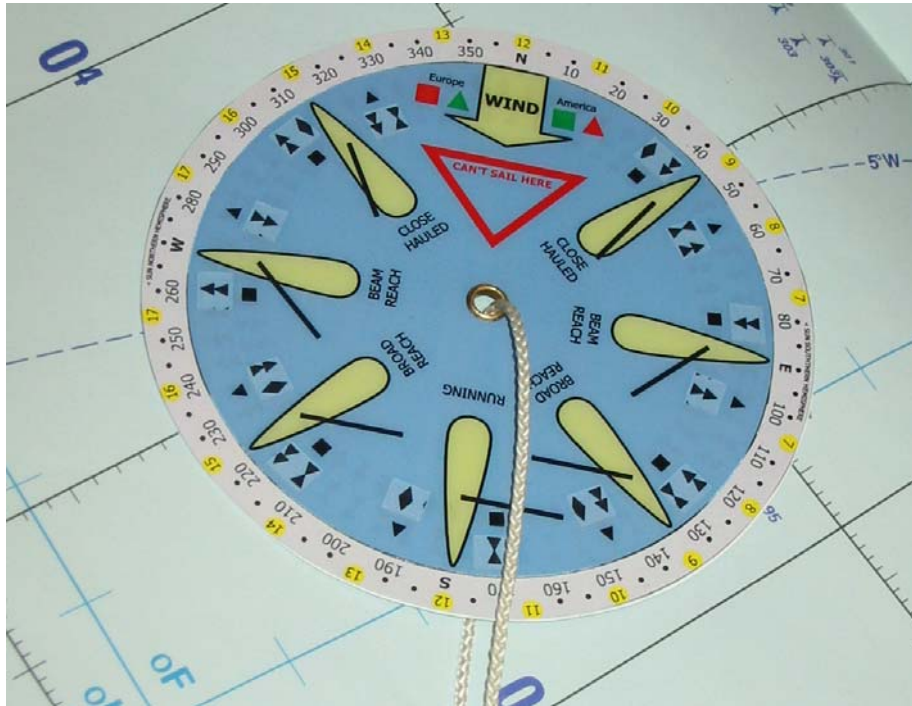


# CARDINAL SAIL COMPUTER



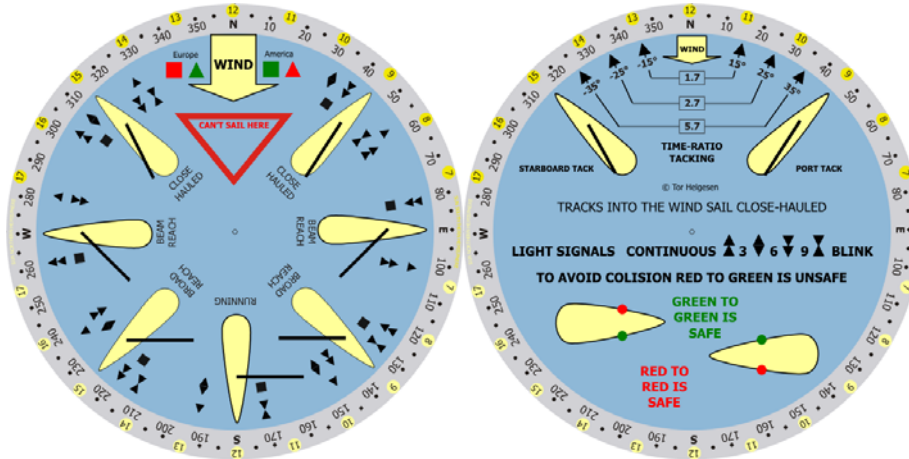
## Features:

- Indicate main sail position according to wind
- Indicate Cardinal Buoys according to track
- Indicate Cardinal light signals
- Indicate Lateral Buoys & regional differences
- Indicate the rules of the lanterns
- Navigational planning applications
- Shows position of the sun in relation to local time
- Indicate time ratios when tacking into the wind

# INSTRUCTIONS CARDINAL SAIL COMPUTER

PRIMARY SIDE

SECONDARY SIDE



## COMPASS ROSE WITH SUN INDICATIONS (BOTH SIDES)

The centre disk has a compass rose where you also can see the direction to the sun at different times (24h system), both for northern and the southern hemisphere.

