type

Press ▶ to select the source of the water (boat) speed reading:

`Pitot`: The engine's pitot sensor.

`Paddle`: A Navman paddlewheel sensor.

The pitot sensor is more accurate at high speeds but is not accurate at low speeds. The paddle wheel sensor is more accurate at low speeds. To use troll speed control, set `Speed type` to `Paddle`.

Pitot type

Press ▶ to select `100 psi` or `200psi` to match the pitot type installed on the boat.

Gauge type

Press ▶ to select the type of gauges in the Small, Medium and Large SmartCraft displays (see section 3-2):

`Analogue`: Dial displays (see also `Speed range` above).

`Digital`: Number displays.

Gauge setup

Select what data is displayed in the gauges on the three SmartCraft gauge displays. Note that the factory default has gauges appropriate to the type of engine.

1 To select a gauge display. Press ◀ or ▶ until the display name (Small, Medium, Large or Tanks) turns blue.

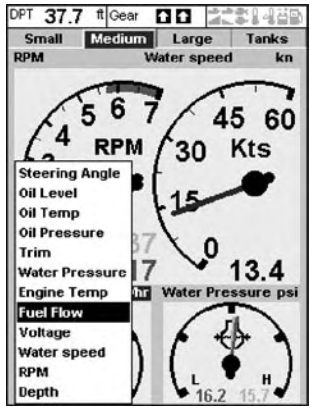
2 Press ▲ or ▼ to select a gauge.

3 Change the gauge:

   i Press ▶ to display a menu of options for the selected gauge (see right; the options available will depend on your engine, see section 1-1).

   ii Press ▲ or ▼ to select an option, then press ▶.

4 Repeat steps 1 to 3 to change more gauges, then press ◀ one or more times to return to the main display.



Header setup

Select what data is displayed in the header data on the four SmartCraft displays. The display shows the header, with the selected data item highlit.

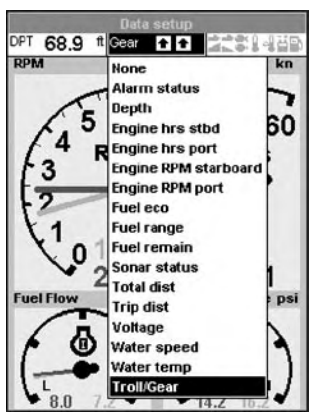
1 Press ▲ or ▼ to select the header item to change.

2 Change the item:

   i Press ▶ to display a menu of options for the selected item (see right; the options available will depend on your engine, see section 1-1).

   ii Press ▲ or ▼ to select an option, then press ▶.

3 Repeat steps 1 and 2 to change more header items, then press ◀ one or more times to return to the main display.



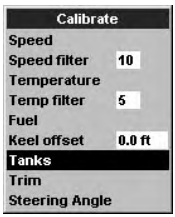
3-8 SmartCraft calibration

There are three SmartCraft calibrations.

3-8-1 Tanks calibration

If tanks have level sensors fitted (see section 1-1-1), set the type of tank, the tank alarms and calibrate if required:

Press MENU until the Setup menu is displayed, then select `Calibrate`, then select `Tanks`.



For each tank with a level sensor, follow the steps below:

1 Select `Tank`, press ▶ and select the tank from the menu.

2 Select `Tank type`, press ▶ and select the tank type from the menu (`Unused`, `Fuel`, `Water`, `Oil` or `Waste`).

3 The raw level sensor data is the level in the tank as a percentage of the level when the tank is full (100 %). To select how the level sensor data is displayed on the `Tanks` display (see section 3-2), select `Display type`, press ▶ and select the type from the menu:

`Percentage`: Display the raw level sensor data. Note:

- If the sides of the tank are not vertical and straight, then the `Percentage` level sensor data displayed does not correspond to the volume in the tank; for example if the sensor shows 50 %, the tank is not 50 % full.
- For `Percentage` display type, fuel `Used` and `Remaining` on the Fuel display can not be calculated, and are displayed as `Invalid`.

`Volume`: Display a volume calculated linearly from the sensor data, for example if `Tank size` (see below) is 500 G and the sensor shows 50 % of full, then 250 G is displayed. Choose this option only if the tank has vertical, straight sides and the tank bottom and top are flat.

`Calibrated volume`: Display a volume calculated non linearly from the sensor data. Choose this option if the tank does not have vertical, straight sides. You must calibrate the tank (see step 6 below).

4 To set a low level alarm for the tank (see section 3-2):

i Select `Tank alarm`.

ii Press ▶ to turn the alarm `On` or `Off`.

iii Press ▲ or ▼ to set the alarm value. The alarm will sound if the alarm is `On` and the tank level is less than the alarm value.

iv Finally, press ◀.

5 Set the tank size:

i Select `Tank size`.

ii Press ▲ or ▼ to set the tank size.

iii Finally, press ▶.

6 If `Display type` is `Calibrated volume`, the sensor data must be calibrated.

i Select `Calibrate`.

ii Follow the instructions displayed to add measured amounts of fuel.

iii Finally, the display shows `Tank size` (set in step 5 above), `Actual size` (the volume of fuel you added to the tank), and asks `Is this correct?` Select:

- `Accept` to accept the calibration

- `Change` to change `Tank size` if `Tank size` is not the same as `Actual size`.

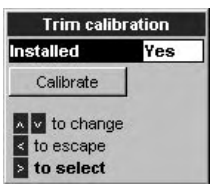
3-8-2 Trim calibration

If the SmartCraft system has trim control, calibrate the trim angle display (see section 3-4):

1 Press MENU until the Setup menu is displayed, then select `Calibrate`, then select `Trim`.

2 Select `Installed` and press ▶ to select `Yes`.

3 Select `Calibrate`. Follow the instructions displayed.



3-8-3 Steering angle calibration

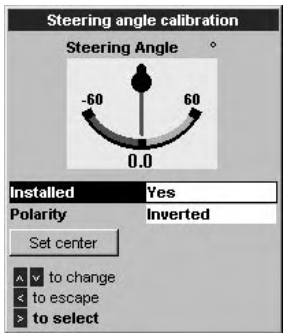
If the SmartCraft system has a steering angle sensor, it must be calibrated.

