Course to Steer

How to work out a course to steer

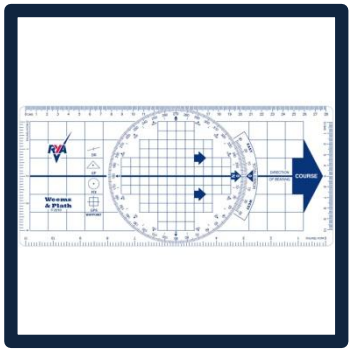
Introduction

Working out a safe course to steer is one of the most important parts of passage making

Now you understand tidal streams, compass variation / deviation and leeway and how to plot fixes and position lines, this presentation will show you how to work out a safe course to steer

You Will Need

RYA Chartplotter



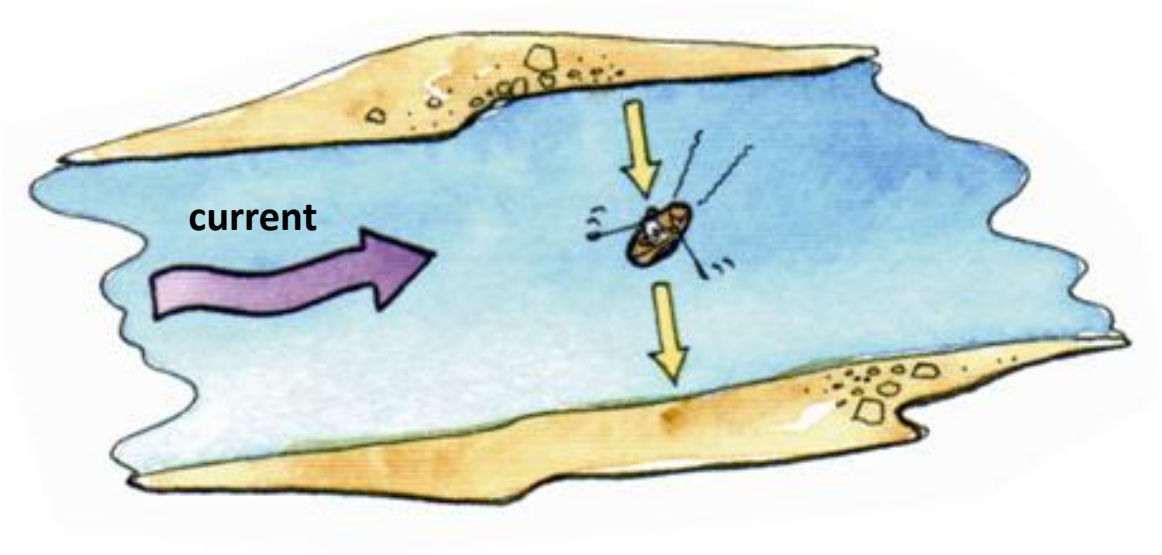
Dividers

