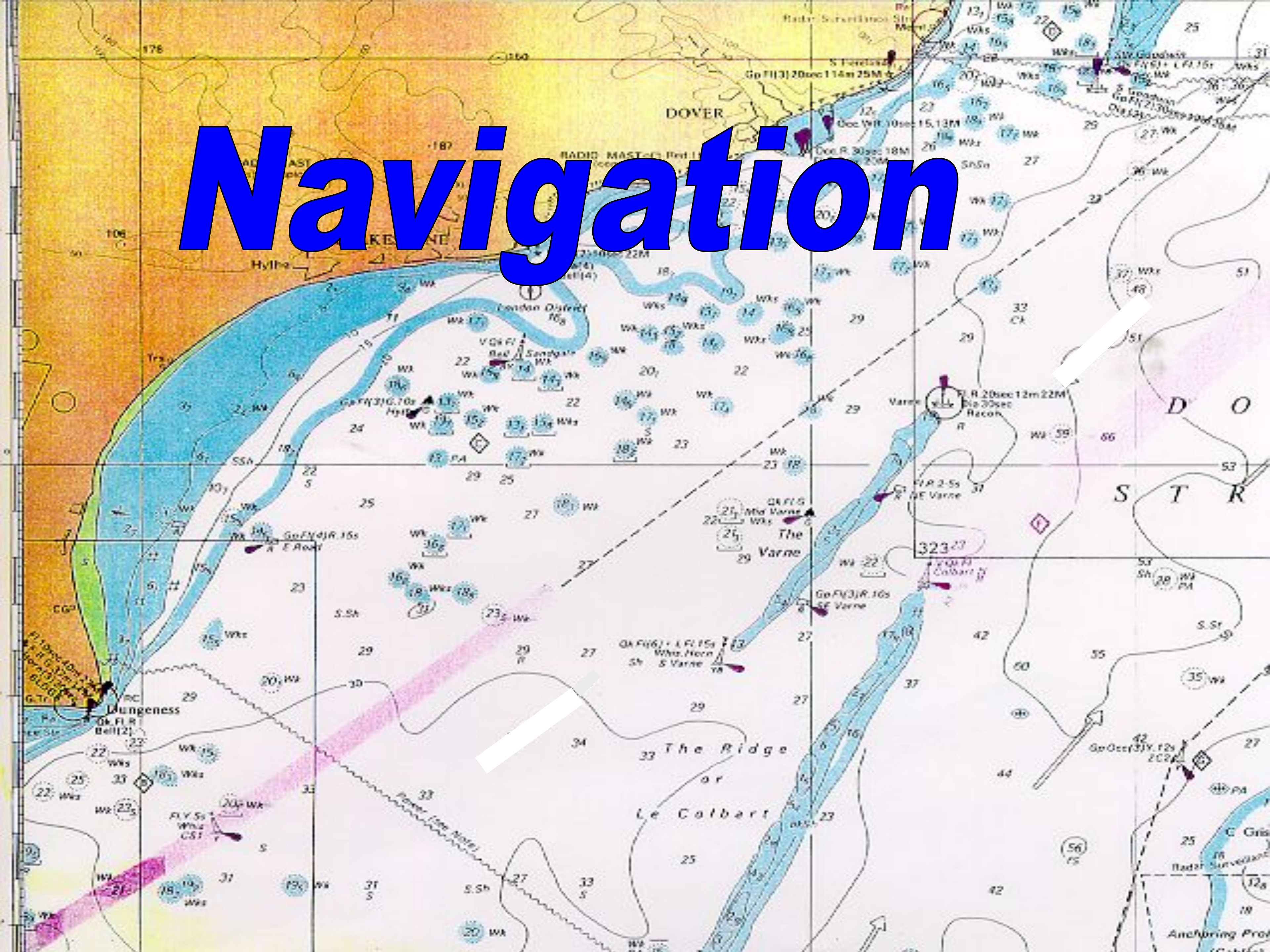
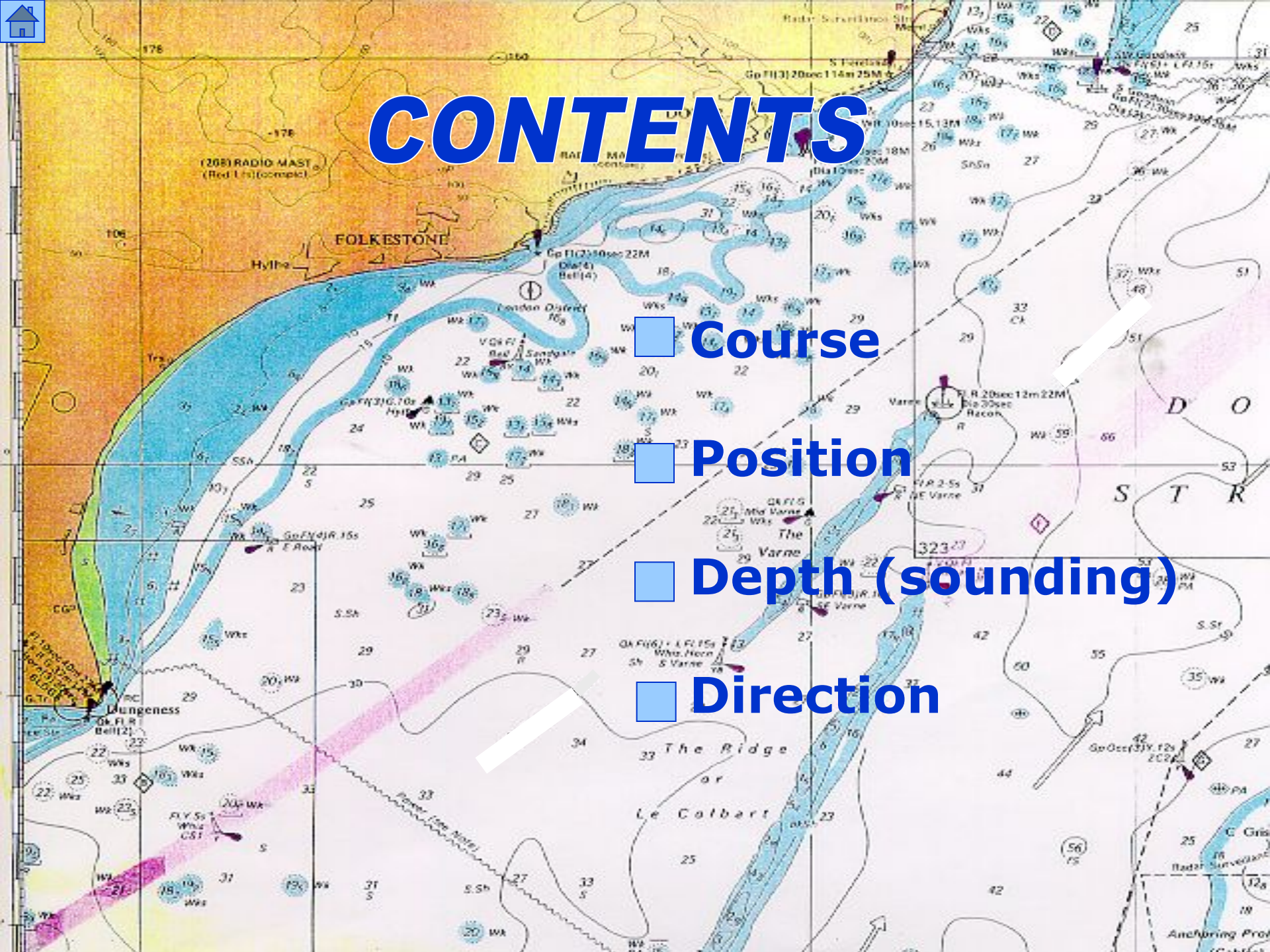
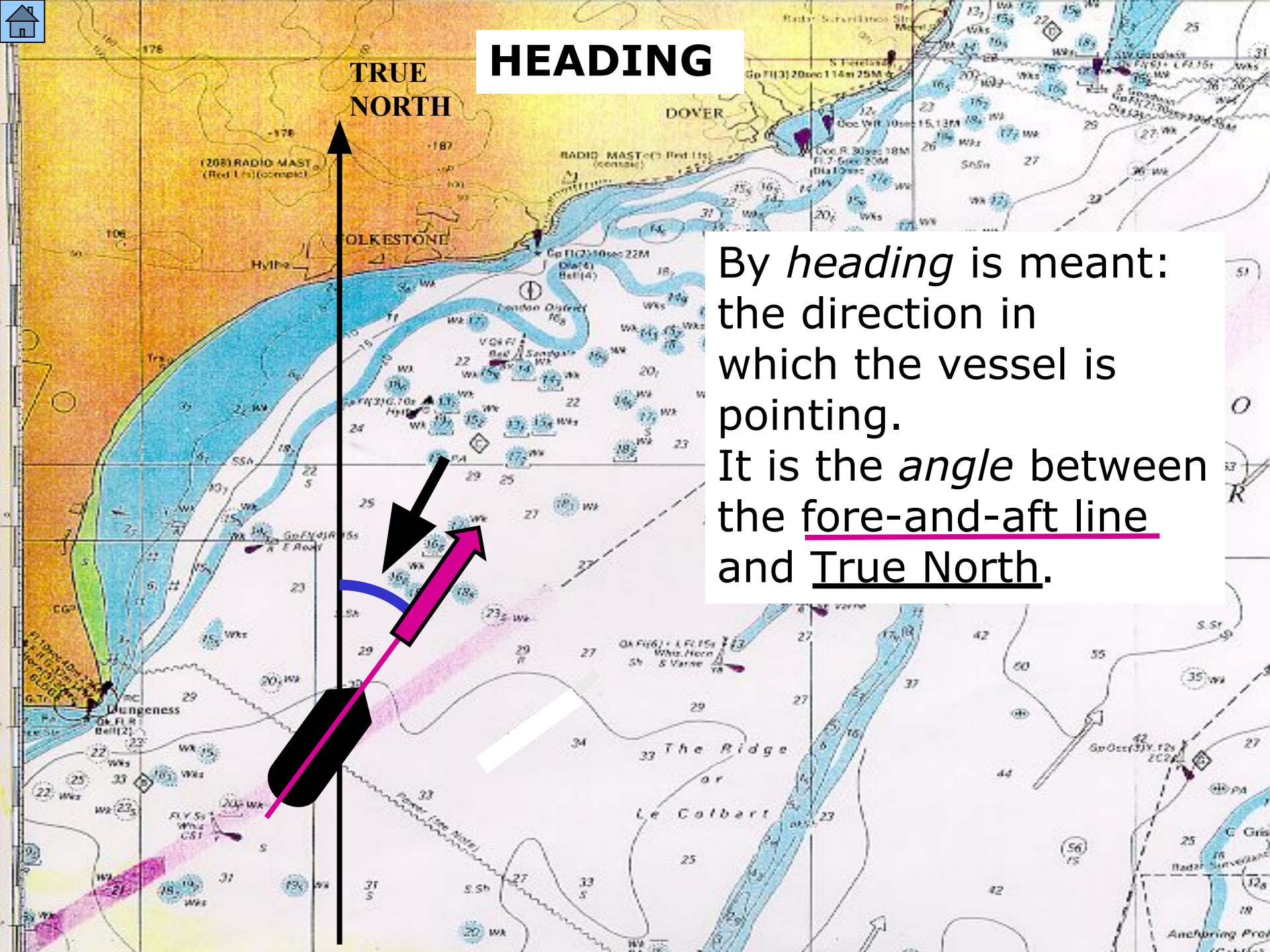
Navigation

