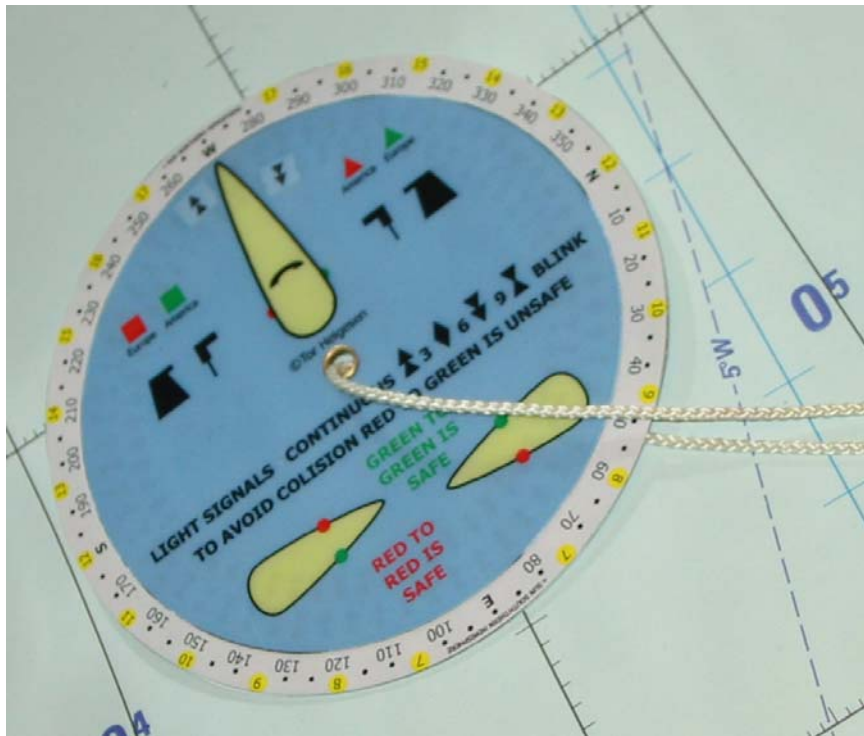# CARDINAL POWER COMPUTER

Features:

Indicate Cardinal Buoys according to track

Indicate Cardinal light signals

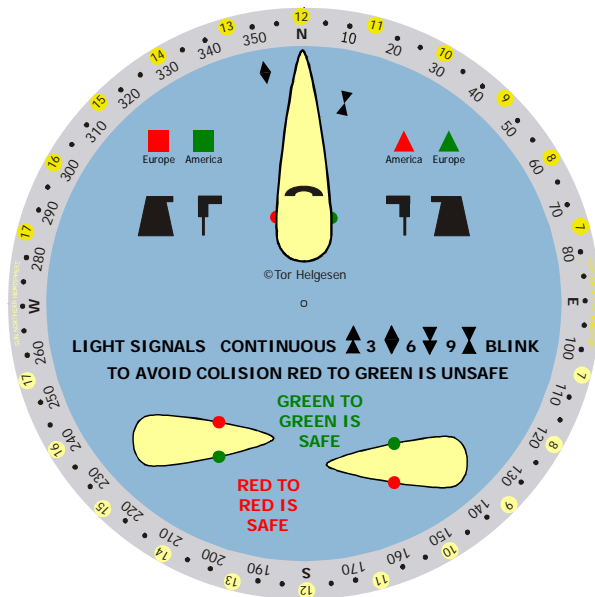Indicate Lateral Buoys & regional differences