RYA Practice Chart 3

Pad of paper, pencil and rubber

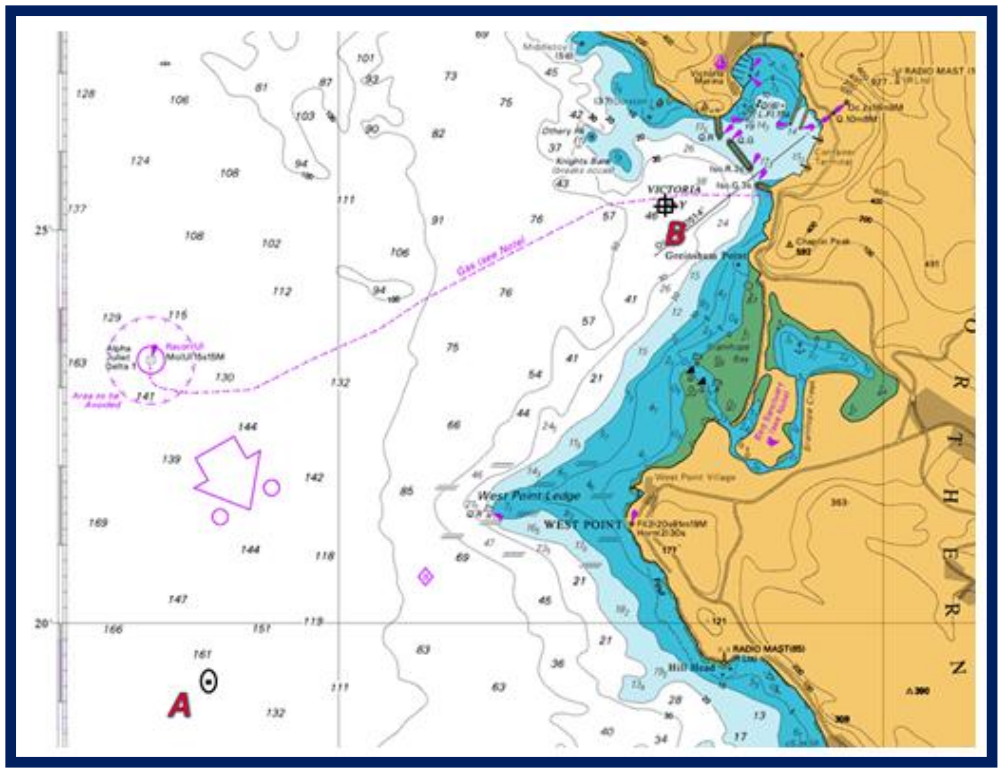
The Effects of Current

A person rowing across a river instinctively angles the boat to counter the effects of the current



But at sea we often can't see our destination so we need to calculate how much to angle into the stream to make the most direct passage

Question



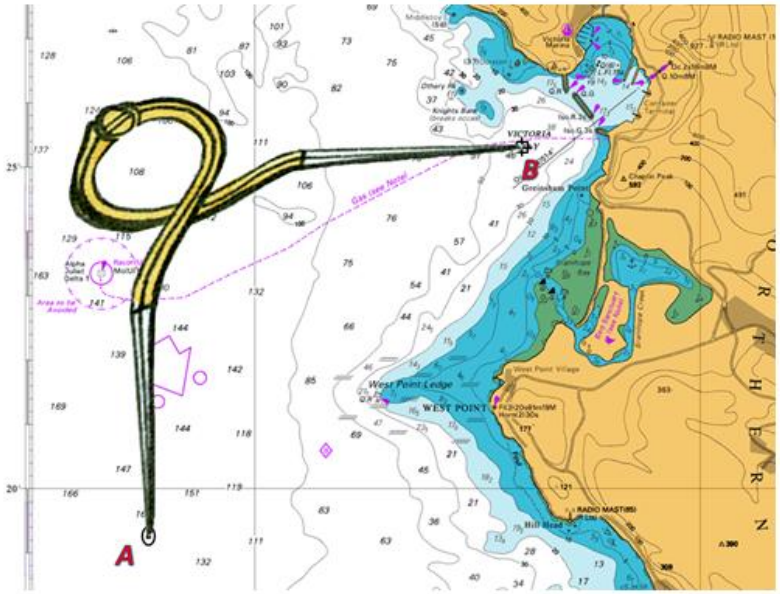
What is the course to steer from A to B at 10.45 DST on Friday 24th May?