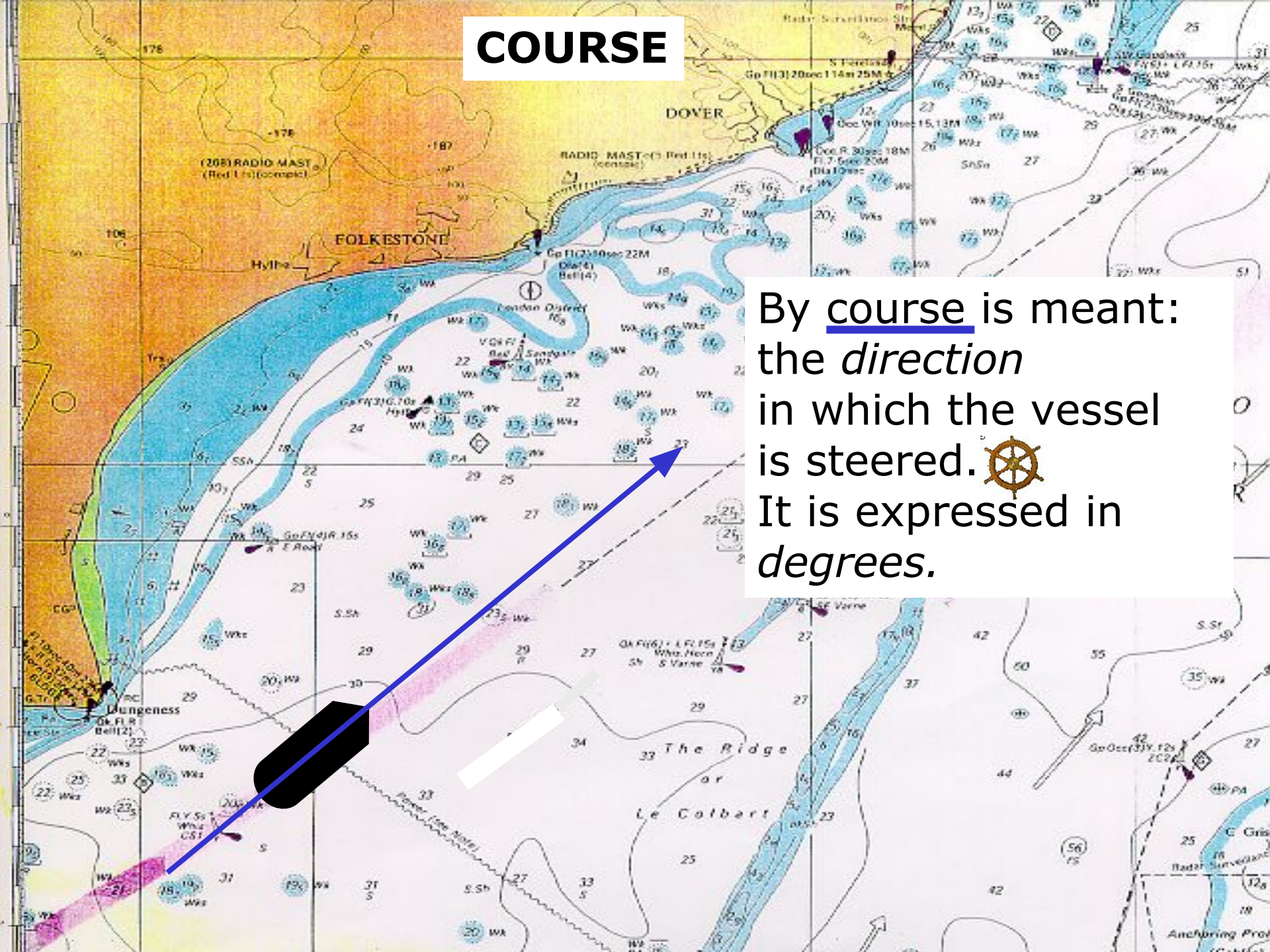


DOVER
Hythe
Dungeness
London District
Sandgate
E Road
Mid Varne
The Varne
SE Varne
S Varne
Varne
The Ridge
or
Le Colbart
D O
S T R


CONTENTS
Course
Position
Depth (sounding)
Direction
FOLKESTONE
Hythe
Dungeness
The Varne
The Ridge
or
Le Colbert

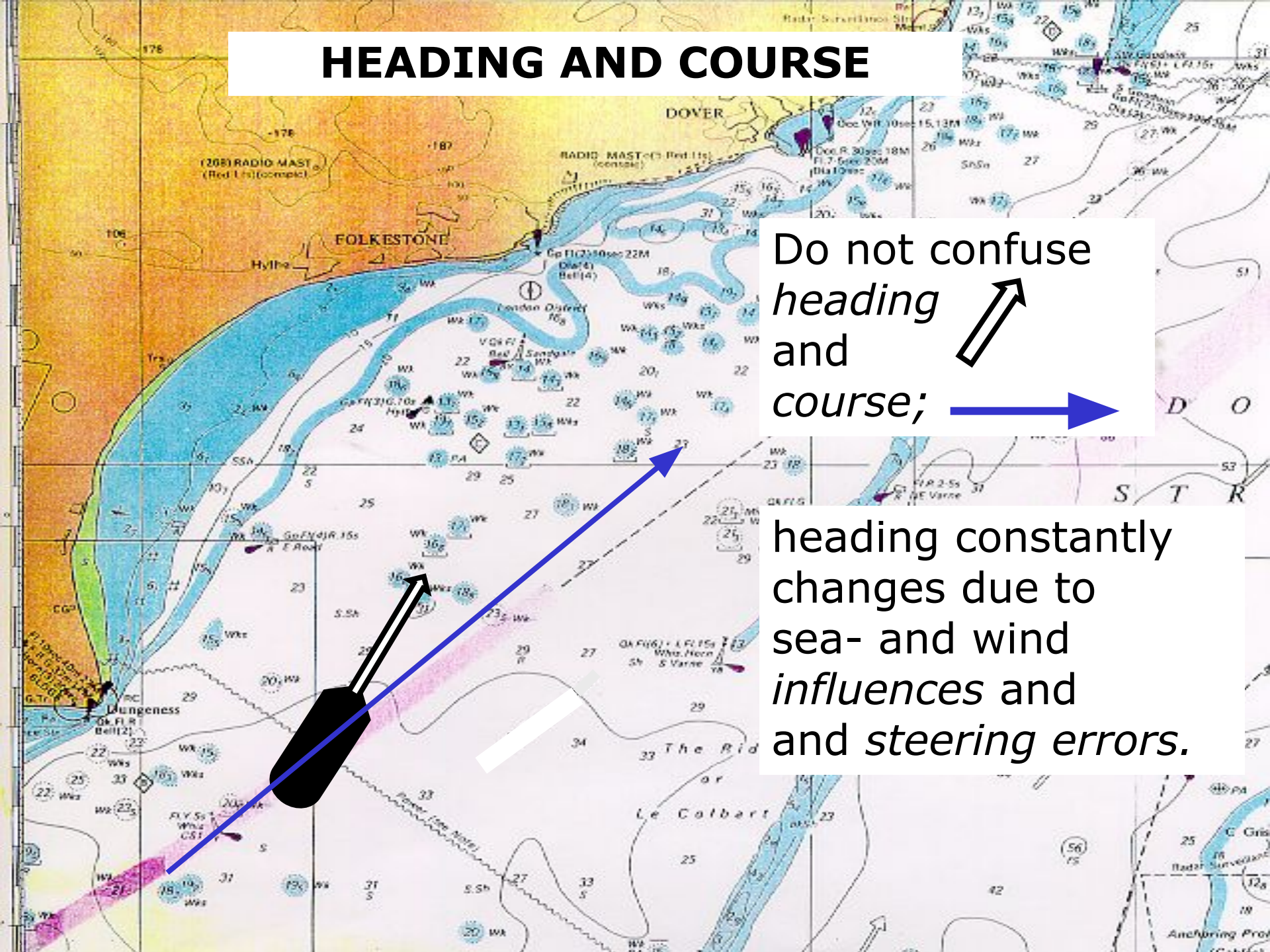

HEADING
TRUE NORTH
By *heading* is meant: the direction in which the vessel is pointing.
It is the *angle* between the fore-and-aft line and True North.

COURSE



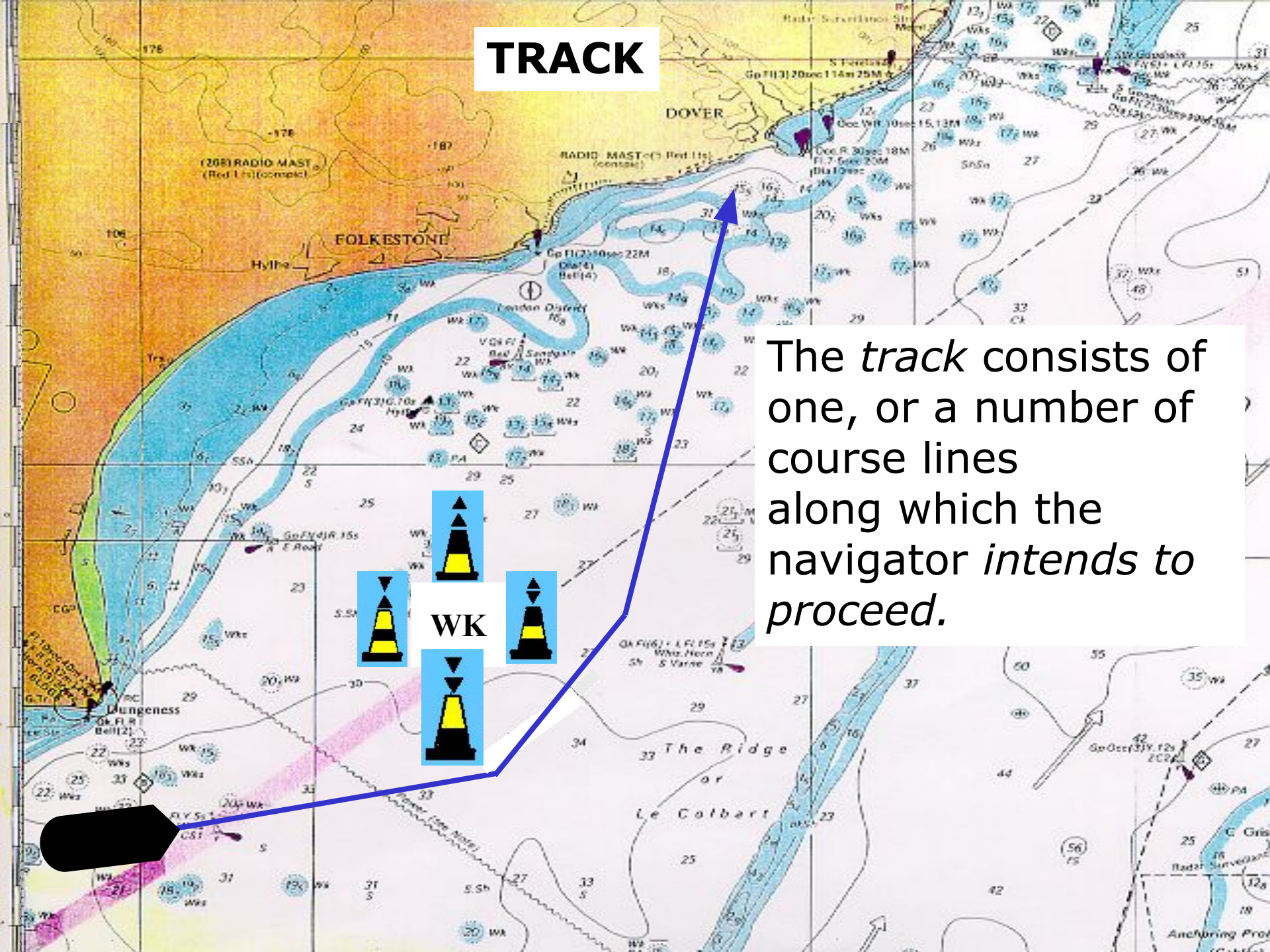
By course is meant:
the *direction*
in which the vessel
is steered.
It is expressed in
degrees.

HEADING AND COURSE

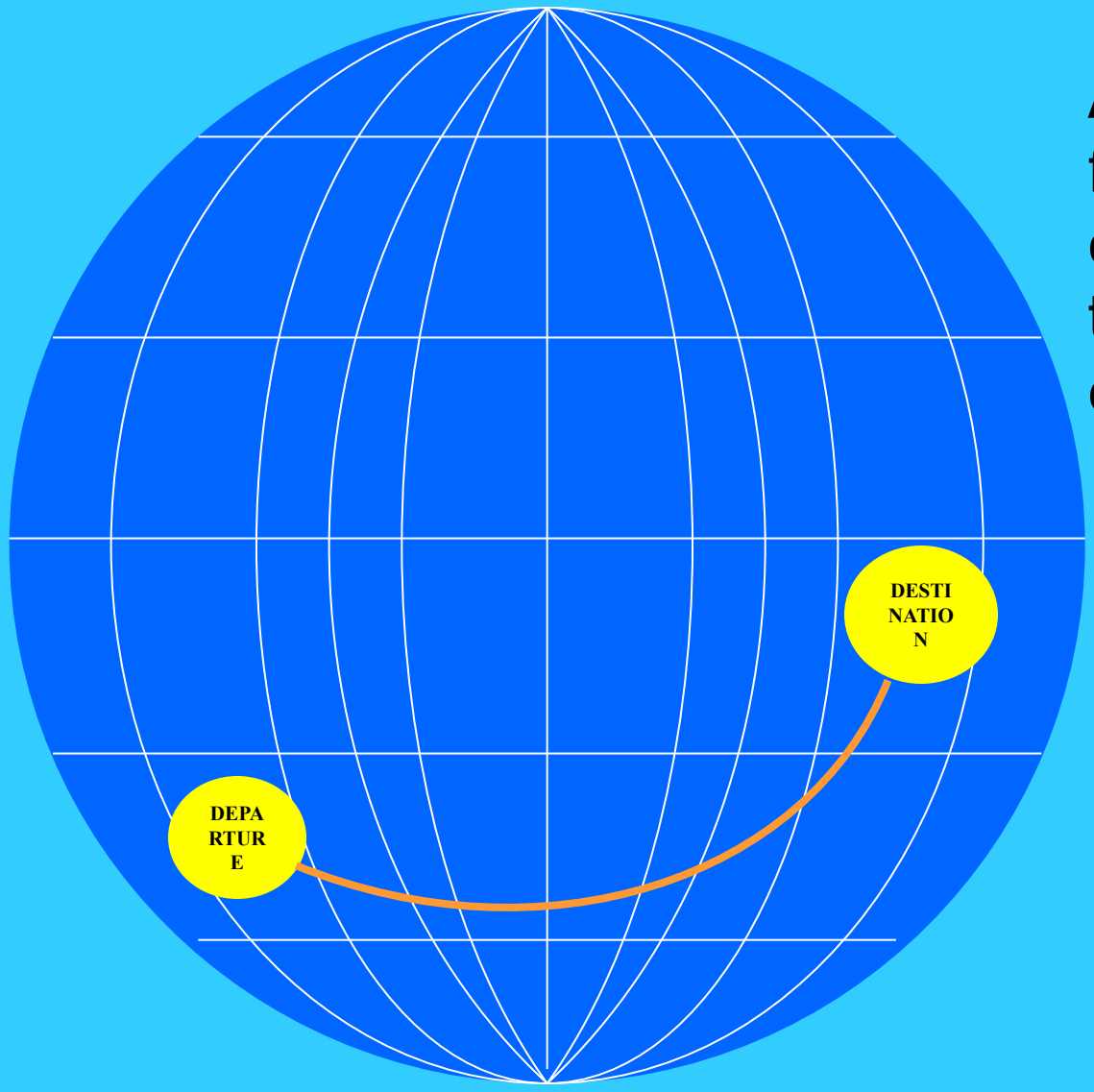


Do not confuse *heading* and *course;*

heading constantly changes due to sea- and wind *influences* and and *steering errors.*