1 There must be little wind and little current. Travel at a typical cruising speed.

2 Press MENU until the Setup menu is displayed, select `Calibrate`, then select `Steering angle`.

3 Steer the boat to port. If the display needle does not turn to port, select `Polarity` and press ▶ to select the other polarity (`Normal` or `Inverted`).

4 Steer in a straight line, then select `Set center` to calibrate the steering angle.



4 Operation with a Navman TRACKFISH 6600

Before a SmartCraft gateway is connected, the TRACKFISH 6600 functions normally, with no SmartCraft functions. When a SmartCraft gateway is connected and `SmartCraft` is turned `On` (see section 4-1), SmartCraft functions become available and some standard functions change.

SmartCraft functions

Data displays

Engine performance and tank level displays ..... See section 4-2

Troll control

Automatically maintains a set engine idle RPM or idle boat speed ..... See section 4-3

Trim indicator

Displays the trim angle when engine trim is adjusted ..... See section 4-4

Alarms

Engine fault alarms ..... See section 4-5
Engine fault list, a list of active SmartCraft engine fault alarms ..... See section 4-6
Engine fault history, a list of past SmartCraft engine fault alarms ..... See section 4-6
Tank low level alarms ..... See section 4-2-1

Setup data and calibrations

SmartCraft setup data ..... See sections 4-1 and 4-2
SmartCraft calibrations, Tanks, Trim and Steering angle ..... See section 4-7
SmartCraft setup data and calibrations ..... See sections 4-7 and 4-1

The SmartCraft data available depends on the engine type and the sensors fitted (see section 1-1).

Changes to standard functions with SmartCraft enabled:

- MENU **key**: When using troll control, pressing MENU can display the troll window. Press MENU a second time to display the normal menu.
- **Fuel**: The fuel display functions normally but with fuel and speed data coming from the SmartCraft system rather than from separate sensors connected to the TRACKFISH 6600.

  If there are no optional level sensor(s) fitted to the fuel tanks (see section 1-1-1), then the Smartcraft fuel flow is used to calculate fuel remaining. The fuel setup data is the same as the standard TRACKFISH 6600. You must tell the TRACKFISH 6600 when you add or remove fuel (see the *TRACKFISH 6600 Installation and Operation* manual).

  If each fuel tank has an optional level sensor fitted (see section 1-1-1), then these tank levels are used to calculate fuel remaining. In the Fuel display, `Used` changes to `Trip used`, and the only fuel setup option is `Clear trip used`. `Trip used` measures the volume of fuel used until it is reset to zero by selecting `Clear trip used` in the fuel setup menu. You do not tell the TRACKFISH 6600 when you add or remove fuel.
- **Engine hours**: Engine hours on the Log display come from the SmartCraft system. It can not be reset.
- **Simulate mode**: Data from the SmartCraft engine(s) and sensors is simulated. The SmartCraft data simulated will probably differ from the data available in your system.

For more information, see the *TRACKFISH 6600 Installation and Operation* manual.

4-1 Setting up the TRACKFISH 6600 for Smartcraft

There are two SmartCraft items in the TRACKFISH 6600 System setup menu. To display the System menu, press MENU until the Setup menu is displayed, then select `System`.

Sonar

Select : For normal sonar operation

De-select: To disable the sonar transducer and sonar functions. For use with the instrument's SmartCraft functions only,

SmartCraft

Select: Normal SmartCraft operation

De-select: SmartCraft functions. The instrument will now use any Navman fuel sen sors which are connected.

Note:
SmartCraft utilises NavBus comms. NavBus will turn on if SmartCraft is turned on.

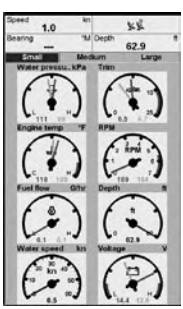
4-2 SmartCraft engine data displays

There are four SmartCraft engine displays, shown below.

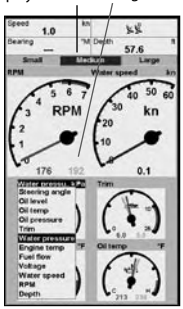
Note: If the boat has twin engines, two needles will appear on most of the gauge displays. The red needle or number shows port engine data, green shows starboard engine data.

Data header display area

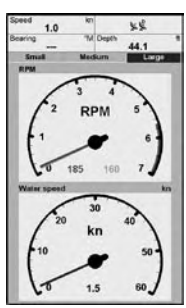
Engine data display area



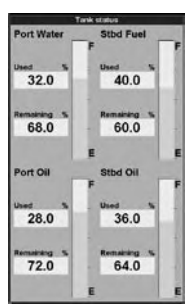
Small: Eight small gauges



Medium: Two medium, four small gauges



Large: Two large gauges



Tanks: Tank levels

Diagnostics: Shows eight small gauges. Press DISPLAY, select `SmartCraft`, then select `Diagnostics`.

Cruising: Shows two large and four small gauges. Press DISPLAY, select `SmartCraft`, then select `Cruising`.

Engine data large: Shows two large gauges. To display this, press DISPLAY, select `SmartCraft`, then select `Engine data large`.

Tank status: Shows the levels in the tanks. To display this, press DISPLAY, select `SmartCraft`, then select `Tank status`.

4-2-1 Tank status display

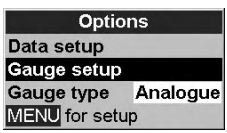
The tank level display shows the levels from the optional level sensors in one or two tanks per engine (see section 1-1-1).

Before use, each tank must be set up and calibrated (see section 4-7-1).

An alarm can be set to sound if the level in a tank is low (see section 4-7-1). These alarms are in addition to any SmartCraft engine fault low level alarms (see section 4-5).