## SAIL DIRECTIONS (PRIMARY SIDE)

When you adjust the actual wind direction in this computer, 7 different sail directions are illustrated on the computer, with indication of the mainsail boom alignment. Which side of the boat to have the navigational buoys are indicated for all 7 directions.

## NAVIGATIONAL BUOYS (PRIMARY SIDE)

**Lateral buoys** - indicate the side on which they may be safely passed.

**Cardinal buoys** - indicate the location of the safest or deepest water by reference to the cardinal points of the compass. There are four cardinal buoys: North, East, South and West.

## LATERAL BUOYS (PRIMARY SIDE)

**System A** is used by nations in Europe, Australia, New Zealand, parts of Africa and most of Asia other than the Philippines, Japan and Korea.

**System B** is used by nations in North America, Central America and South America, the Philippines, Japan and Korea.

In **System A**:

- port marks are **red** and may have a **red** flashing light.
- starboard marks are **green** and may have a **green** flashing light.

In **System B**:

- port marks are **green**, and may have a **green** flashing light.
- starboard marks are **red** and may have a **red** flashing light.

In **both systems**:

- port marks are square or have a flat top
- starboard marks are conical (or present a triangular shape) or have a pointed top.

## CARDINAL BUOYS (PRIMARY SIDE)

The four cardinal buoys indicate the safe side of a danger with an approximate bearing. For example, the West cardinal buoy has safe water on its West and the danger on its East side. Notice the 'clockwise' resemblance of the light phase characteristics. The top marks consist of two black triangles placed in accordance with the black/yellow scheme of the buoy. When a new obstacle (not yet shown on charts) needs to be marked, **two** cardinal buoys will be used to indicate this 'uncharted' danger. The cardinal system is identical in both the IALA A and IALA B buoyage systems.



## TACKING (SECONDARY SIDE)

Since you can't sail directly against the wind you have to perform tacking to make good a track into the wind. Sailing close-hauled against the wind does this. If you are going directly towards the wind then you have to spend equal amount of time to starboard and port tack. If you want to make good a track that is 25° starboard of the wind, then you should port-tack 2.7 times longer than you starboard-tack at indicated on the computer.

## LIGHT SIGNALS (SECONDARY SIDE)

The cardinal system has a light signal scheme associated to each of the 4 buoys. Where the North buoy transmit continuous blinks, East 3 blinks before pause, South 6 blink before pause and West 9 blink before pause.

The lantern lighting as indicated are also useful to think about in daytime since it shows who should continue, and who should divert to avoid collision. Remember if to boats are on a collision course the boat that see the green lantern on the other boat has been given a green light and can continue, while the other boat see a red light and have to divert his course.