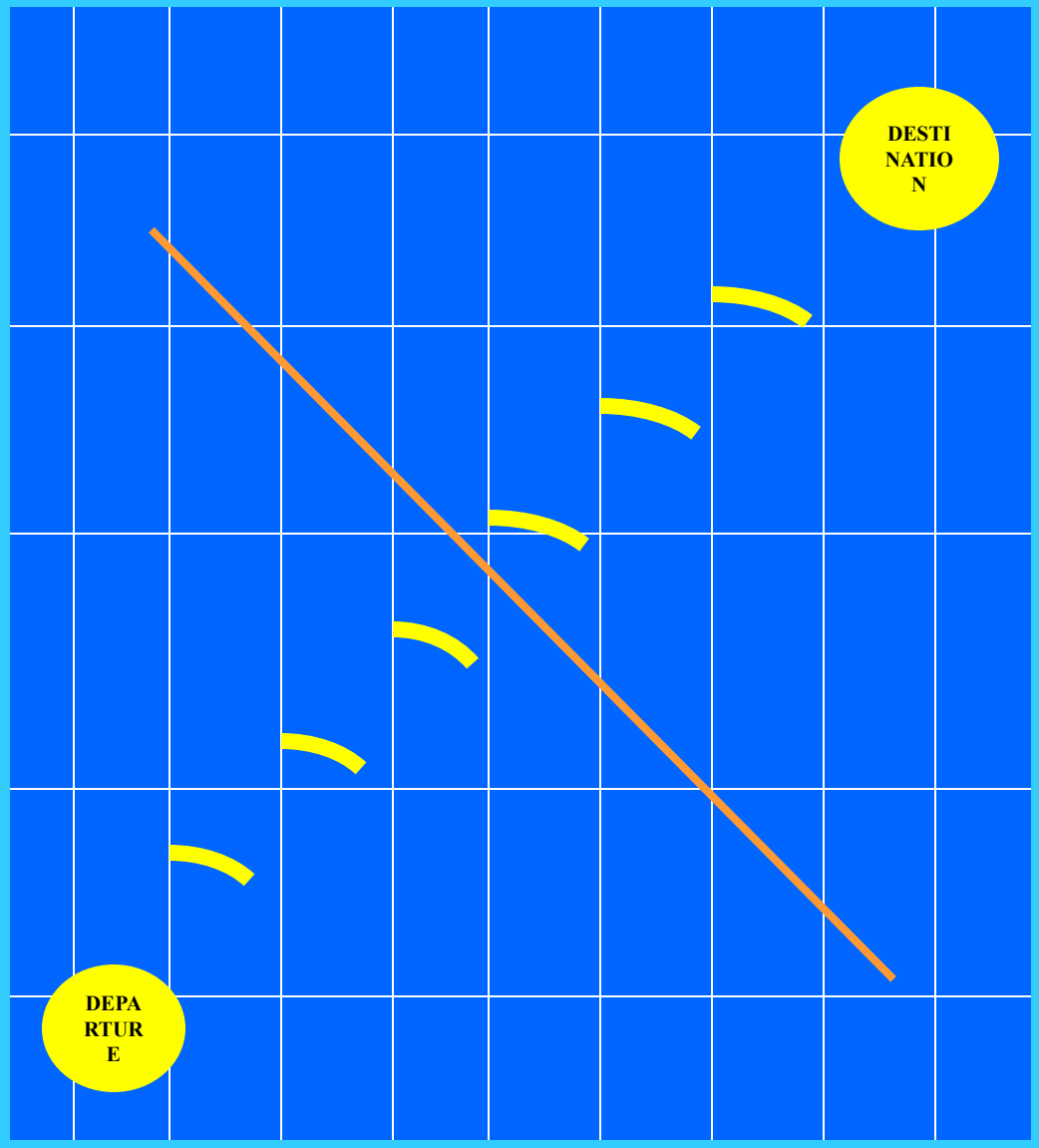

TRACK
DOVER
FOLKESTONE
Hythe
WK
Dungeness
The Ridge
or
Le Colbert
The track consists of one, or a number of course lines along which the navigator intends to proceed.

GREAT CIRCLE COURSE (TRACK)



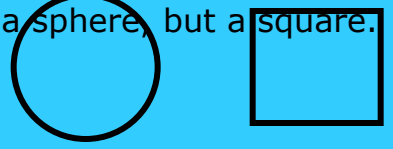
A *great circle course* forms the shortest connection between two places on the earth.

RHUMB LINE (*loxodrome*)

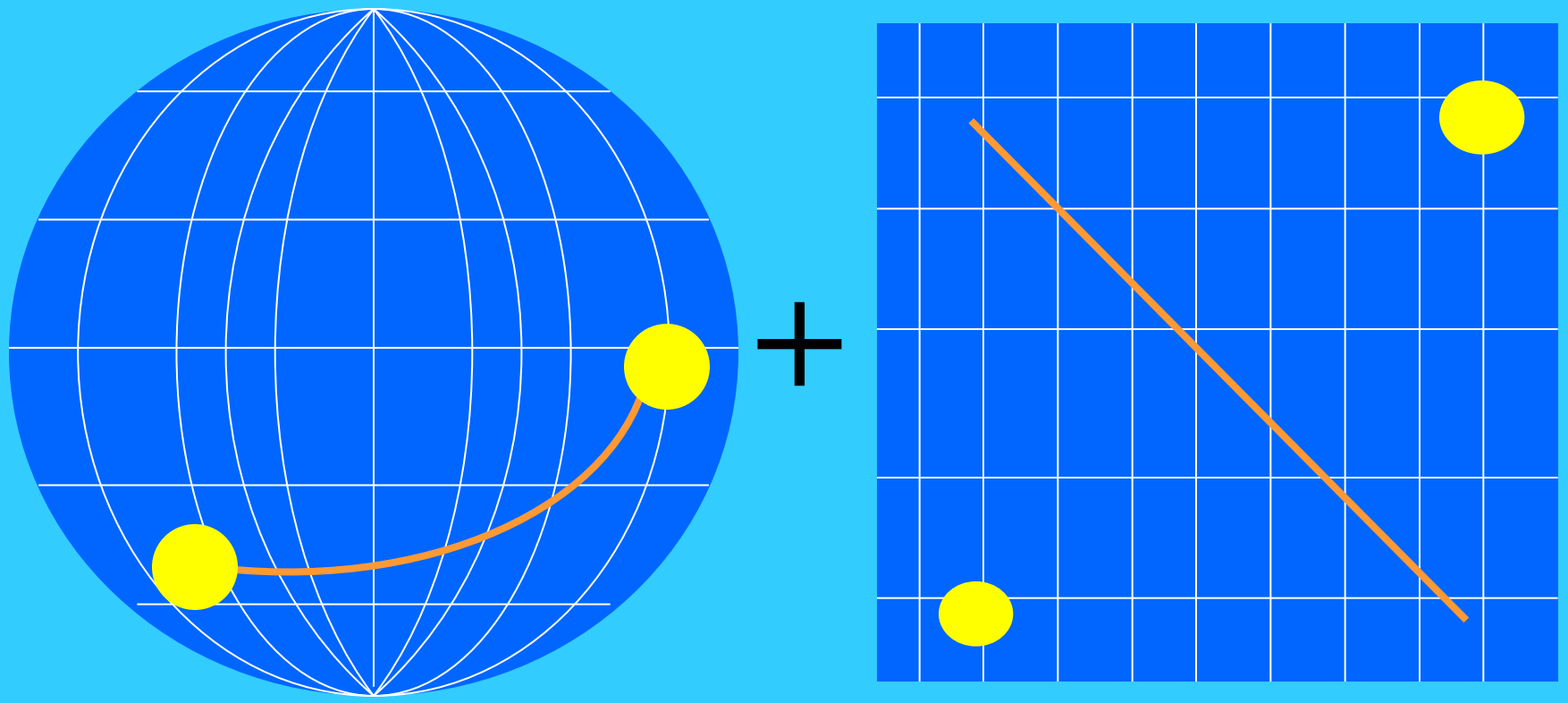


A *Rhumb line* is a line whereby all the angles made by the Meridians and the *course line* are *equal.*

This implies that in (Mercator) sea charts the earth is not a sphere, but a square.