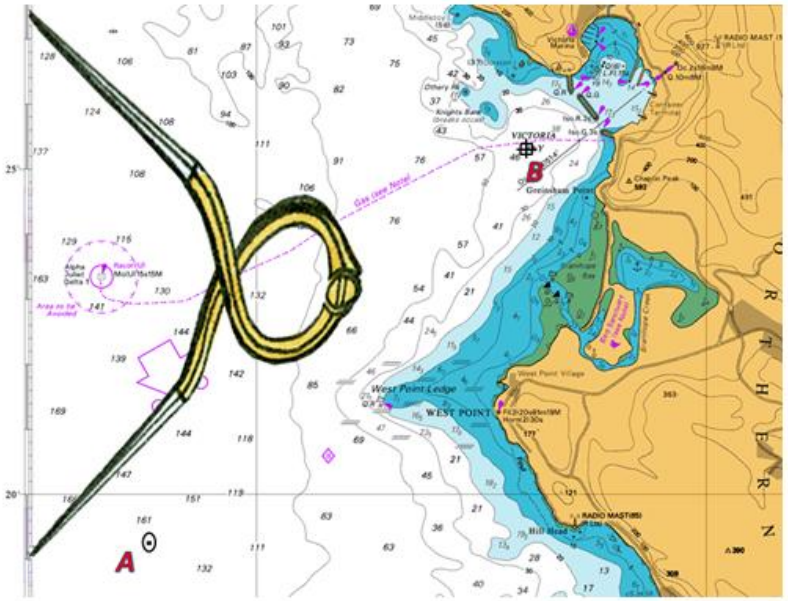
Position A 46°19´.2N 006°22´.4 W WPT B 46°25´.3N 006°14´.0 W

You estimate your boat speed is @9 knots

How far is it?

First, work out how far it is from A to B





Using your dividers you will see that it is approximately 8 ½ miles

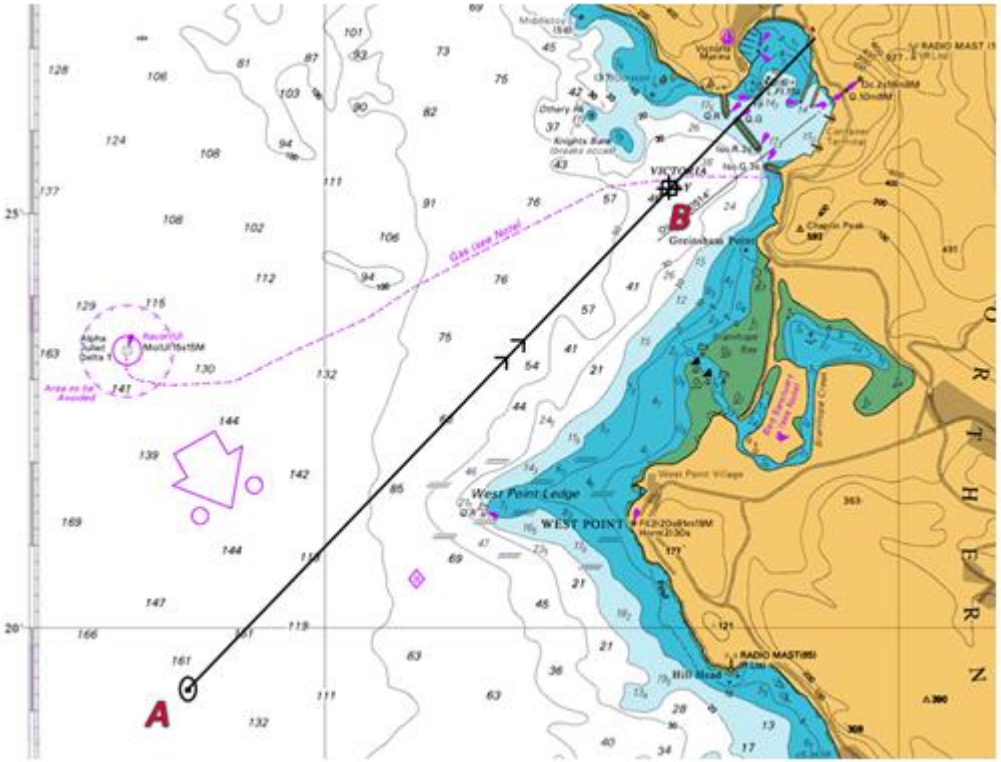
How long will it take?

Approximately how long will it take to travel 8 ½ miles if my speed is 9 knots?

...roughly one hour

What about the tide?