4-2-2 Customising the engine data displays

To customise an engine data display, press DISPLAY, select `SmartCraft`, select the display to customise, and press ENTER. Press MENU to display the options:



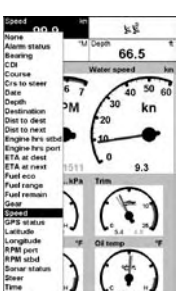
Data setup

Select the data item to be displayed in the data header display area (at the top of the display):

1 Press ▲, ▼, ◀ or ▶ to select the data item to change.

2 Select the item by pressing ENTER. this will display a menu of options for the selected item (the options available will depend on your engine, see section 1-1).

Press ▲ or ▼ to select an option, then press ENTER.



3 Repeat steps 1 and 2 to change more data items, then press ESC to return to the main display.

Gauge setup

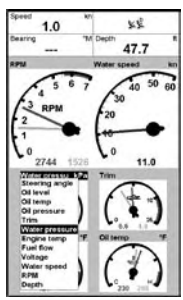
Select the data to be displayed in the engine data display areas (not for Tank status display).

1 Press ▲, ▼, ◀ or ▶ to select a gauge to change.

2 Change the gauge:

i Press ENTER to display a menu of options for the selected gauge (see right; the options available will depend on your engine, see section 1-1).

ii Press ▲ or ▼ to select an option, then press ENTER.



3 Repeat steps 1 to 2 to change more gauges, then press ESC to return to the main display.

Gauge type

Select the type of gauges to be displayed (not for Tank status display):

`Analogue`: Dial type displays (see also section 4-7: Speed range).

`Digital`: Number type displays.

Notes:

1 The factory default has gauges appropriate to the type of engine.

2 To further customise the three gauge displays, change `Speed range`, `Speed type` and `Pitot type` (see section 4-7).

4-3 Troll control

Troll control allows adjustment of the engine's idle speed from the Navman instrument. Troll control automatically controls the engine idle speed to maintain a set engine RPM or boat speed.

To use troll control, set Troll window to `On idle` or `Always` and set Troll mode to `Speed` or `RPM` (see section 4-7).

To use speed troll mode, set `Speed type` to Paddle (see section 4-7).

To prohibit troll control, set `Troll window` to `Never` (see section 4-7).

Engaging troll control

1 Set the throttle(s) to idle and the engine(s) in gear. From a main display, press MENU to display the Troll control window (see right).

2 Press ▲ or ▼ to set the desired RPM or boat speed (see notes 1 and 2).

3 Press ENTER to engage troll control. The TRACKFISH 6600 automatically controls RPM or speed. Or, press ESC to leave troll control disengaged.

Changing RPM or speed while troll control engaged

1 From a main display, press MENU to display the troll window.

2 Press ▲ or ▼ to change the desired RPM or boat speed (see notes 1 and 2).

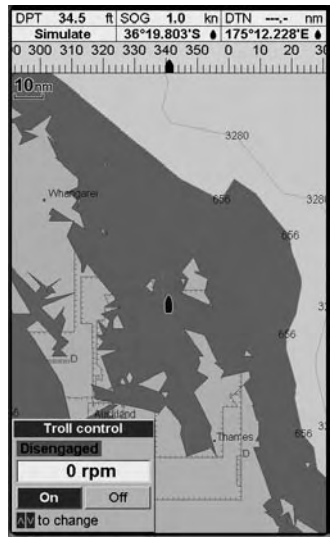
3 Press ESC

Disengaging troll control

Either move the throttle from idle, or:

1 From a main display, press MENU to display the troll window. Press ◀ or ▶ to select Off (Disengage) and press ENTER

2 Or, press ESC to leave troll control engaged.



Notes:

1 The Troll range of engine idle RPM adjustment available for both RPM and speed mode depends on engine type. Generally this is between 600 and 1000 RPM.

2 In speed troll control, the boat might not reach the desired speed if the maximum RPM available for troll control is too low or if conditions are bad.

3 Troll can not engage unless engine throttle(s) are in idle, and engine(s) are in gear.

4 Troll control is not available on some MerCrusier™ engines.

5 To use speed troll control, the Navman instrument must have a Navman paddlewheel speed sensor connected.

4-4 Trim indicator

When the optional engine trim is adjusted, a trim popup window can show the new trim angle. To see this window or not, set Trim popup to `On` or `Off` (see section 4-7: Trim). The window will automatically disappear after two seconds, or else press ESC to close the window.

Before use, calibrate trim (see section 4-7: Trim).

4-5 Engine fault alarms

There are many SmartCraft engine fault alarms. These alarms operate just like the other alarms in the Navman instrument; when the alarm sounds, press ESC to mute the alarm:

Low reserve oil.

Low remote oil.

RPM over speed.

Low oil pressure.

High engine voltage.

Low engine voltage.

A Navman instrument's low battery alarm measures the voltage at the instrument; the above two alarms measure the voltage at the engine.

Low block (water) pressure.

Engine overheat.

Low drive lube: (MerCrusier stern drive only).

Water in fuel.

Engine Guardian™ active: The Engine Guardian has detected a fault. The fault is displayed with the alarm.

Engine communication lost: The Navman instrument can not receive engine data from the SmartCraft gateway.

Check engine: There are many other engine fault alarms. When one of these alarms sounds, the alarm **Check engine** is displayed. For more information about the alarm, display the list of active alarms or the alarm history (see section 4-6).

Notes:

1 For help when an SmartCraft alarm occurs, contact your Mercury dealer.

2 These SmartCraft alarms are always on. The alarm values are determined by the engine type.

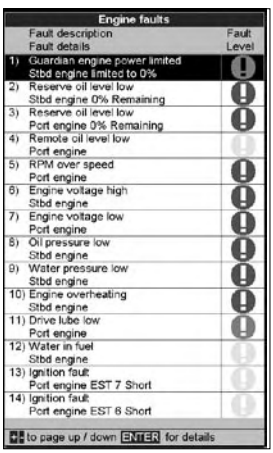
3 A list of active faults and a fault history can be displayed (see section 4-6).

4-6 Engine fault lists

There are two lists of SmartCraft engine faults:

4-6-1 Engine faults list

To display a list of active engine fault alarms: press DISPLAY, select `SmartCraft`, then select `Engine faults`.