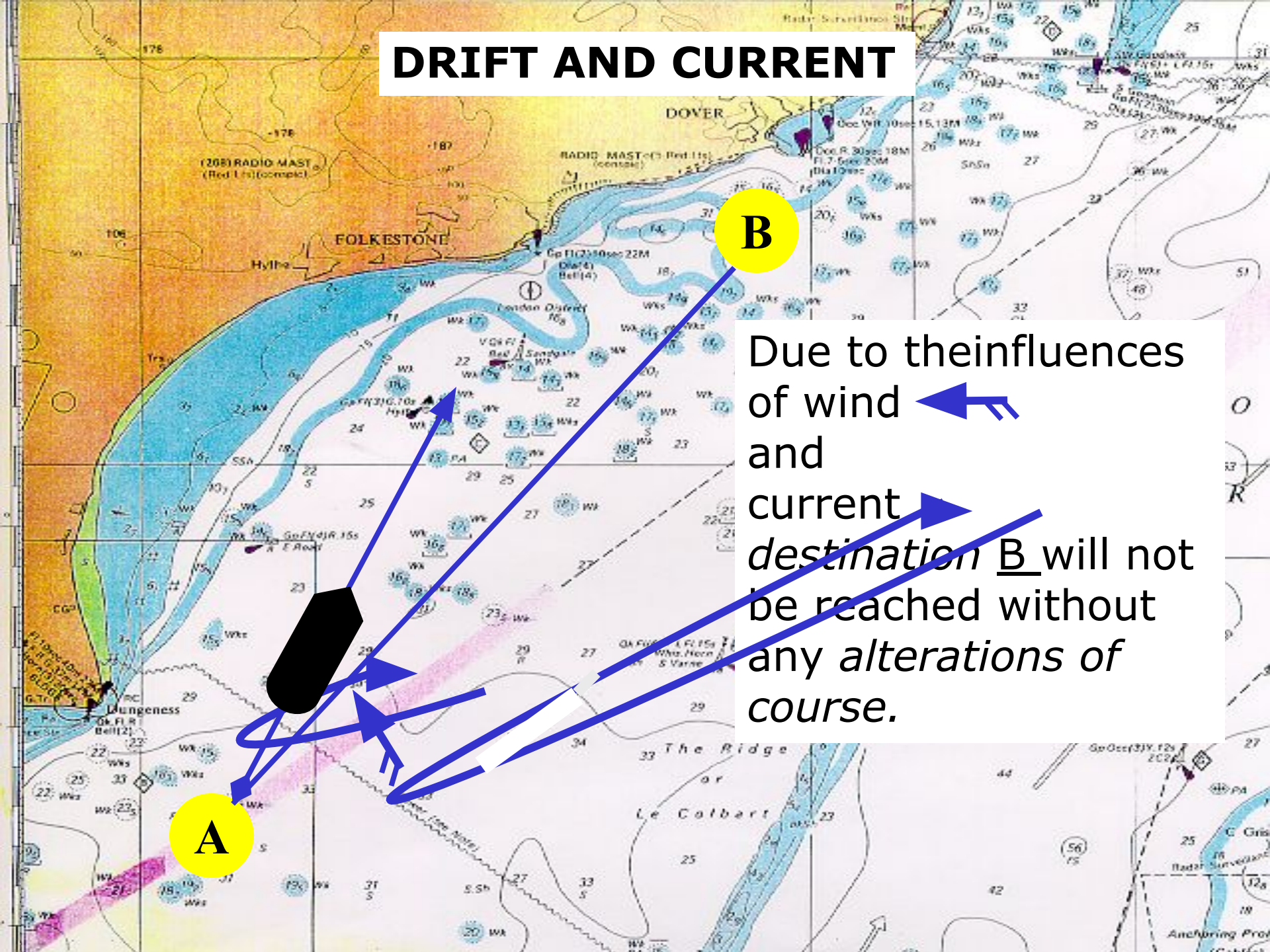


COMPOSITE SAILING



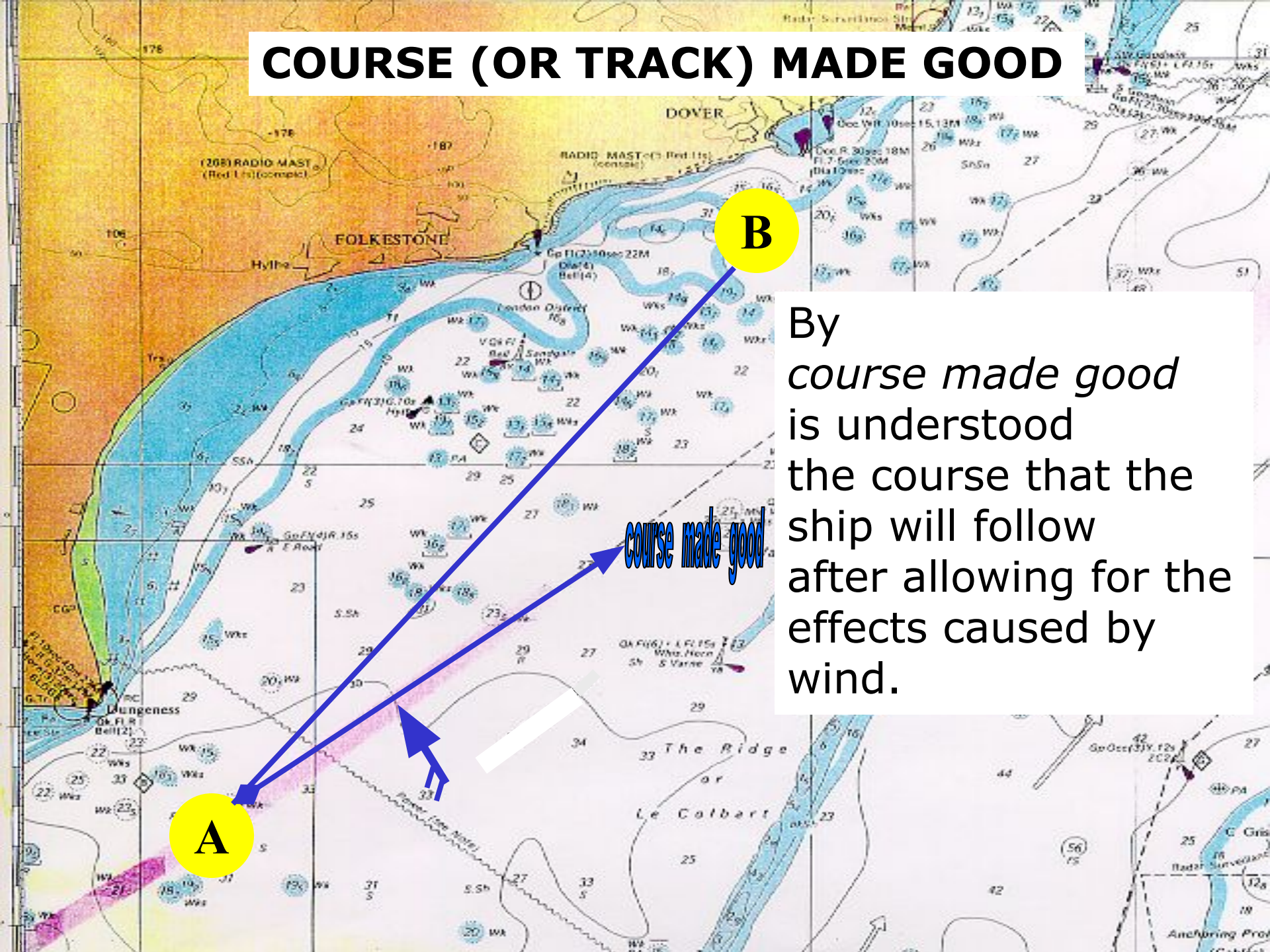
Composite sailing combines the *advantages* of the *great circle* and the *rhumb line*:
it will offer the *shortest possible route*, and the vessel can keep *constant true directions*.

DRIFT AND CURRENT



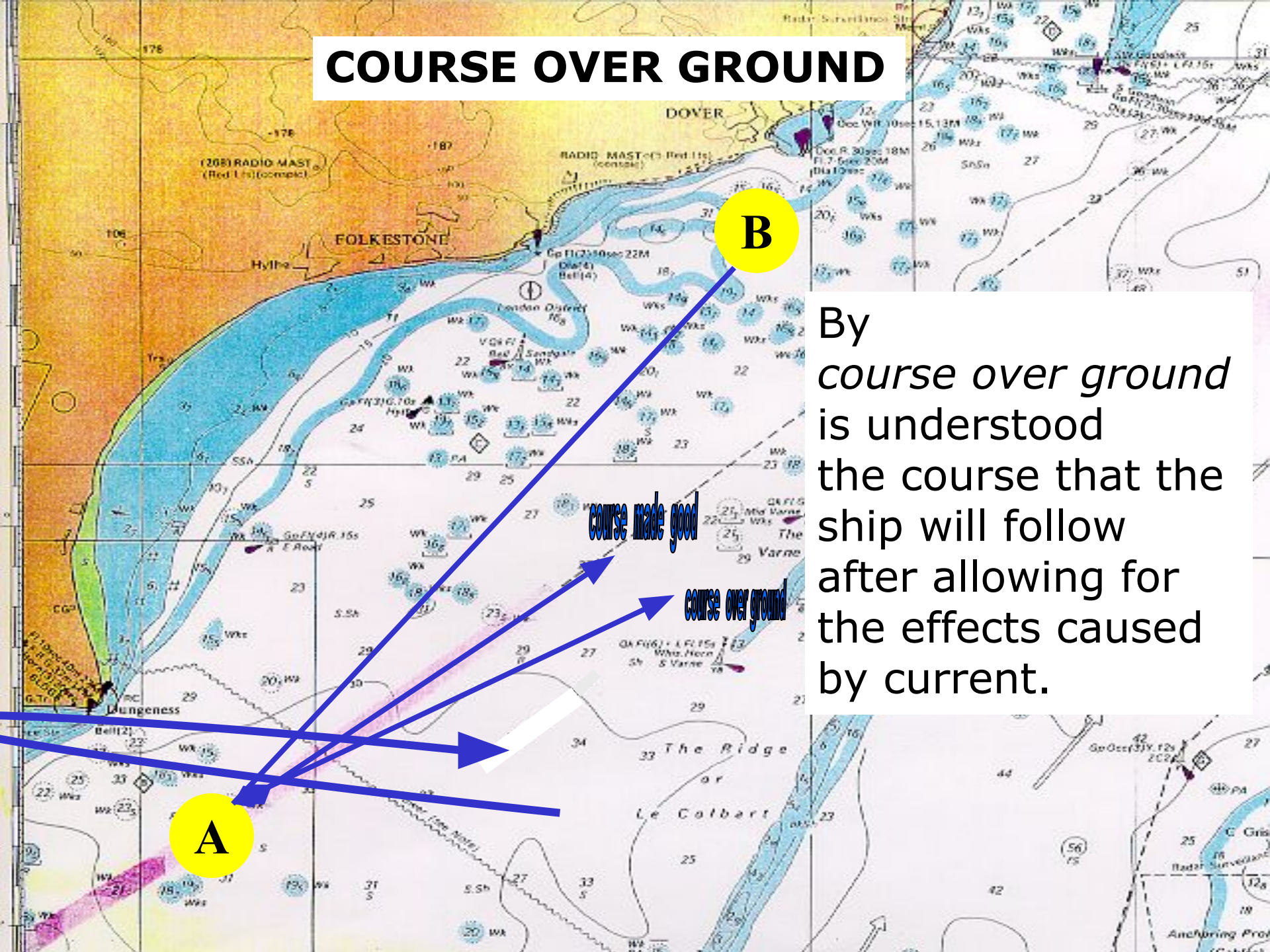
Due to theinfluences of wind and current *destination* B will not be reached without any *alterations of course.*

COURSE (OR TRACK) MADE GOOD

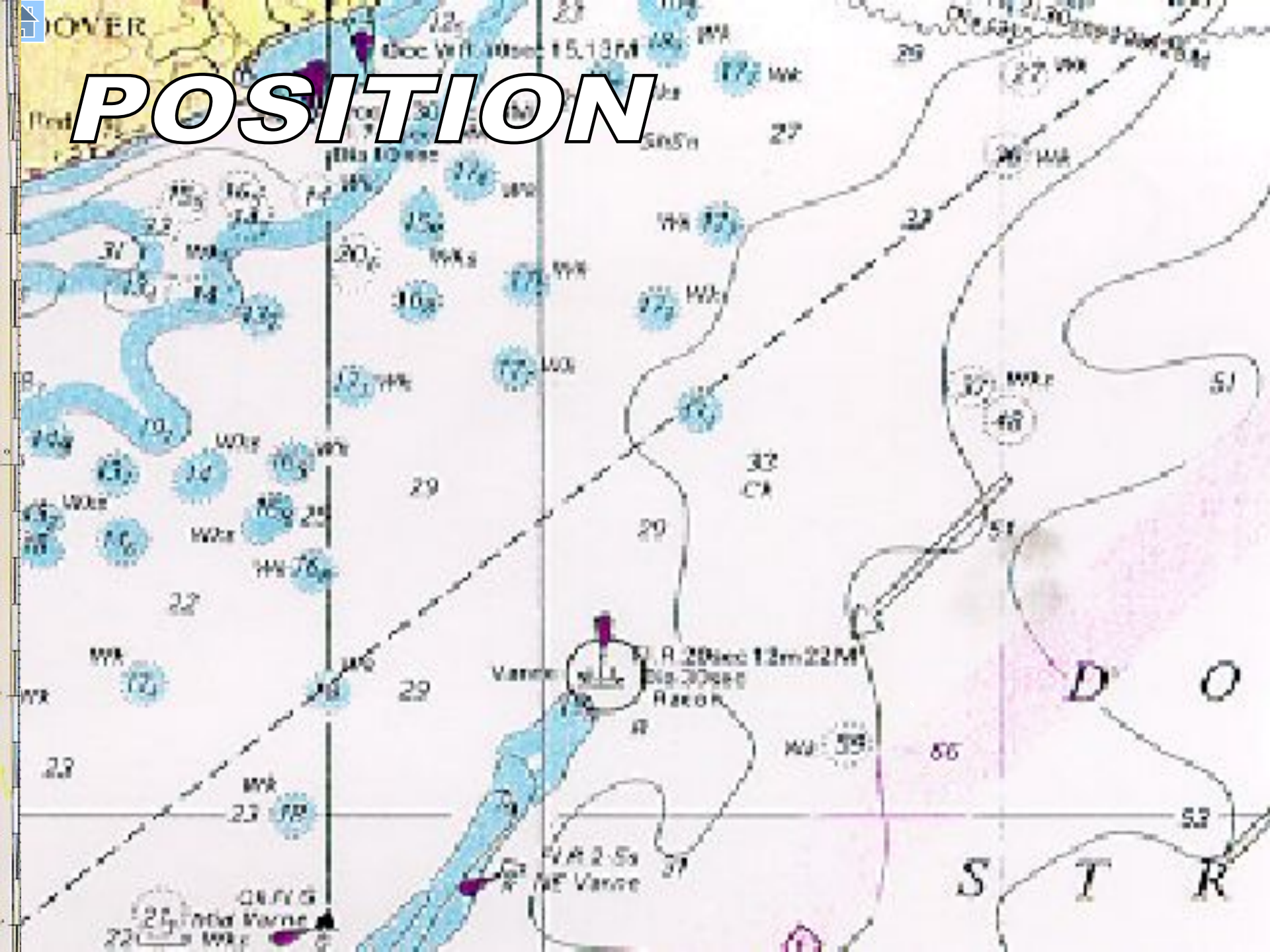


By
course made good
is understood
the course that the
ship will follow
after allowing for the
effects caused by
wind.

COURSE OVER GROUND



By
course over ground
is understood
the course that the
ship will follow
after allowing for
the effects caused
by current.