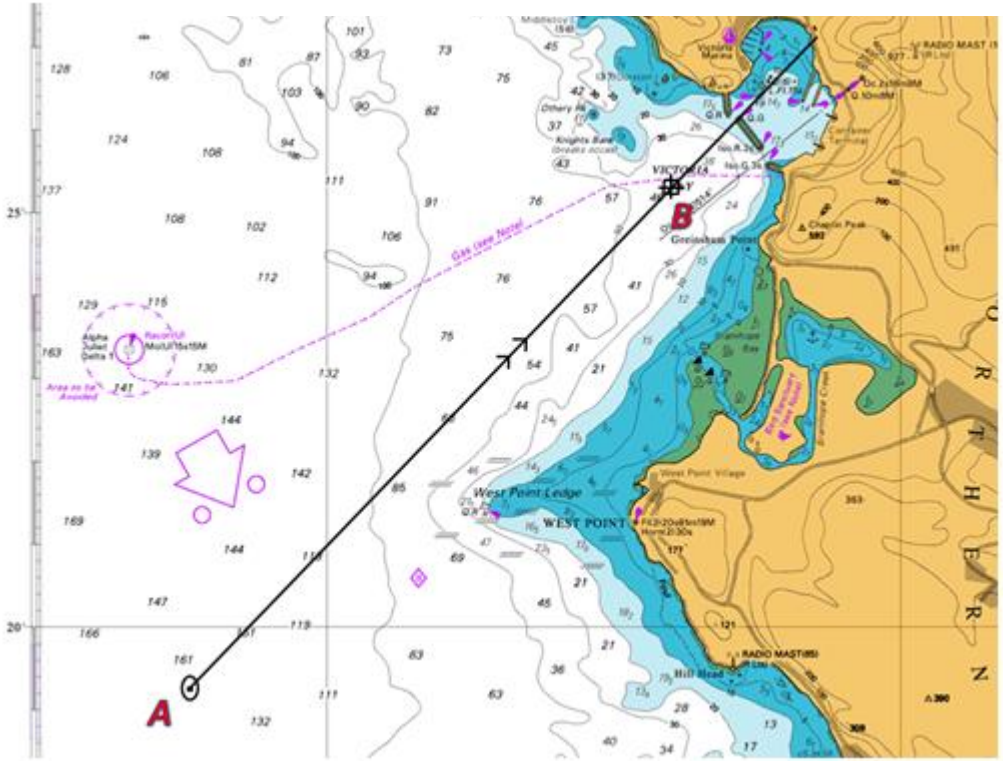
Leaving position A at 10.45 how will the tidal stream affect the passage for the next hour?



Working Out the Tidal Stream

Using RYA Chart 3 find the tidal reference port (Victoria)

Use the closest tidal diamond (B) to find the rate and direction



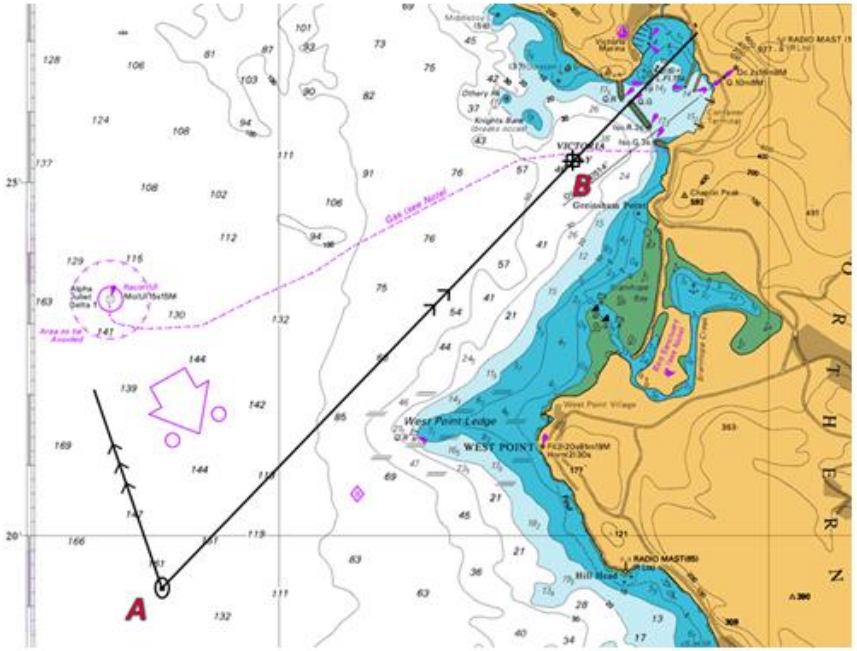
Now look up the tide tides for Victoria, find the time of HW and establish if it's springs or neaps