When the faults list is displayed

- Press + or − to page up and down the list.
- To display more information about a particular fault:
  - i Press ▲ or ▼ to select the fault.
  - ii Press ENTER to display the information.
  - iii Press ENTER or ESC to return to the list.
- To exit the list, press ESC.

Each engine fault has a priority:

- Red: Critical
- Orange: Severe
- Yellow: Warning
- Black: Caution
- Information

4-6-2 Engine fault history

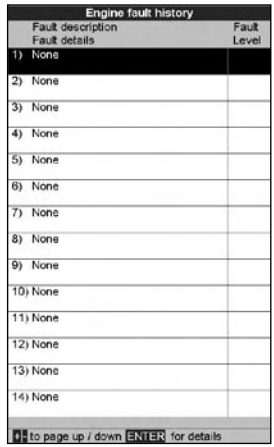
To display a list of recent engine fault alarms, press DISPLAY, select `SmartCraft`, then select `Engine fault history`.

When the Engine fault history is displayed

- Press + or − to page up and down the list.
- To display more information about a particular fault:
  - i Press ▲ or ▼ to select the fault.
  - ii Press ENTER to display the information.
  - iii Press ENTER or ESC to return to the list.
- To exit the list, press ESC.

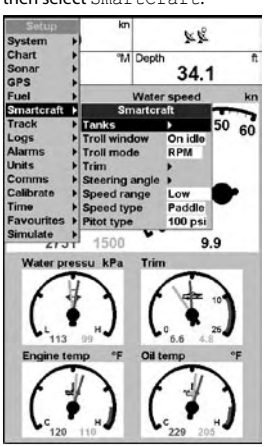
To clear the engine fault history:

Go to the engine fault history display, press MENU and select `Reset fault history`.



4-7 SmartCraft setup data and calibrations

To go to the SmartCraft setup data and calibrations, press MENU until the Setup menu is displayed, then select `SmartCraft`.



Note:

If there is more than one SmartCraft capable Navman instrument in a system, some setup data may be different in each instrument.

The setup and calibration options are:

Tanks

Set up and calibrate the tanks (see section 4-7-1).

Troll window

Select from a menu:

`On idle`: Troll window is displayed when you press MENU and the throttle is at idle and the engine is in gear.

`Always`: Troll window is displayed when you press MENU.

`Never`: Troll window never displayed, troll control is not available.

Troll mode

Select what troll mode controls:

`RPM`: Controls engine idle RPM.

`Speed`: Controls engine idle RPM to try to achieve the desired boat speed.

See section 4-3, notes 1 and 2

Trim

Set up and calibrate the trim display (see section 4-7-2).

Steering angle
Set up and calibrate the steering angle (see section 4-7-3).

Speed range
Set the speed range for an analog speed gauge. The options are `High`, `Medium` and `Low`. A higher range displays a higher maximum speed but the display is more compressed.

Speed type
Select the source of the water (boat) speed reading:

`Pitot`: The engine's pitot sensor.

`Paddle`: A Navman paddlewheel sensor.

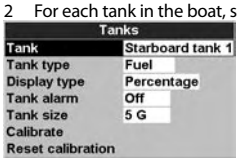
The pitot sensor is more accurate at high speeds but is not accurate at low speeds. The paddlewheel sensor is more accurate at low speeds. To use troll speed control, set `Speed type` to `Paddle`.

Pitot type
Press ▶ to select `100 psi` or `200psi` to match the pitot type installed on the boat.

4-7-1 Tanks setup and calibration
Set up and calibrate tanks with level sensors fitted (see section 1-1-1):

1 Press MENU until the Setup menu is displayed, select `SmartCraft`, then select `Tanks`.

2 For each tank in the boat, select `Tank`, select



the tank to set up, then set up and calibrate the tank.

Note:

The displayed Tank size unit uses the setting selected in the Navman instrument. To change to a different unit type, use the Setup > Units menu in the Navman instrument.

For each tank, the options are:

Tank type
Select the tank type (`Unused`, `Fuel`, `Water`, `Oil` or `Waste`).

Display type
The data from the level sensor in each tank is the depth in the tank as a percentage of the depth when the tank is full. If the sides of the tank are not vertical and straight, or if the tank top and bottom are not flat, then the level sensor data does not correspond to the volume in the tank; for example if the sensor shows 50 %, the tank is not 50 % full.

The `Display type` option selects how the level sensor data is displayed:

`Percentage`: Display the percentage level sensor data. The default is the percentage level sensor data. If the tank is calibrated, then a calibrated percentage is displayed.

`Volume`: Display a volume calculated from the sensor data. The default is a linear calculation, for example if the tank holds 500 G and the sensor shows 50 % of full, then 250 G is displayed. This is correct if the sides of the tank are vertical and straight and the tank top and bottom are flat. If this is not so, calibrate the tank (see `Calibrate` below).

Tank size
Set the tank size:

i Set the tank size: press ◀ or ▶ to select a digit, then press ▲ or ▼ to change the digit.

ii Press ENTER.

Tank alarm
To set a low level alarm for the tank:

i Set the alarm value: press ◀ or ▶ to select a digit, then press ▲ or ▼ to change the digit. To turn the alarm off, set the alarm value to 0. If the alarm value is greater than zero, the alarm will sound if the tank level is less than the alarm value.

ii Press ENTER.

Calibrate
Calibrate the tank readings if the sides of the tank are not vertical and straight, or if the tank top and bottom are not flat. The following procedure requires the tank to be filled from empty. The

Tank Calibration screen will display an amount of fuel to add to the tank - select OK each time the measured amount is added. This will happen a number of times.

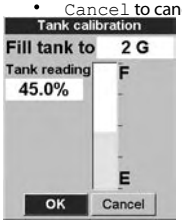
i Enter the tank size (volume).

ii Follow the on-screen instructions displayed to add measured amounts of fuel. Select OK each time the measured amount is added.

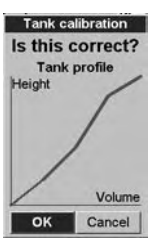
iii The display shows Tank calibration – Tank profile and asks Is this correct?.