POSITION

Determining position

Pilotage (coastal navigation)
Cross bearing
The cocked hat
A running fix
Dead reckoning
Astronomical navigation
Satellite

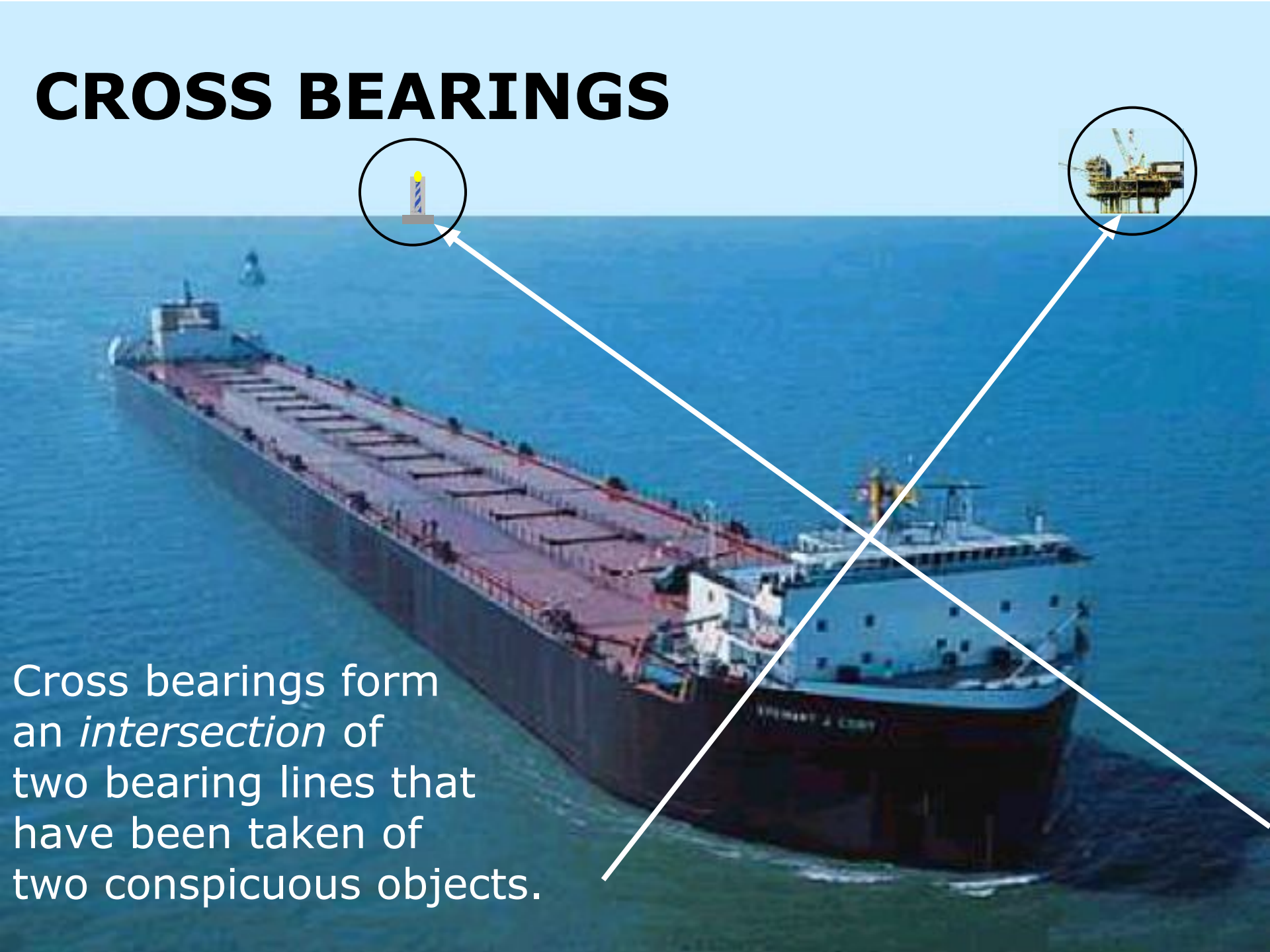
PILOTAGE

When sailing along the coast, compass-bearings of *conspicuous objects* are taken at regular intervals.

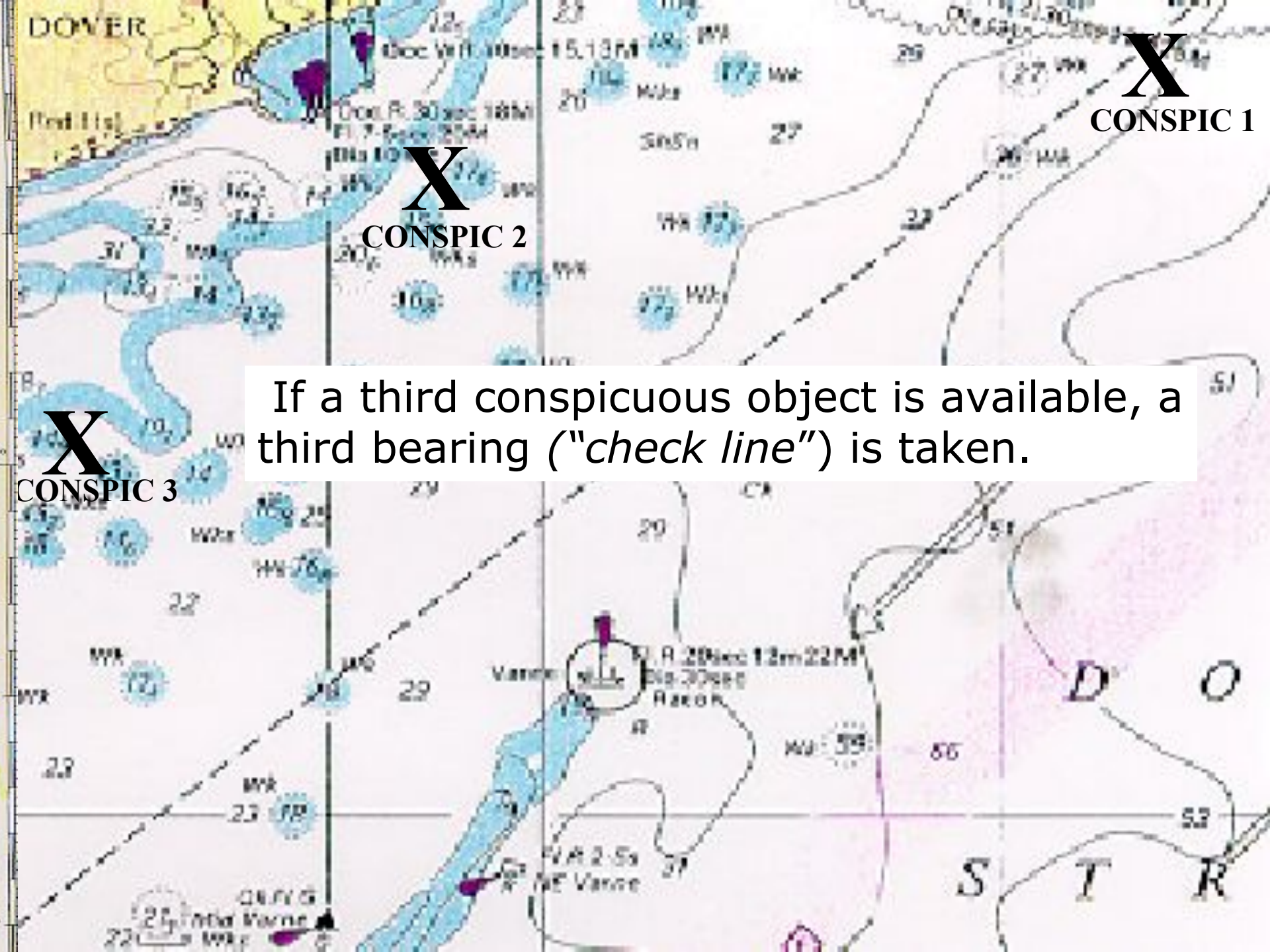
PILOTAGE

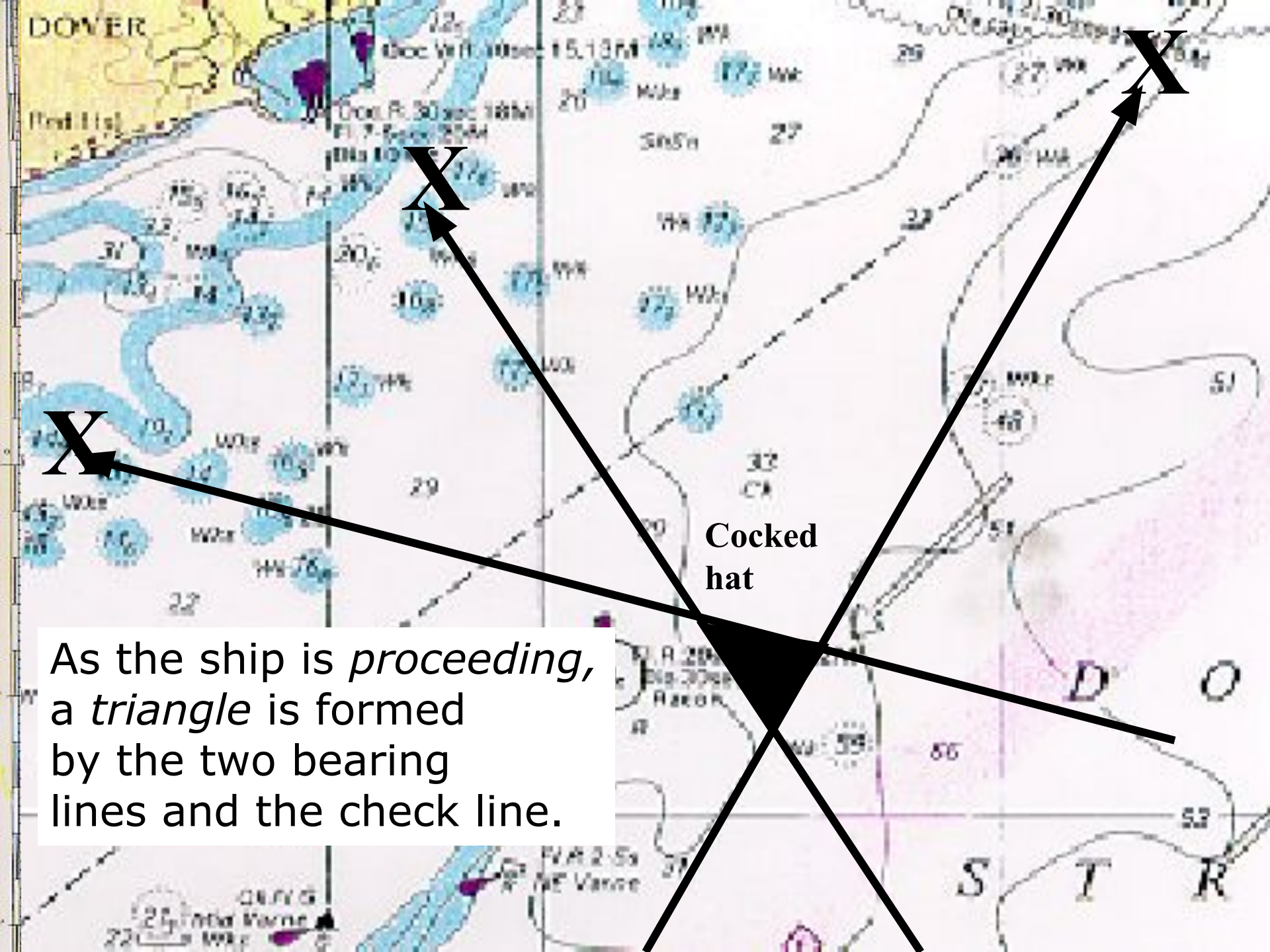
A CONSPICUOUS OBJECT (CONSPIC)
is an object on land or at sea, which is *mentioned* and *described* in the pilot book.