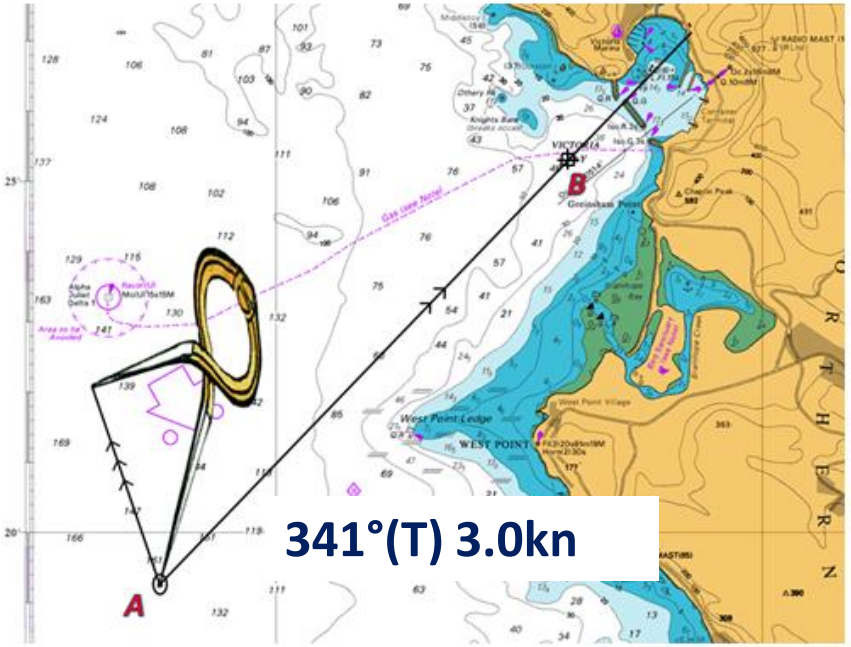
...Friday 24th HW Victoria
09.16 DST range 4.9m (springs)