Select:

- OK to accept the calibration
- Cancel to cancel.



iv. If the actual tank size did not match that in step (i), then change the tank size from the menu.



Reset calibration

Reset the tank calibration to the default - the displayed volume is calculated linearly from the sensor data (see Display type above). Any tank calibration data will be lost.

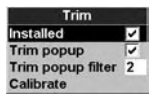
4-7-2 Trim setup and calibration

Set up and calibrate a SmartCraft trim control (see section 4-4). Press MENU until the Setup menu is displayed, then select SmartCraft, then select Trim. The options are:

Installed

Select : Trim sensors are installed in the engine(s).

De-select: No trim sensors installed in the engine(s).



Trim popup

Select : Trim sensors are installed in the engine(s).

De-select: Trim popup window is never displayed.

Trim popup filter

This filter can stop the trim popup window appearing because of engine vibration rather than a trim change.

Press ENTER, then press ▲ or ▼ to select a value, then press ENTER. The values are Off and 1 to 5.

Select Off or a low value first. Run the boat at a range of speeds and increase the value if vibration causes the trim popup window to appear. If the value is high, the trim window will appear slowly when trim changes.

Calibrate

Follow the on-screen instructions displayed to calibrate the displayed trim angle, and press ENTER as required.

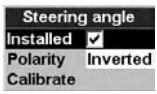
4-7-3 Steering angle setup and calibration

Set up and calibrate the SmartCraft steering angle display. Press MENU until the Setup menu is displayed, then select `SmartCraft`, then select `Steering angle`. The options are:

Installed

Select: Steering angle sensor installed.

De-select: No steering angle sensor installed.



Polarity

Steer the boat to port. If the steering angle pointer does not move to port, choose the other polarity (`Normal` or `Inverted`).

Calibrate

1 There must be little wind and little current. Travel at a typical cruising speed.

2 Steer in a straight line, then select `Calibrate` to calibrate the steering angle.

3 Press enter when steering in a straight line.

5 Operation with a Navman FISH 4600

Before a SmartCraft gateway is connected, the FISH 4600 functions normally, with no SmartCraft functions. When a SmartCraft gateway is connected and `SmartCraft` is turned `On` (see section 5-1), SmartCraft functions become available and some standard functions change.

SmartCraft functions

Data displays

Engine performance and tank level displays ..... See section 5-2

Troll control

Automatically maintains a set engine idle RPM or idle boat speed ..... See section 5-3

Trim indicator

Displays the trim angle when engine trim is adjusted ..... See section 5-4

Alarms

SmartCraft engine fault alarms ..... See section 5-5
Engine fault list, a list of active SmartCraft engine fault alarms ..... See section 5-6
Engine fault history, a list of past SmartCraft engine fault alarms ..... See section 5-6
Tank low level alarms ..... See section 5-2-1

Setup data and calibrations

SmartCraft setup data ..... See sections 5-6 and 5-8
SmartCraft calibrations, Tanks, Trim and Steering angle ..... See section 5-7
SmartCraft setup data and calibrations ..... See sections 5-7 and 5-1

The SmartCraft data available depends on the engine type and the sensors fitted (see section 1-1).

Changes to standard functions with SmartCraft enabled:

- MENU **key**: When using troll control, pressing MENU can display the troll window. Press MENU a second time to display the normal menu.
- **Fuel**: The fuel display functions normally but with fuel and speed data coming from the SmartCraft system rather than from separate sensors connected to the FISH 4600.

  If there are no optional level sensor(s) fitted to the fuel tanks (see section 1-1-1), then the Smartcraft fuel flow is used to calculate fuel remaining. The fuel setup data is the same as the standard FISH 4600. You must tell the FISH 4600 when you add or remove fuel (see the *FISH 4500/4600 Installation and Operation* manual).

  If each fuel tank has an optional level sensor fitted (see section 1-1-1), then these tank levels are used to calculate fuel remaining. In the Fuel display, `Used` changes to `Trip used`, and the only fuel setup option is `Clear trip used`. `Trip used` measures the volume of fuel used until it is reset to zero by selecting `Clear trip used` in the fuel setup menu. You do not tell the FISH 4600 when you add or remove fuel.
- **Engine hours**: Engine hours on the Log display come from the SmartCraft system. It can not be reset.
- **Simulate mode**: Data from the SmartCraft engine(s) and sensors is simulated. The SmartCraft data simulated will probably differ from the data available in your system.

For more information, see the *FISH 4500/4600 Installation and Operation* manual.

5-1 Setting up the FISH 4600 for Smartcraft

There are two SmartCraft items in the FISH 4600 System setup menu. To display the System menu, press MENU until the Setup menu is displayed, then select `System`.

Sonar

Select : For normal sonar operation

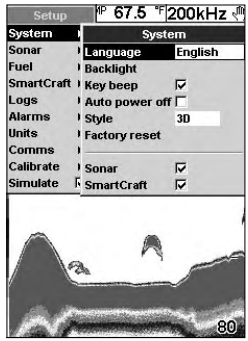
De-select: To disable the sonar transducer and sonar functions. For use with the instrument's SmartCraft functions only,

SmartCraft

Select: Normal SmartCraft operation

De-select: SmartCraft functions. The instrument will now use any Navman fuel sensors which are connected.

Note:
SmartCraft utilises NavBus comms. NavBus will turn on if SmartCraft is turned on.



5-2 SmartCraft engine data displays

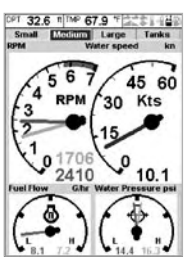
There are four SmartCraft engine displays, shown below.

Note: If the boat has twin engines, two needles will appear on most of the gauge displays. The red needle or number shows port engine data, green shows starboard engine data.

Engine data display area

Small: Eight small gauges

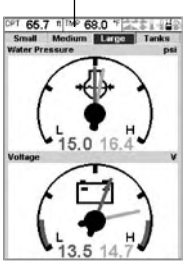
Shows eight small gauges. Press DISP, select `SmartCraft`, then select `Small`.