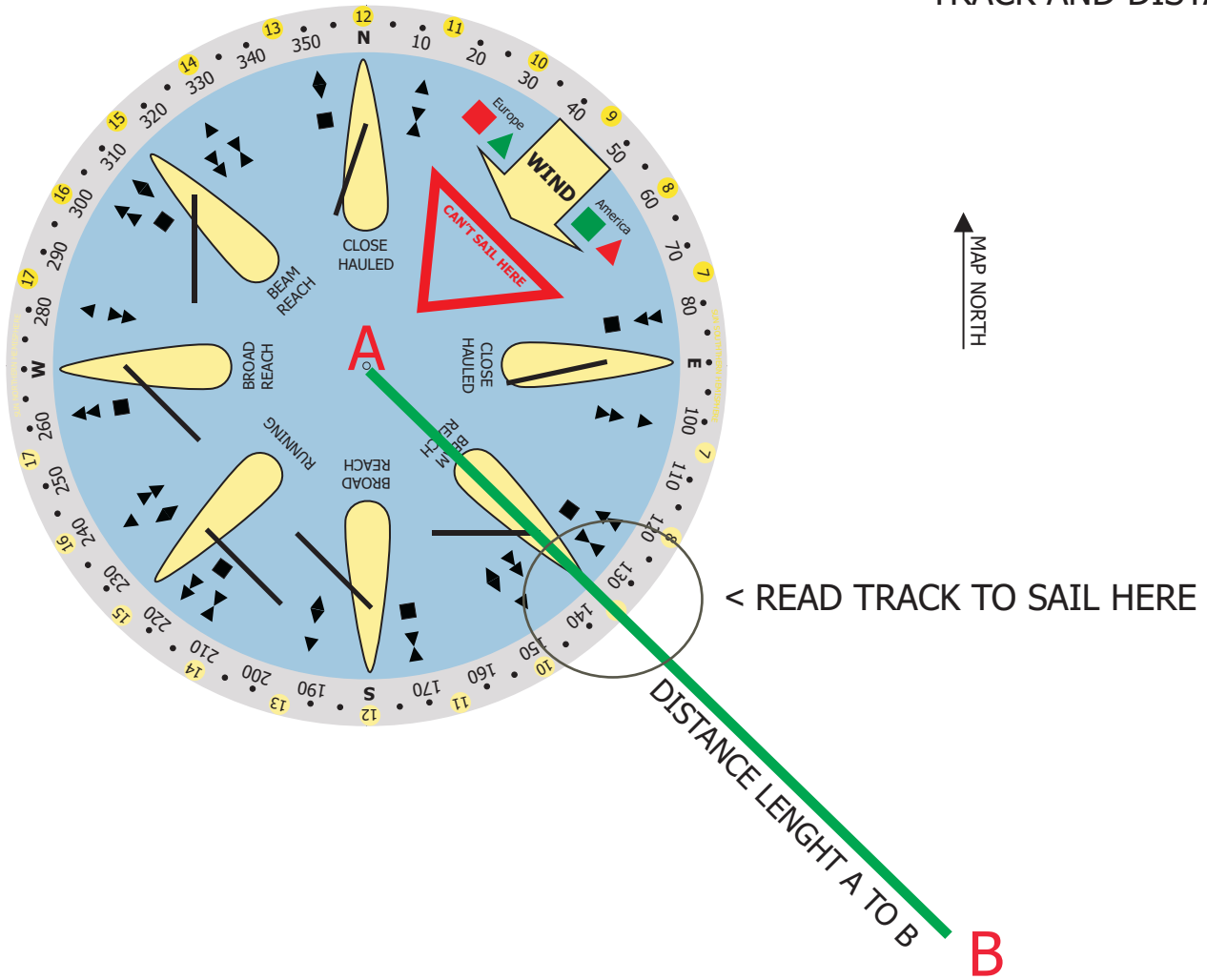
## NAVIGATION PLANNING (BOTH SIDES)

This computer can easily be used to find track and distance to sail, by adding a rope trough the centre of the computer. This rope should be made so that you also can use it to store the computer around your neck.

## FIND TRACK AND DISTANCE (BOTH SIDES)

To find the track put the computer on top of the map at the place you are sailing from, with North of the computer aligned with North of the map. Then stretch the rope towards where you want to sail. Then you can see which heading to sail where the rope meets the compass rose. Find the distance by aligning the distance of the rope used along the maps table of distance.

ALIGN THE COMPUTER NORTH OVER THE MAP THEN USE THE ROPE TO FIND TRACK AND DISTANCE



YOU HAVE THE WIND FROM 45°, AND WANT TO SAIL A TRACK OF 135°

**TRACK 135°**

SAIL BEAM REACH WITH NORTH AND EAST CARDINAL BUOYS ON STARBOARD SIDE, SOUTH AND WEST CARDINAL BUOYS ON PORT SIDE