Diamond B - 341°(T) 3.0kn

Plotting the Tidal Stream

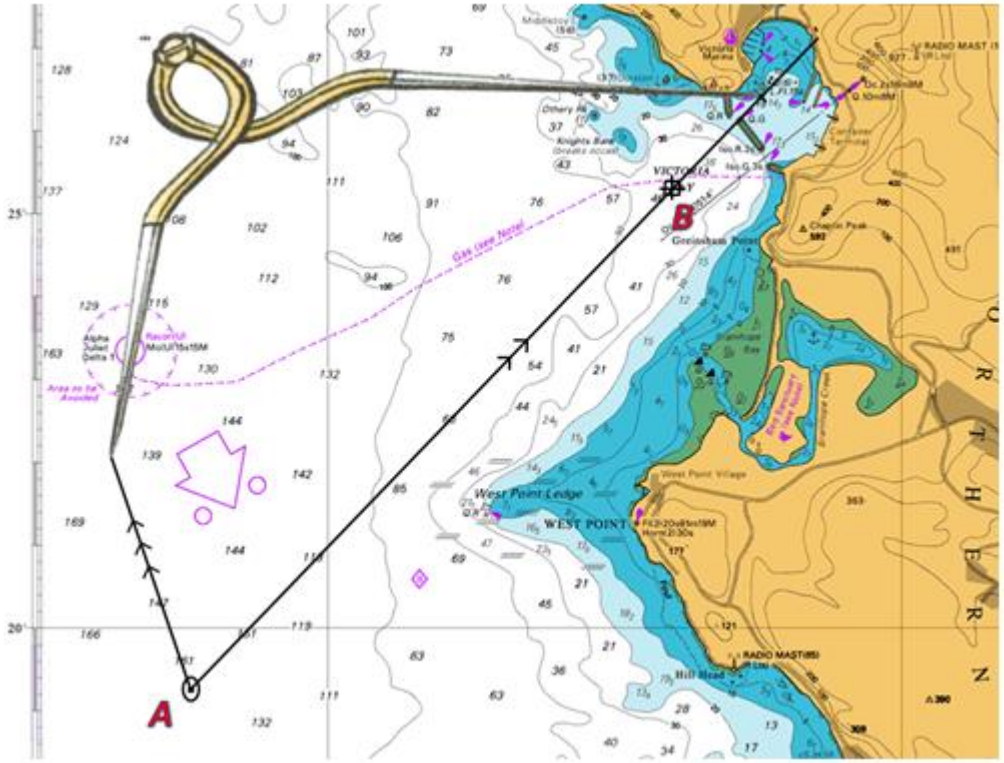
Plot the tidal stream at the start of the ground track





Plotting the Course to Steer

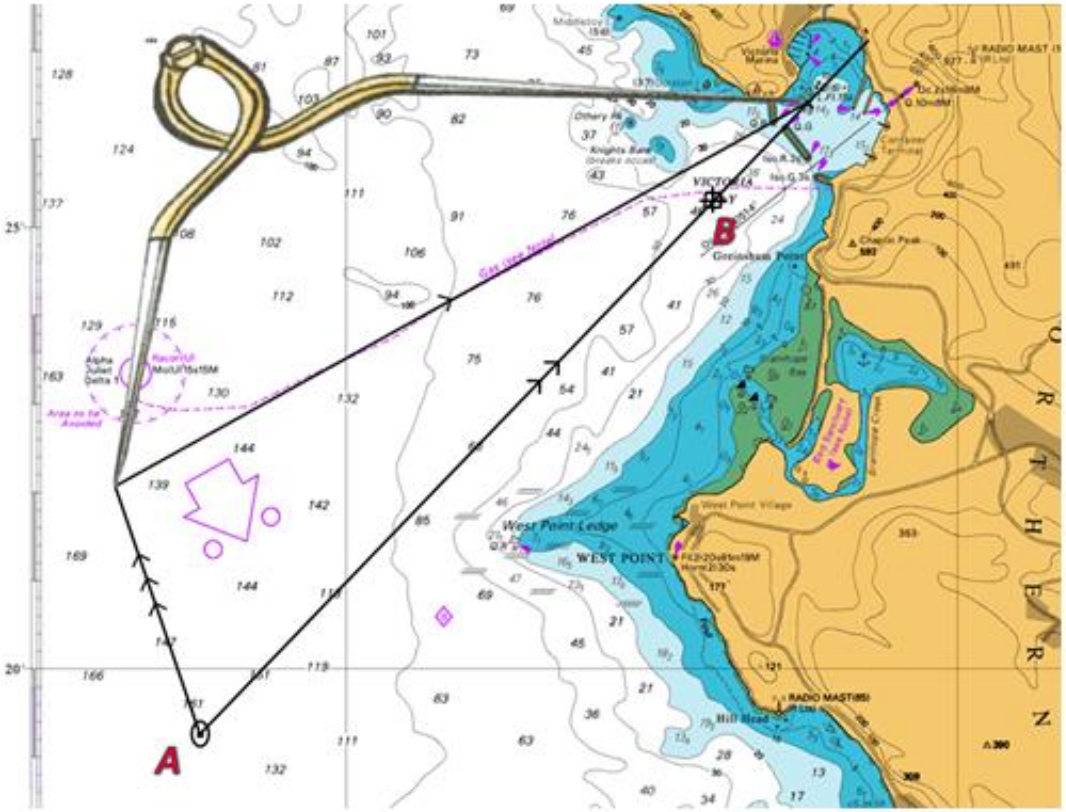
Place one point of the dividers on the end of the tidal stream and arc the other across the ground track