Medium: Two medium, four small gauges

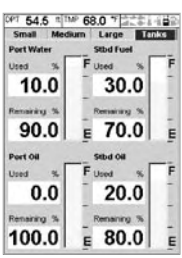
Shows two large and four small gauges. Press DISP, select `SmartCraft`, then select `Medium`.

Data header display area



Large: Two large gauges

Shows two large gauges. To display this, press DISP, select `SmartCraft`, then select `Large`.



Tanks: Tank levels

Shows the levels in the tanks. To display this, press DISP, select `SmartCraft`, then select `Tanks`.

5-2-1 Tank status display

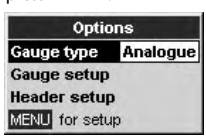
The tank level display shows the levels from the optional level sensors in one or two tanks per engine (see section 1-1-1).

Before use, each tank must be set up and calibrated (see section 5-7-1).

An alarm can be set to sound if the level in a tank is low (see section 5-7-1). These alarms are in addition to any SmartCraft engine fault low level alarms (see section 5-5).

5-2-2 Customising the engine data displays

To customise an engine data display, press DISP, select `SmartCraft`, select the display to customise. Press MENU to display the available options; Gauge type, Gauge setup, and Header setup, then press ENT.



Gauge type

Select the type of gauges to be displayed (not for Tank status display):

`Analogue`: Dial type displays (see also section 5-7: Speed range).

`Digital`: Number type displays.

Notes:

1 The factory default has gauges appropriate to the type of engine.

2 To further customise the three gauge displays, change `Speed range`, `Speed type` and `Pitot type` (see section 5-7)

Gauge setup

Select the data to be displayed in the engine data display areas (not for Tank status display).

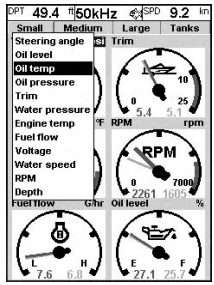
1 Press ▲, ▼, ◀ or ▶ to select a gauge to change.

2 Change the gauge:

i Press ENT to display a menu of options for the selected gauge (see above; the options available will depend on your engine, see section 1-1).

ii Press ▲ or ▼ to select an option, then press ENT.

3 Repeat steps 1 to 2 to change more gauges, then press ENT to return to the main display.



Header setup

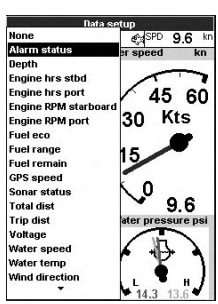
Select the data item to be displayed in the data header display area (at the top of the display):

1 Press ▲, ▼, ◀ or ▶ to select the data item to change.

2 Select the item by pressing ENT. this will display a menu of options for the selected item (the options available will depend on your engine, see section 1-1).

Press ▲ or ▼ to select an option, then press ENT.

3 Repeat steps 1 and 2 to change more data items, then press ESC to return to the main display.



5-3 Troll control

Troll control allows adjustment of the engine's idle speed from the Navman instrument. Troll control automatically controls the engine idle speed to maintain a set engine RPM or boat speed.

To use troll control, set Troll window to `On idle` or `Always` and set Troll mode to `Speed` or `RPM` (see section 5-7).

To use speed troll mode, set `Speed type` to Paddle (see section 5-7).

To prohibit troll control, set `Troll window` to `Never` (see section 5-7).

Engaging troll control

1 Set the throttle(s) to idle and the engine(s) in gear. From a main display, press MENU to display the Troll control window (see right).

2 Press ^ or v to set the desired RPM or boat speed (see notes 1 and 2).

3 Press ENT to engage troll control. The FISH 4600 automatically controls RPM or speed. Or, press ESC to leave troll control disengaged.

Changing RPM or speed while troll control engaged

1 From a main display, press MENU to display the troll window.

2 Press ^ or v to change the desired RPM or boat speed (see notes 1 and 2).

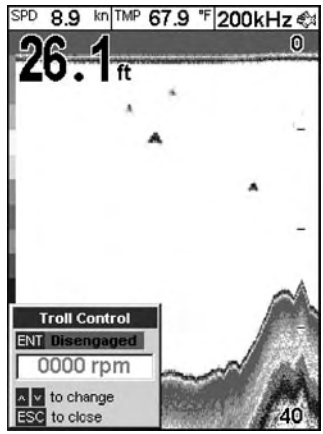
3 Press ESC

Disengaging troll control

Either move the throttle from idle, or:

1 From a main display, press MENU to display the troll window. Press < or > to select Off (Disengage) and press ENT

2 Or, press ESC to leave troll control engaged.



Notes:

1 The Troll range of engine idle RPM adjustment available for both RPM and speed mode depends on engine type. Generally this is between 600 and 1000 RPM.

2 In speed troll control, the boat might not reach the desired speed if the maximum RPM available for troll control is too low or if conditions are bad.

3 Troll can not engage unless engine throttle(s) are in idle, and engine(s) are in gear.

4 Troll control is not available on some MerCrusier™ engines.

5 To use speed troll control, the Navman instrument must have a Navman paddlewheel speed sensor connected.

5-4 Trim indicator

When the optional engine trim is adjusted, a trim popup window can show the new trim angle. To see this window or not, set Trim popup to `On` or `Off` (see section 5-7: Trim). The window will automatically disappear after two seconds, or else press ESC to close the window.

Before use, calibrate trim (see section 5-7: Trim).

5-5 Engine fault alarms

There are many SmartCraft engine fault alarms. These alarms operate just like the other alarms in the Navman instrument; when the alarm sounds, press ESC to mute the alarm:

Low reserve oil.

Low remote oil.

RPM over speed.

Low oil pressure.

High engine voltage.

Low engine voltage.

A Navman instrument's low battery alarm measures the voltage at the instrument; the above two alarms measure the voltage at the engine.

Low block (water) pressure.

Engine overheat.

Low drive lube (MerCrusier stern drive only).

Water in fuel.

Engine Guardian™ active: The Engine Guardian has detected a fault. The fault is displayed with the alarm.