CROSS BEARINGS



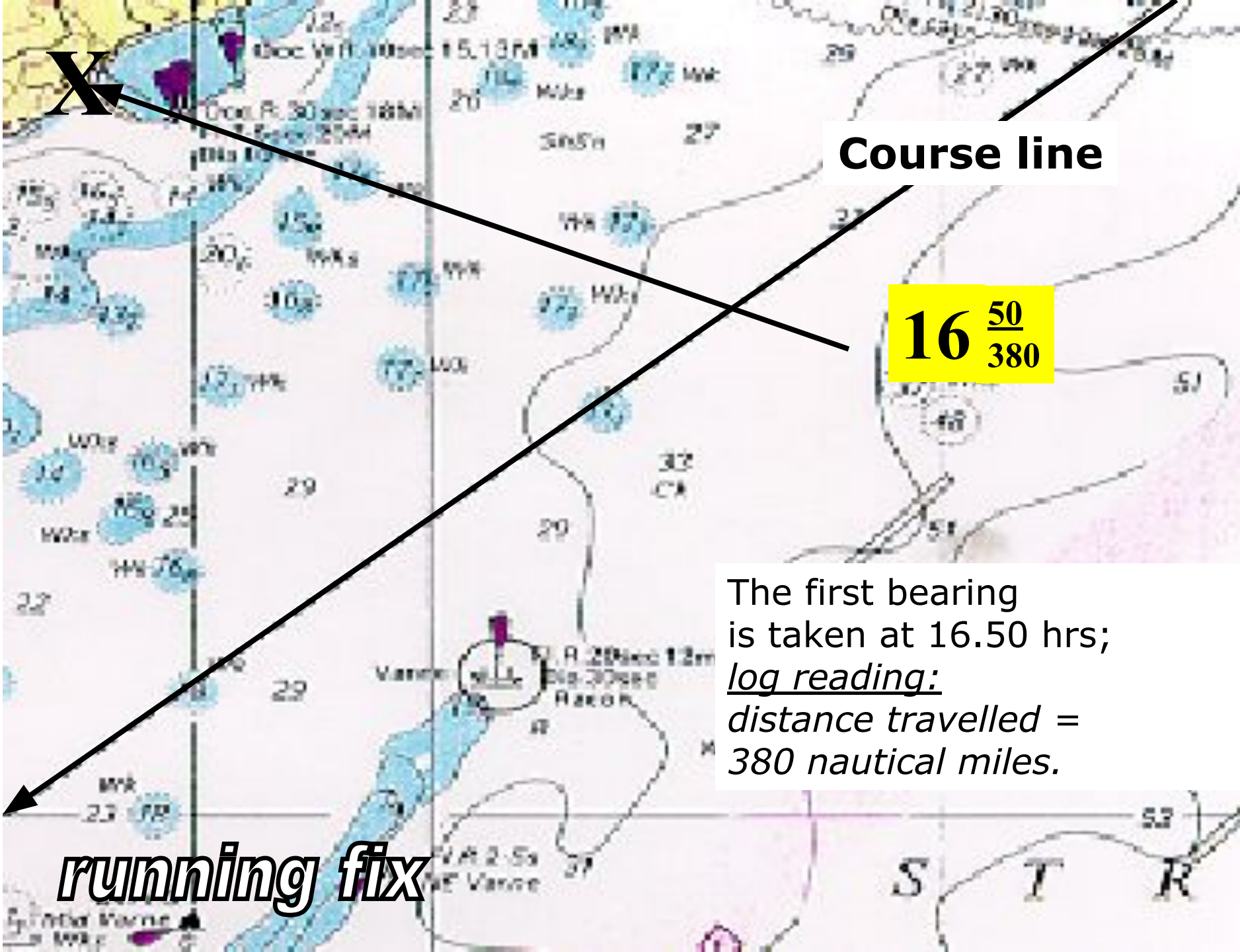
Cross bearings form an *intersection* of two bearing lines that have been taken of two conspicuous objects.

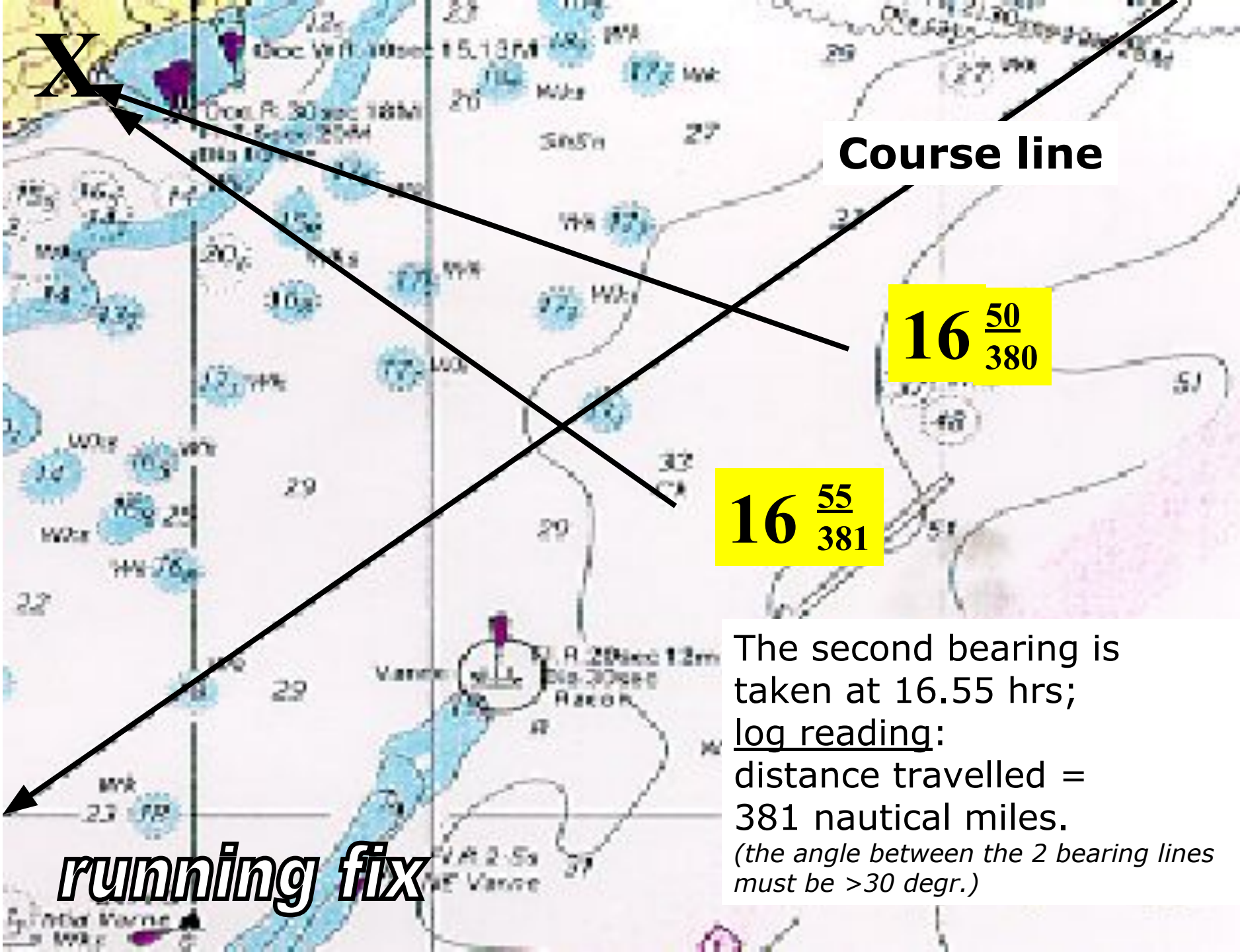

DOVER
X
CONSPIC 1
X
CONSPIC 2
X
CONSPIC 3
If a third conspicuous object is available, a third bearing (“*check line*”) is taken.


DOVER
X
X
X
Cocked hat
As the ship is *proceeding,* a *triangle* is formed by the two bearing lines and the check line.

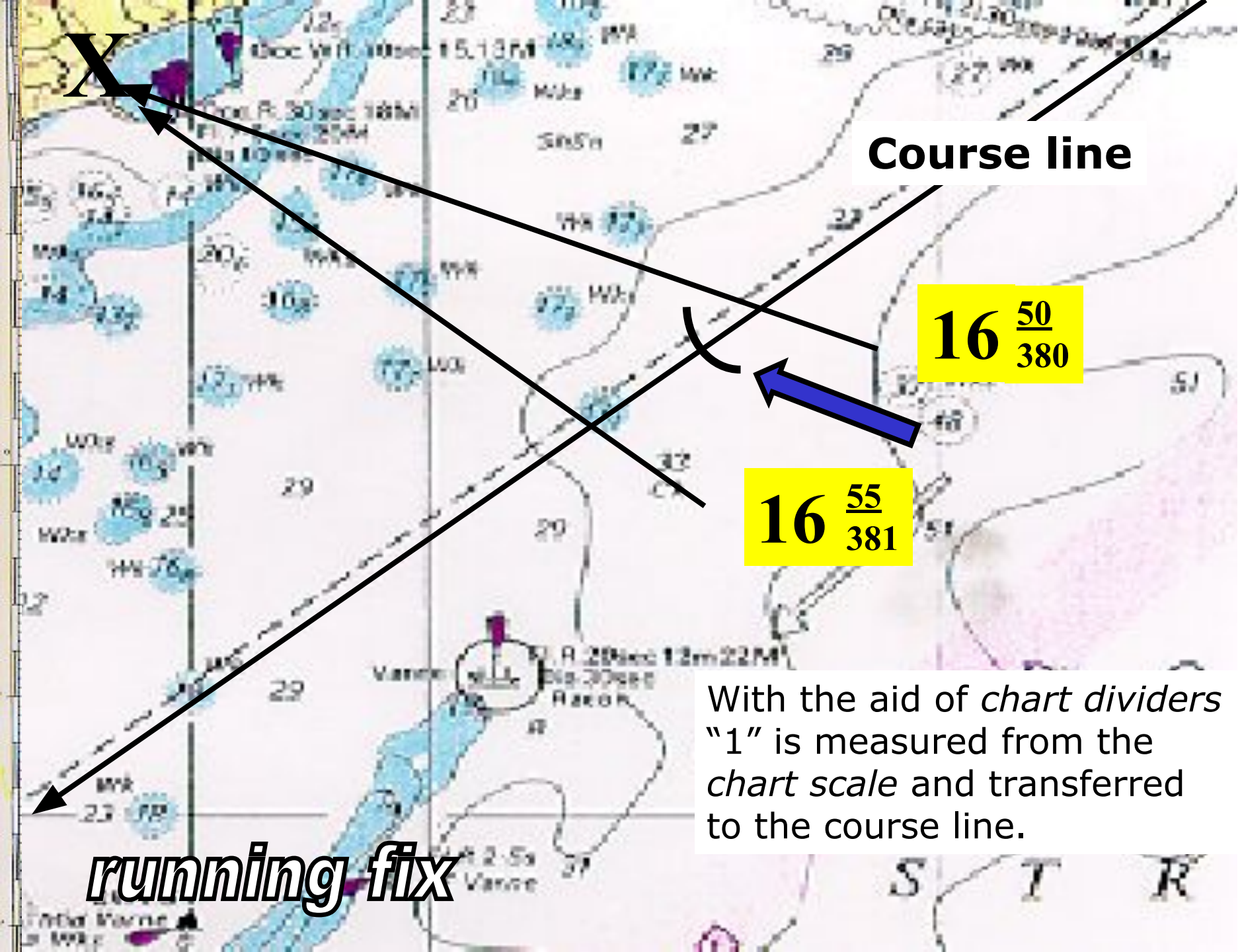
running fix

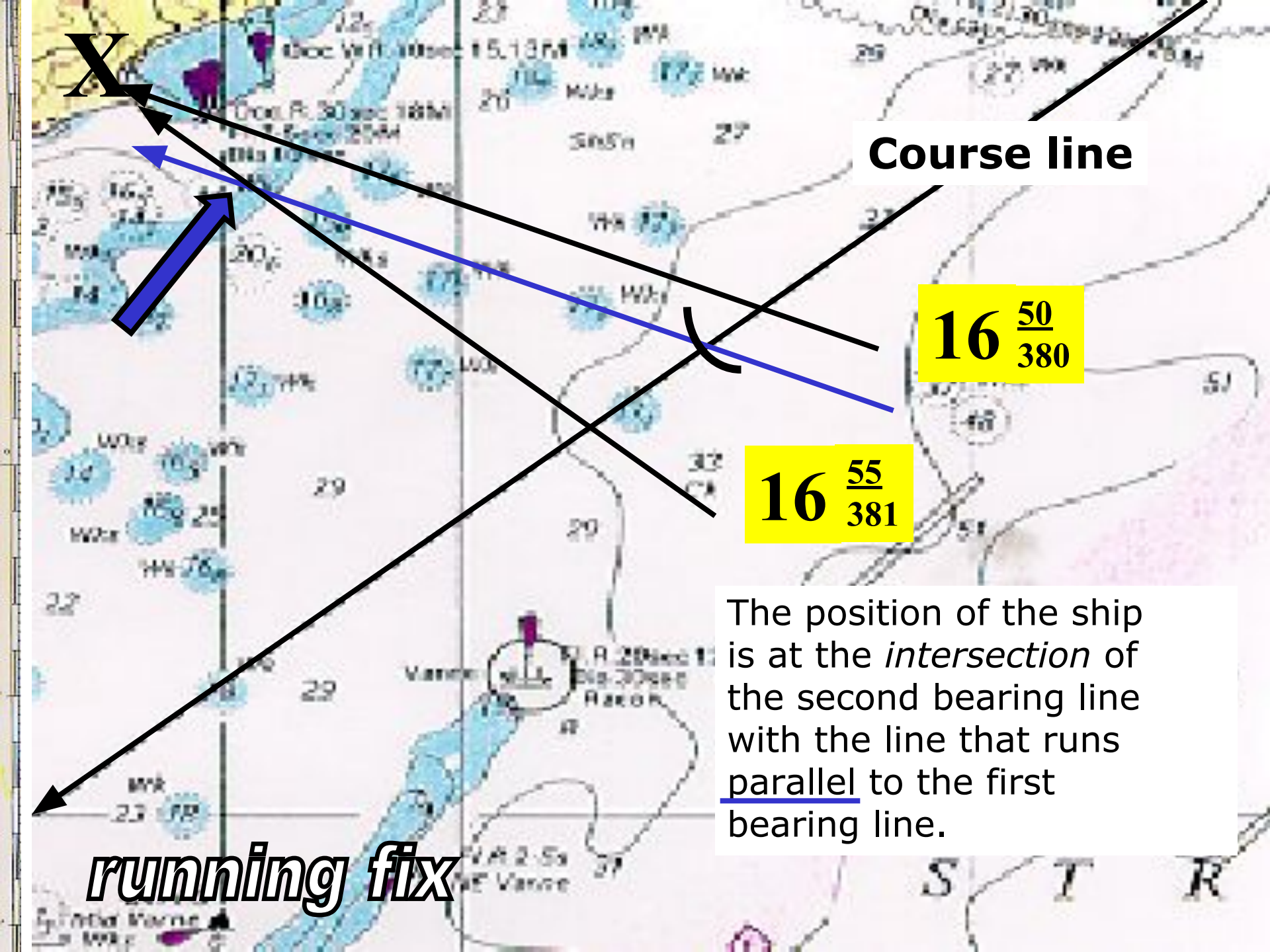
When there is only one conspicuous object, a *position fix* is made by taking two bearings of that same conspic at interval.