Then measure the expected boat speed for one hour (9kn/9M)

Plotting the Course to Steer

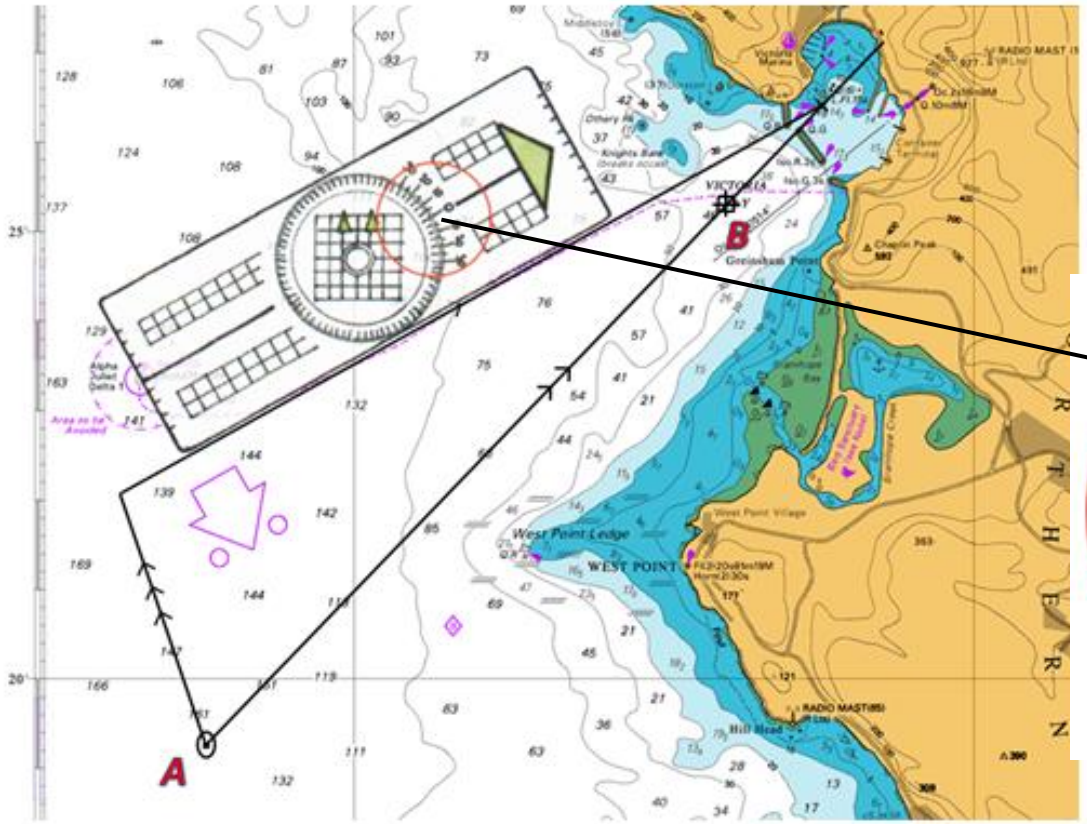
Draw in the water track



This will be your course to steer

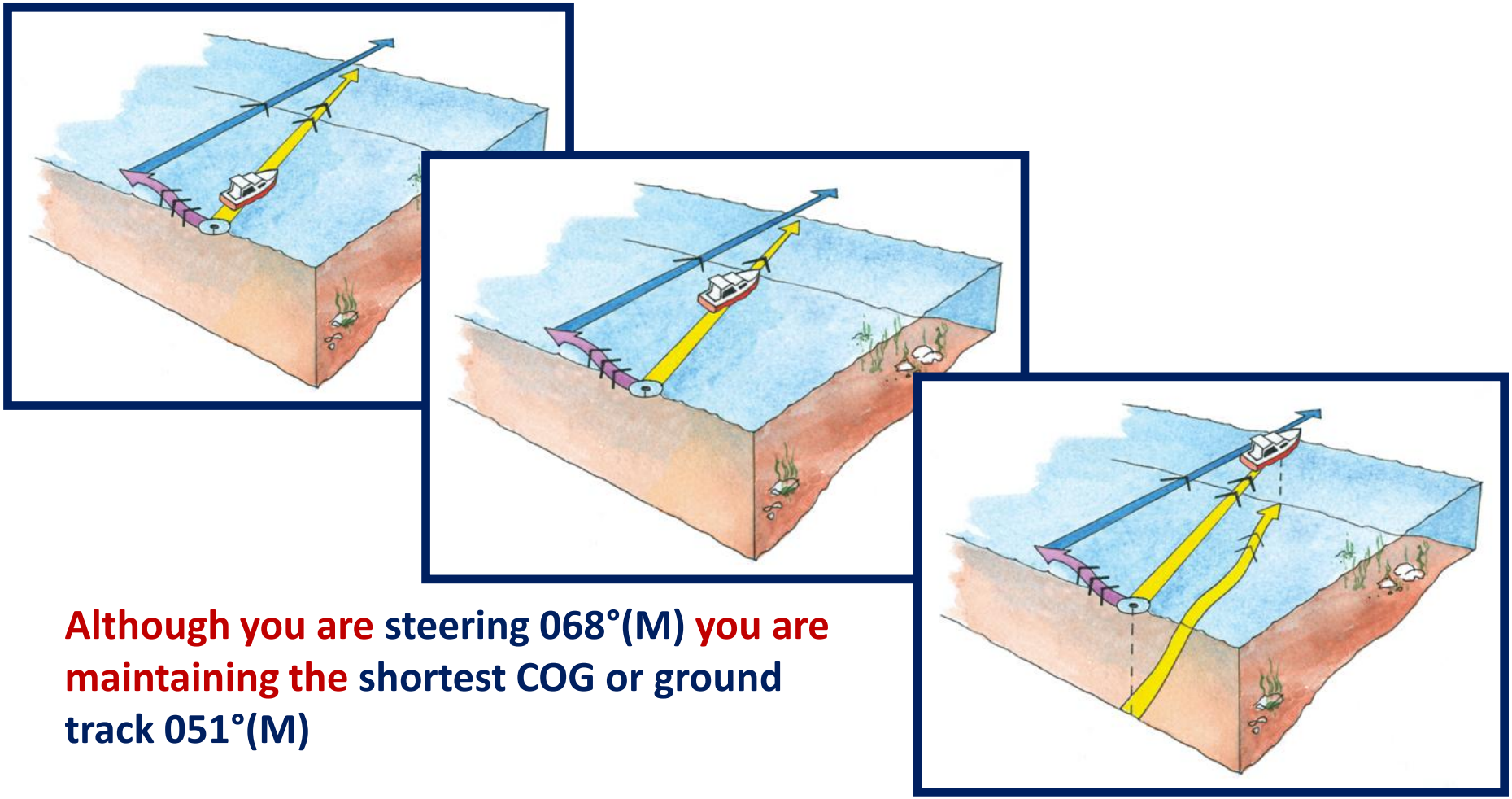
Plotting the Course to Steer

Now measure the direction of the water track and add the variation correction



061°(T)
+ 7° W variation
068°(M)

Summary



Although you are steering 068°(M) you are maintaining the shortest COG or ground track 051°(M)

Further Reading

We highly recommend Tim Bartlett's
RYA Navigation Handbook (G6)

You can buy a copy of this book by visiting our on-line shop

www.penguinsailing.com