Engine communication lost: The Navman instrument can not receive engine data from the SmartCraft gateway.

Check engine: There are many other engine fault alarms. When one of these alarms sounds, the alarm **Check engine** is displayed. For more information about the alarm, display the list of active alarms or the alarm history (see section 5-6).

Notes:

1 For help when an SmartCraft alarm occurs, contact your Mercury dealer.

2 These SmartCraft alarms are always on. The alarm values are determined by the engine type.

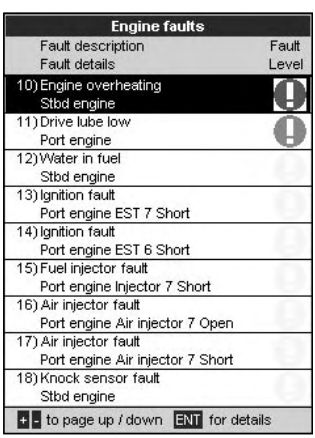
3 A list of active faults and a fault history can be displayed (see section 5-6).

5-6 Engine fault lists

There are two lists of SmartCraft engine faults:

5-6-1 Engine faults list

To display a list of active engine fault alarms: press DISP, select `SmartCraft`, then select `Engine faults`.



When the faults list is displayed

- Press + or - to page up and down the list.
- To display more information about a particular fault:
  - i Press ^ or v to select the fault.
  - ii Press ENT to display the information.
  - iii Press ENT or ESC to return to the list.
- To exit the list, press ESC.

Each engine fault has a priority:

- Red: Critical
- Orange: Severe
- Yellow: Warning
- Black: Caution
- Information

5-6-2 Engine fault history

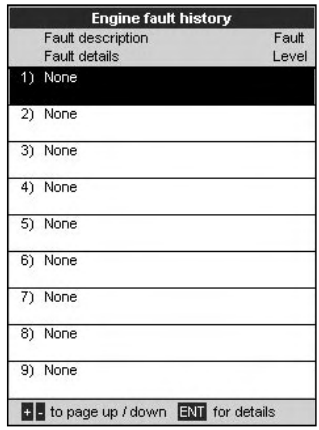
To display a list of recent engine fault alarms, press DISPLAY, select `SmartCraft`, then select `Engine fault history`.

When the Engine fault history is displayed

- Press + or − to page up and down the list.
- To display more information about a particular fault:
  - i Press ▲ or ▼ to select the fault.
  - ii Press ENT to display the information.
  - iii Press ENT or ESC to return to the list.
- To exit the list, press ESC.

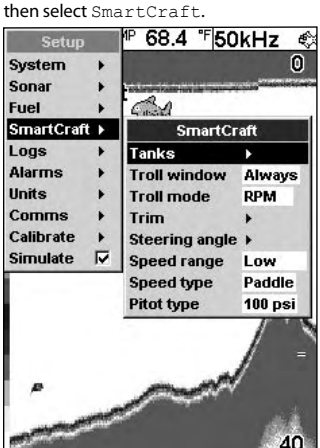
To clear the engine fault history:

Go to the engine fault history display, press MENU and select `Reset fault history`.



5-7 SmartCraft setup data and calibrations

To go to the SmartCraft setup data and calibrations, press MENU until the Setup menu is displayed, then select `SmartCraft`.



Note:

If there is more than one SmartCraft capable Navman instrument in a system, some setup data may be different in each instrument.

The setup and calibration options are:

Tanks

Set up and calibrate the tanks (see section 5-7-1).

Troll window

Select from a menu:

`On idle`: Troll window is displayed when you press MENU and the throttle is at idle and the engine is in gear.

`Always`: Troll window is displayed when you press MENU.

`Never`: Troll window never displayed, troll control is not available.

Troll mode

Select what troll mode controls:

`RPM`: Controls engine idle RPM.

`Speed`: Controls engine idle RPM to try to achieve the desired boat speed.

See section 5-3, notes 1 and 2

Trim

Set up and calibrate the trim display (see section 5-7-2).

Steering angle
Set up and calibrate the steering angle (see section 5-7-3).

Speed range
Set the speed range for an analog speed gauge. The options are `High`, `Medium` and `Low`. A higher range displays a higher maximum speed but the display is more compressed.

Speed type
Select the source of the water (boat) speed reading:

`Pitot`: The engine's pitot sensor.

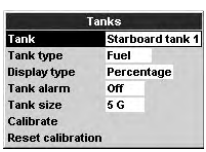
`Paddle`: A Navman paddlewheel sensor.

The pitot sensor is more accurate at high speeds but is not accurate at low speeds. The paddlewheel sensor is more accurate at low speeds. To use troll speed control, set `Speed type` to `Paddle`.

Pitot type
Press ▶ to select `100 psi` or `200psi` to match the pitot type installed on the boat.

5-7-1 Tanks setup and calibration
Set up and calibrate tanks with level sensors fitted (see section 1-1-1):

1 Press MENU until the Setup menu is displayed, select `SmartCraft`, then select `Tanks`.



2 For each tank in the boat, select `Tank`, select the tank to set up, then set up and calibrate the tank.

Note:

The displayed Tank size unit uses the setting selected in the Navman instrument. To change to a different unit type, use the Setup > Units menu in the Navman instrument.

For each tank, the options are:

Tank type
Select the tank type (`Unused`, `Fuel`, `Water`, `Oil` or `Waste`).

Display type
The data from the level sensor in each tank is the depth in the tank as a percentage of the depth when the tank is full. If the sides of the tank are not vertical and straight, or if the tank top and bottom are not flat, then the level sensor data does not correspond to the volume in the tank; for example if the sensor shows 50 %, the tank is not 50 % full.

The `Display type` option selects how the level sensor data is displayed:

`Percentage`: Display the percentage level sensor data. The default is the percentage level sensor data. If the tank is calibrated, then a calibrated percentage is displayed.

`Volume`: Display a volume calculated from the sensor data. The default is a linear calculation, for example if the tank holds 500 G and the sensor shows 50 % of full, then 250 G is displayed. This is correct if the sides of the tank are vertical and straight and the tank top and bottom are flat. If this is not so, calibrate the tank (see `Calibrate` below).