X
Course line
16 50/380
The first bearing
is taken at 16.50 hrs;
log reading:
distance travelled =
380 nautical miles.
running fix

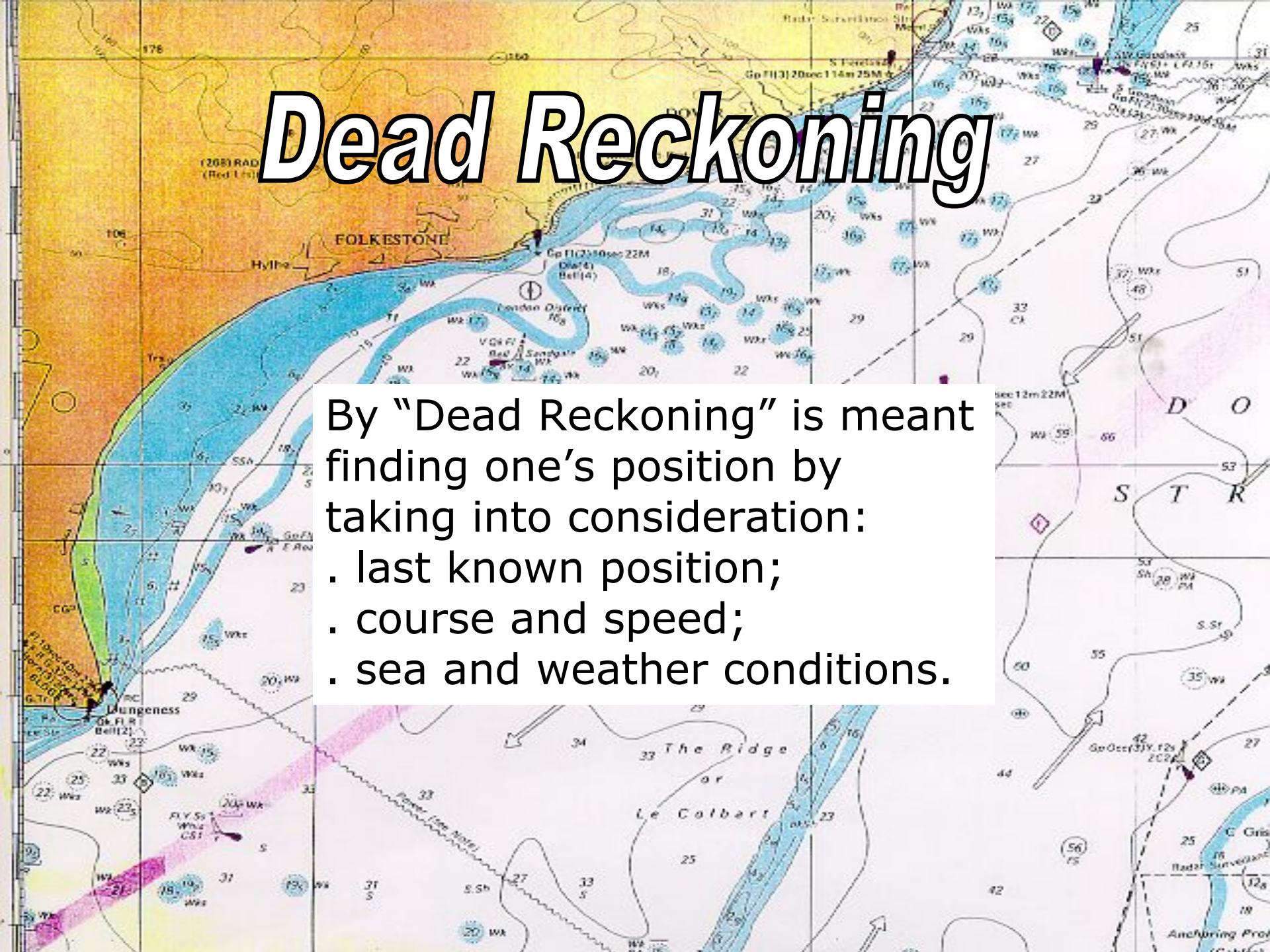


The second bearing is taken at 16.55 hrs;
log reading:
distance travelled = 381 nautical miles.
(the angle between the 2 bearing lines must be >30 degr.)


X
Course line
16 50/380
16 55/381
With the aid of *chart dividers* "1" is measured from the *chart scale* and transferred to the course line.
running fix


X
Course line
16 50/380
16 55/381
The position of the ship is at the *intersection* of the second bearing line with the line that runs parallel to the first bearing line.
running fix

Dead Reckoning



By “Dead Reckoning” is meant finding one’s position by taking into consideration:

. last known position;

. course and speed;

. sea and weather conditions.

ASTRONOMICAL NAVIGATION

With astronomical navigation(*celestial navigation*) observations are taken of the sun, the moon or the stars (*celestial bodies*) with the aid of a sextant.

SEXTANT-BEARING

The angle between a *celestial body* and the horizon is measured.

With the *aid* of the chronometer and
the tables in the nautical almanac
the ship's position can be *determined*.

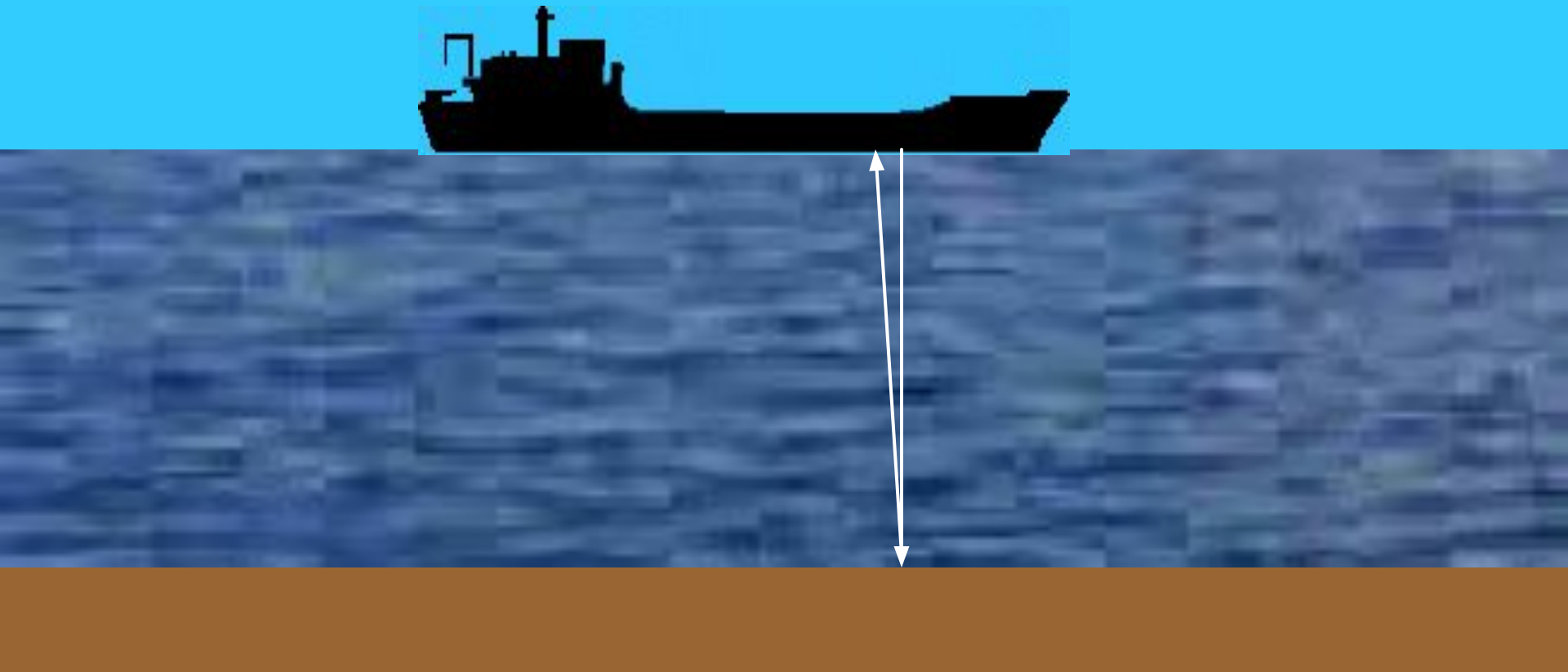
Sounding

With the aid of the echo sounder
the depth of the water
can be determined.

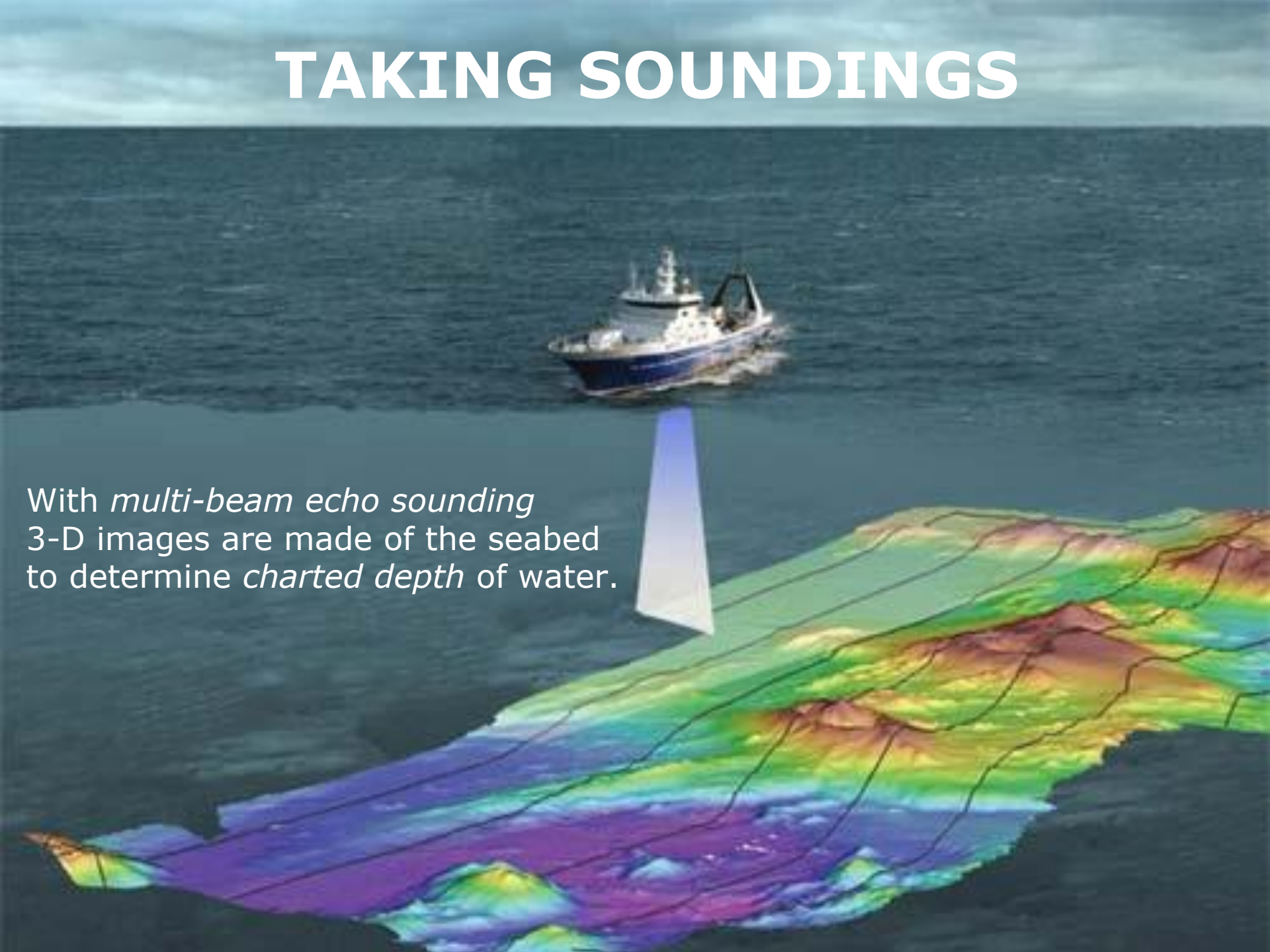
TAKING SOUNDINGS

A signal is transmitted to the sea bed.
This signal "bounces back" and is received again by the echo sounder.

