



**THE HESTIA COURSE INDICATOR  
AND "OFF-COURSE" ALARM  
BROOKES & GATEHOUSE LTD.**

**HESTIA has been developed to meet a long-felt requirement in ocean racing and cruising yachts, and in power boats, for a steering indicator which provides an improved display over the conventional compass, enabling the helmsman to steer a straighter course with less fatigue.**

The indicator is a meter of 4 in. (10 cm.) or 2½ in. (6.3 cm.) diameter with a long pointer which is mounted vertically, close to the helmsman's line of sight. Having set a control knob on the master compass unit of HESTIA to the required course angle, his task is simply to keep the pointer vertical, against a bold "lubber-line". If the ship wanders off to port, for example, the pointer will move to the left and the helmsman will apply starboard helm to correct the error. The angle through which the pointer moves for a given change in heading is adjustable at the control unit, two degrees of sensitivity being available. The best setting is chosen to suit the existing sea and wind conditions. When the ROUGH setting is selected the limits of the scale of the indicator are 40°-0-40°, and at CALM they are 20°-0-20°.

The use of a magnified compass display with vertical presentation has the following advantages:-

1. The helmsman responds more naturally to it than to the compass card since the pointer, which is assumed to be an image of the ship, gives a more "life-like" indication of heading error.
2. The angular magnification enables smaller errors to be seen, and, what is probably more important, enables the rate at which the ship is going off course to be more readily appreciated so that it is easier to anticipate the amount of helm that will be required.
3. The course to steer does not have to be memorised.

Trials in a sailing yacht have shown that the mean steering error of helmsmen of average skill is reduced between two and three times when changing over from normal compass to HESTIA. A reduction of mean steering error from 12° to 4° effects a saving in distance run of about 2 miles in every hundred miles sailed. Improved accuracy of steering will result also in a reduction of the errors of dead reckoning. Trials in a high-speed power boat have shown that the compass remains stable even when the boat is pounding heavily. The 2½ in. meter, only, is suitable for power boats.

In a sailing yacht, HESTIA will mainly be used when sailing with the wind free, the wind direction indicators being used for close-hauled steering and running.

HESTIA is a steering aid, and is not intended to be a replacement for the normal compass which is still required as a "standard" and as a reserve in case of failure of the ship's D.C. supply.

## DESCRIPTION

HESTIA Course Indicator comprises five units:-

1. The master compass unit
  2. The control unit (containing the amplifier)
  3. The indicator (two or more indicators may be installed if desired)
  4. The "off-course" alarm control unit
  5. The loudspeaker
- } (optional extras)

### THE MASTER COMPASS UNIT

The master compass is contained in a small brass binnacle, coated in grey nylon, measuring only 4¼ in. (11 cm.) diameter × 6 in. (15 cm.) high, and weighing 4 lb. (1.8 kg.). The compass case is rotatable through 360° and the course to which it has been adjusted is indicated by means of a calibrated knob fitted to its top surface. The heading error is derived as a small voltage from a magnetic detector situated inside the compass casing. In the sailing yacht and displacement motor yacht model (Model A), as illustrated, the compass is mounted in gimbals. In the power boat model (Model B) no gimbals are fitted, and the compass is rigidly mounted. The binnacle will normally be installed below-deck within reach of the navigator or a crew-member in the cockpit. Correction for deviation is carried out as for a conventional compass, and a base-plate to which magnet containers are fixed is supplied.

*Please specify whether Model A or B is required when ordering.*

### THE CONTROL UNIT

The binnacle is connected electrically to the control unit which amplifies the small detector voltage and feeds it out to the indicator. The case is identical with that of our Hengist/Horsa wind indicators, measuring only 4¾ in. × 3⅝ in. × 2¾ in. (12 cm. × 9.2 cm. × 7.0 cm.) and weighing 1¾ lb. (0.8 kg.). This has connections also to the ship's 12v., 24v., 32v., or 36v., D.C. main, from which a current of only 0.1 amp. is drawn, and to the deck indicator(s).

*Please specify voltage when ordering.*

### THE INDICATOR

The indicator is contained in one of our standard 4 in. (10 cm.) or 2½ in. (6.3 cm.) hermetically-sealed cases, weighing 3 lb. (1.4 kg.) and ¾ lb. (0.34 kg.) respectively, and has a bold white pointer which is free to move through 45° in either direction from the central position. The pointer and lubber-line have "Betalights" fitted to them which make the indicator as effective by night as by day.