Tank size
Set the tank size:

i Set the tank size: press ◀ or ▶ to select a digit, then press ▲ or ▼ to change the digit.

ii Press ENT.

Tank alarm
To set a low level alarm for the tank:

i Set the alarm value: press ◀ or ▶ to select a digit, then press ▲ or ▼ to change the digit. To turn the alarm off, set the alarm value to 0. If the alarm value is greater than zero, the alarm will sound if the tank level is less than the alarm value.

ii Press ENT.

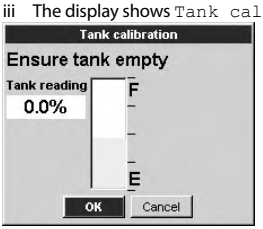
Calibrate

Calibrate the tank readings if the sides of the tank are not vertical and straight, or if the tank top and bottom are not flat. The following procedure requires the tank to be filled from empty. The Tank Calibration screen will display an amount of fuel to add to the tank - select `OK` each time the measured amount is added. This will happen a number of times.

i Enter the tank size (volume).

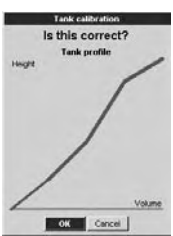
ii Follow the on-screen instructions displayed to add measured amounts of fuel. Select `OK` each time the measured amount is added.

iii The display shows `Tank calibration`



– `Tank profile` and asks `Is this correct?`.

Select:



- `OK` to accept the calibration
- `Cancel` to cancel.

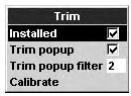
iv. If the actual tank size did not match that in step (i), then change the tank size from the menu.

Reset calibration

Reset the tank calibration to the default - the displayed volume is calculated linearly from the sensor data (see Display type above). Any tank calibration data will be lost.

5-7-2 Trim setup and calibration

Set up and calibrate a SmartCraft trim control (see section 5-4). Press MENU until the Setup menu is displayed, then select `SmartCraft`, then select `Trim`. The options are:



Installed

Select : Trim sensors are installed in the engine(s).

De-select: No trim sensors installed in the engine(s).

Trim popup

Select : Trim sensors are installed in the engine(s).

De-select: Trim popup window is never displayed.

Trim popup filter

This filter can stop the trim popup window appearing because of engine vibration rather than a trim change.

Press ENT, then press ▲ or ▼ to select a value, then press ENT. The values are `Off` and `1` to `5`.

Select `Off` or a low value first. Run the boat at a range of speeds and increase the value if vibration causes the trim popup window to appear. If the value is high, the trim window will appear slowly when trim changes.

Calibrate

Follow the on-screen instructions displayed to calibrate the displayed trim angle, and press ENT as required.

5-7-3 Steering angle setup and calibration

Set up and calibrate the SmartCraft steering angle display. Press MENU until the Setup menu is displayed, then select `SmartCraft`, then select `Steering angle`. The options are:

Installed

Select : Steering angle sensor installed.

De-select: No steering angle sensor installed.

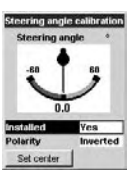
Polarity

Steer the boat to port. If the steering angle pointer does not move to port, choose the other polarity (`Normal` or `Inverted`).

Calibrate

1 There must be little wind and little current. Travel at a typical cruising speed.

2 Steer in a straight line, then select `Calibrate` to calibrate the steering angle.



3 Press enter when steering in a straight line.

Appendix A - Specifications

Physical

- Size 130 x 62 x 26 mm (5.1 x 2.4 x 1.0 in).
- Operating temperature 0 to 50°C (32 to 122°F).
- Built-in cable to the Navman instrument, 1 m (3.3 ft) long.
- Built-in cable to SmartCraft and engine, 300 mm (1 ft) long.

Electrical

- Power supply 9.0 to 30 V DC, 50 mA.

Interfaces

- NavBus connection to Navman instruments.
- CAN bus connection to SmartCraft system.

Standards compliance

- **EMC compliance**

  USA (FCC): Part 15 Class B.

  Europe (CE): EN50081-1,EN50082-1, EN55024, EN55022, ISO7637-1.

  New Zealand and Australia (C Tick) : AS-NZS 3548.

Cable to Navman instrument

Wire	Signal
Red	Power positive, 9 to 30 V DC, 50 mA
Black	Power negative
Brown	Power positive from instrument
Orange	NavBus +
Blue	NavBus -
Green	No connection
Yellow	No connection
White	No Connection

Appendix B - Troubleshooting

1 No SmartCraft functions available or SmartCraft data is zero or is not displayed

a Boat engine key is off.

b Review installation; check the gateway LEDs are working (see section 2)

c SmartCraft is disabled in the Navman Instrument. See Setup > System menu.

2 Some SmartCraft data is not available:

The data available depends on engine type (see section 1-1).

3 Can not start troll control:

a Some MerCruiser engines do not support troll control.

b Set engine to idle and in gear (see section Troll Control).

c Set `Speed type` to `Paddle` (see section Troll Control).

d To use speed troll control, the Navman instrument must have a Navman paddlewheel speed sensor connected.

4 Trim window is slow to appear, or appears when trim does not change:

Change the trim filter (see sectionTrim Setup and Calibration).

Appendix C - Mercury SmartCraft accessories

		
859318T1 Termination resistor	**892452A01** Smartcraft cable adaptor (male/male)	**892453A01** SmartCraft cable adaptor (female/female)
		
8784924 SmartCraft junction box – 4 way	**8784926** SmartCraft junction box – 6 way	**8784928** SmartCraft junction box – 8 way
		
879968T (6, 10, 15, 20, 30) SmartCraft wiring harness	**879981T** (10,15, 20, 30) SmartCraft wiring harness with 1 terminator	**879982T** (20, 30) SmartCraft wiring harness with 2 terminators
		
859743T2 SmartCraft accessory harness (fuel/oil)	**859318T2** SmartCraft weather cap	

Appendix D How to contact us www.navman.com

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