From the *time elapsed* between *transmission* and *reception* of the signal, the depth of the water can be determined.



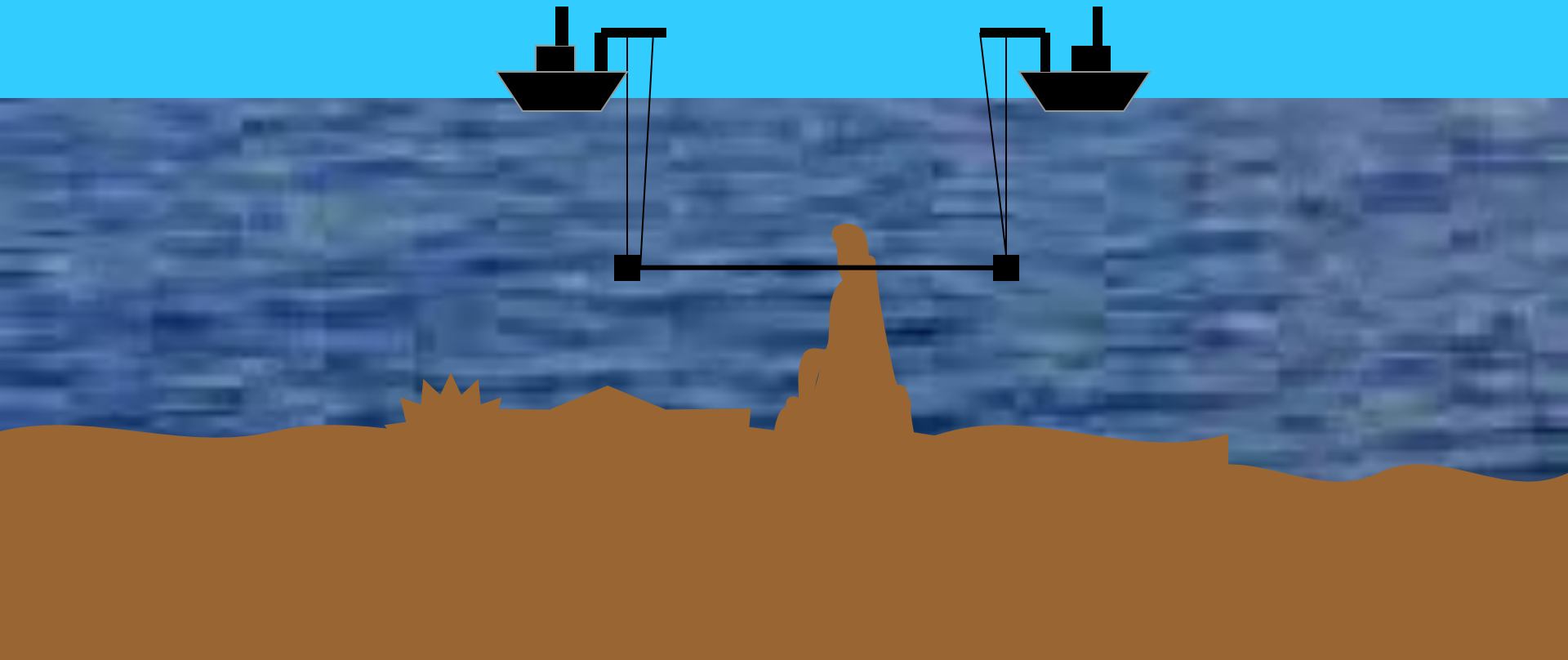
TAKING SOUNDINGS



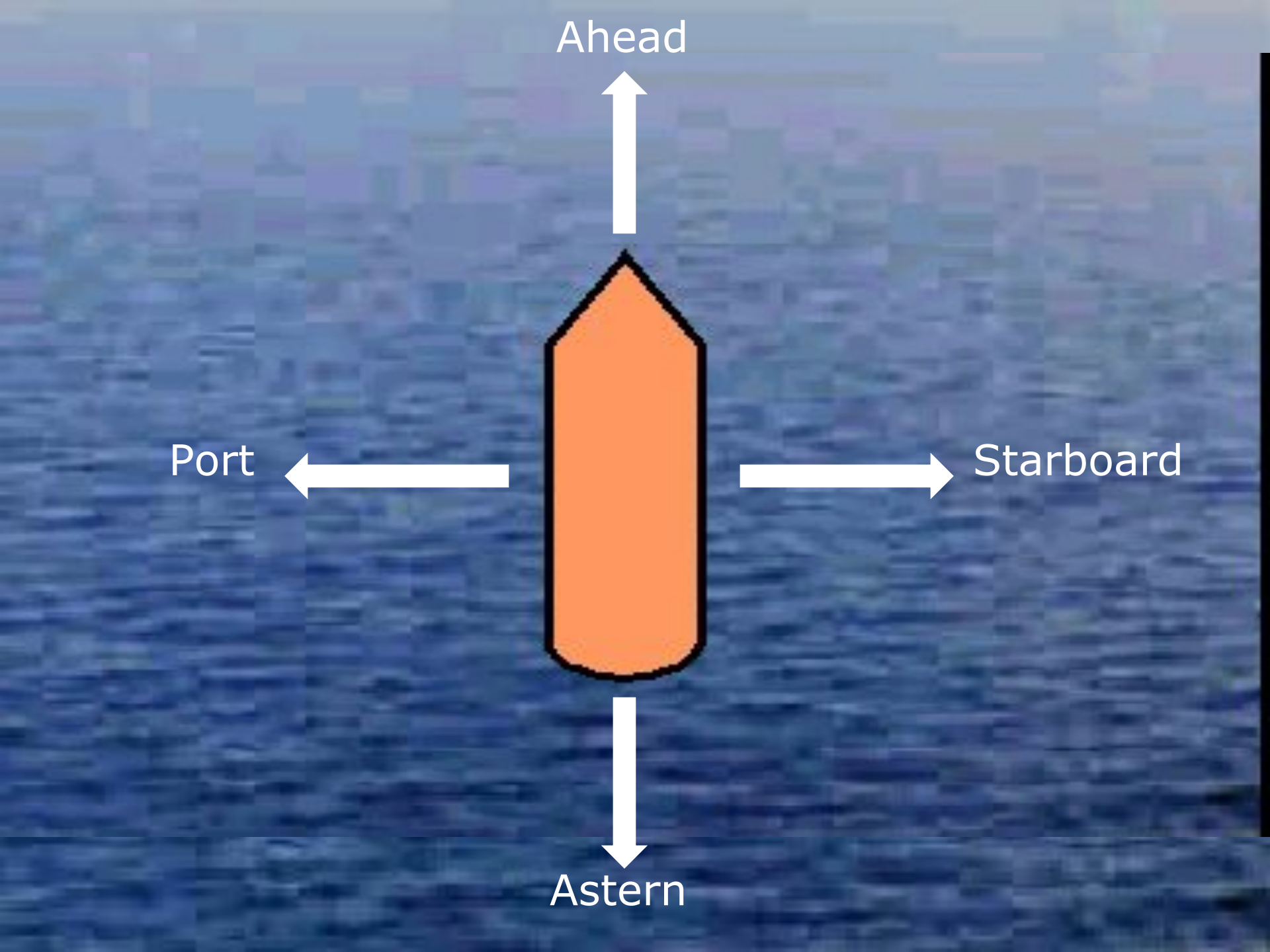
With *multi-beam echo sounding*
3-D images are made of the seabed
to determine *charted depth* of water.

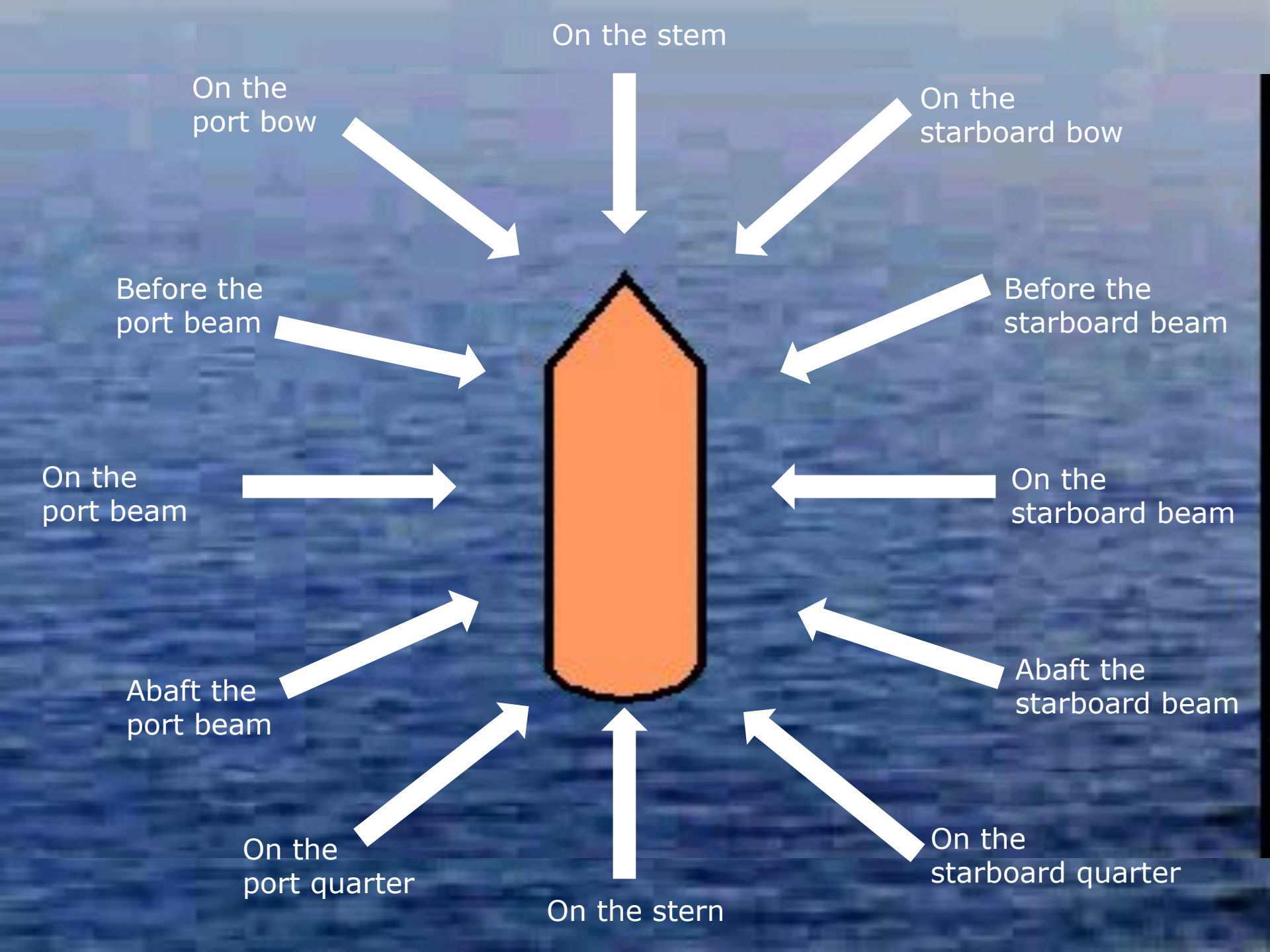
WIRE SWEEPING

Depth over a *protruding obstacle* can also be obtained by *wire sweeping*, whereby a cable is *swept* over the sea bed between two survey vessels.
However, this method of determining depth is *obsolete.*



Directions


Ahead
Port
Starboard
Astern


On the stem
On the port bow
On the starboard bow
Before the port beam
Before the starboard beam
On the port beam
On the starboard beam
Abaft the port beam
Abaft the starboard beam
On the port quarter
On the stern
On the starboard quarter

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STC-GROUP

IMO INTERNATIONAL MARITIME ORGANIZATION

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