## HESTIA "OFF-COURSE" ALARM CONTROL UNIT AND LOUDSPEAKER



The "off-course" alarm system is installed in conjunction with the HESTIA course indicator. It emits a penetrating tone when the ship's head departs by more than a certain pre-determined angle from the set course. It is intended primarily for use in the following applications:-

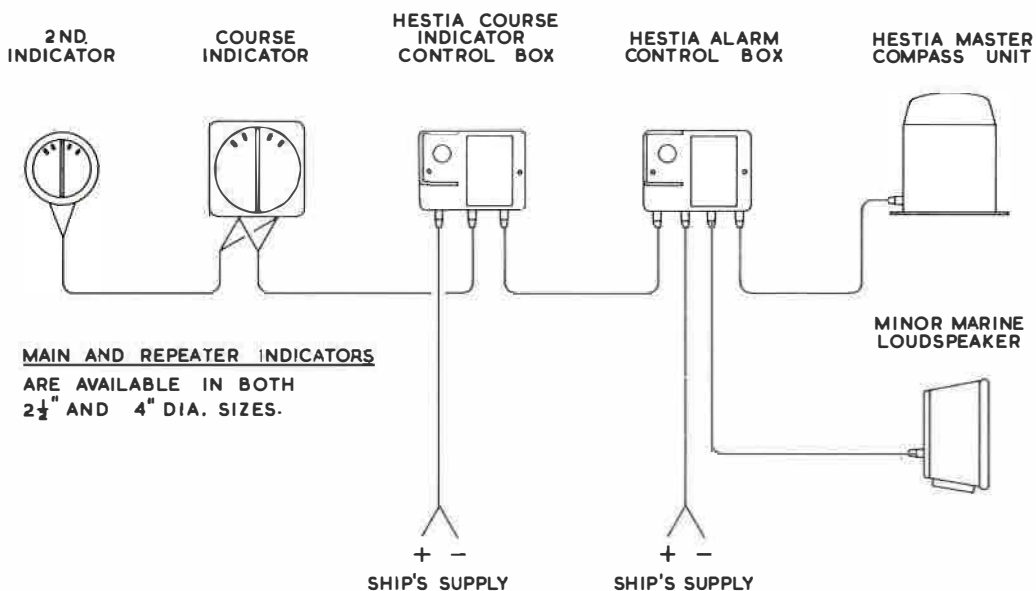
1. When the vessel is under the control of an auto-pilot, to give warning that the proper course is not being held.
2. When sailing a yacht under the control of wind-vane steering gear to call attention to wind-shifts that have caused excessive alterations of course.
3. When trawling, and the wheel is unattended, to give warning on deck that the proper course is not being held.

The equipment comprises a control unit and a spray-proof loudspeaker. Two or more loudspeakers may be installed in various parts of the ship. The control unit is housed in a grey nylon-coated case of aluminium alloy, similar to that of HESTIA, and is powered from the ship's D.C. supply. *Please quote voltage when ordering.* It draws a current of only 20 milliamps when the loudspeaker is silent.

A control knob is provided on the front of the case by means of which:-

- (a) The instrument is switched on and off.
- (b) The off-course warning angle is selected. This is the angle of departure of the ship's head from the pre-set course angle at which the alarm will begin to sound. Any one of the angles 20°, 30°, 40°, 50° and 60° may be selected. The choice of angle will depend upon the sea state and other factors.

The connections between the control unit and other units of the equipment are illustrated below. The course indicator need not be installed if the sole requirement of the equipment is to provide audible warning.



In operation, the dial of the HESTIA compass is set to the course on which the vessel is to be steered and the knob of the control unit is set to the desired warning angle. If and when the course error reaches this value, a tone of 1,000 c.p.s. is emitted by the loudspeaker(s). This tone rises in strength as the error increases.

Specification for HESTIA is shown overleaf.

**GUARANTEED FOR THREE YEARS**

**BROOKES & GATEHOUSE LTD.**

Bath Road, Lymington, Hampshire, England. Tel.: 4252/3

## SPECIFICATION

### Sizes

Compass Unit	4½ in. (11 cm.) dia. × 6 in. (15.3 cm.) high
Control Unit	4¾ in. × 3⅝ in. × 2¾ in. (12.0 × 9.2 × 7.0 cm.)
Alarm Unit	4¾ in. × 3⅝ in. × 2¾ in. (12.0 × 9.2 × 7.0 cm.)
Indicators	4 in. (10 cm.) dia.: 2½ in. (6.3 cm.) dia.
Alarm Loudspeaker	5 in. (12.7 cm.) dia × 4 in. (10 cm.)

### Weights

Compass Unit	4 lb. (1.9 kg.)
Control Unit	1¾ lb. (0.8 kg.)
Alarm Unit	1¾ lb. (0.8 kg.)
Indicators	4 in.: 3 lb. (1.4 kg.) 2½ in.: ¾ lb. (0.34 kg.)
Alarm Loudspeaker	2½ lb. (1.1 kg.)

### Accuracy (Compass)

Within ±2° over the temperature range 0°–40°C.

### Power Supply

12, 24, 32 or 36 volts D.C. nominal.

### Current Consumption

Hestia:	0.1 amp. in all models.
Alarm:	20 mA. when loudspeaker is silent.

### Safe Distance

of indicator and loudspeaker from any compass including Hestia master compass unit: 24 in. (60 cm.).

### Pan-Climatic Operation

The equipment is designed for operation in all climates and all units are proof against spray and high humidity.

### Materials and Finishes

Compass Unit:	Nylon-coated brass and anodised aluminium alloy.
Control Unit:	Nylon-coated aluminium alloy.
Indicator 4 in.:	Passivated steel case with anodised aluminium alloy bezel.
Indicator 2½ in.:	Paint-coated brass case.
Both indicators are hermetically sealed.	