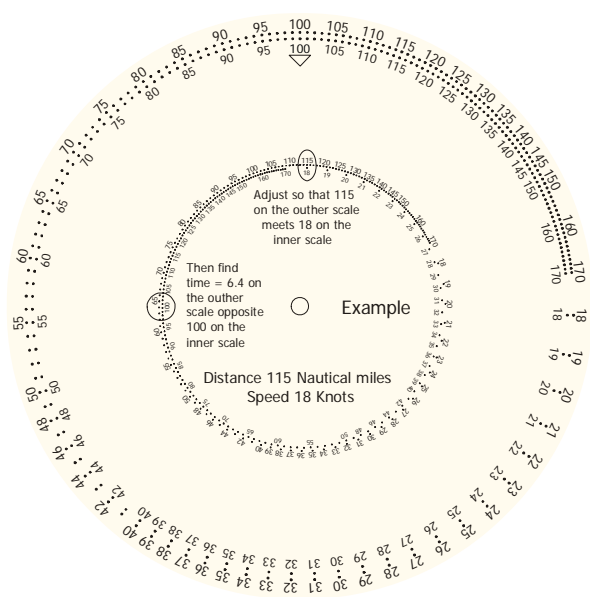Indicate the rules of the lanterns

Navigational planning applications

Shows position of the sun in relation to local time

Contain slide ruler for distance, speed & time
calculations

Europe   America

America   Europe

©Tor Helgesen

LIGHT SIGNALS CONTINUOUS ▲3 ◆6 ▼9 ▮ BLINK
TO AVOID COLISION RED TO GREEN IS UNSAFE

GREEN TO
GREEN IS
SAFE

RED TO
RED IS
SAFE

Adjust so that 115
on the outher scale
meets 18 on the
inner scale

Then find
time = 6.4 on
the outher
scale opposite
100 on the
inner scale

Example

Distance 115 Nautical miles
Speed 18 Knots

COMPASS ROSE WITH SUN INDICATIONS (PRIMARY SIDE)

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

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.
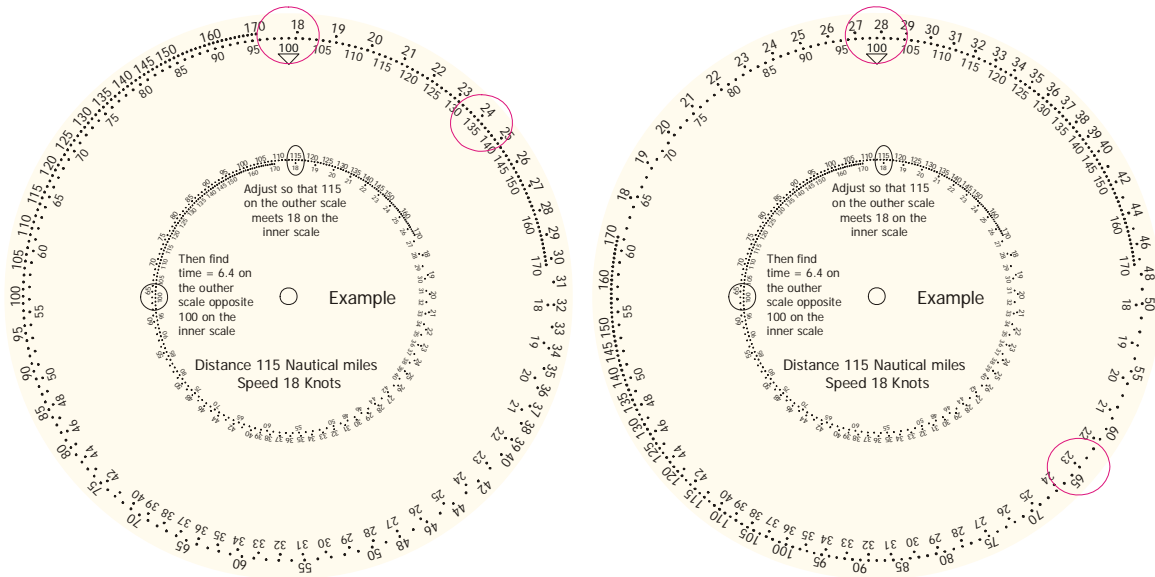•starboard marks are **green** and may have a **green** flashing light.
In **System B**:
•port marks are **green**, and may have a **green** flashing light.
•starboard marks are **red** and may have a **red** flashing light.

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.

LIGHT SIGNALS (PRIMARY 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 se 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 (PRIMARY 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 (PRIMARY 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.

CALCULATOR (SECONDARY SIDE)

For calculation of time when you know the distance and speed use the slide ruler. An example of how is illustrated on the top disk of the computer. This is slide ruler that can multiply and divide to number at the time. This will work for all numbers were to place the decimal sign have to be by using common sense since 100 is 10 or 10000.

This shows how to calculate time. First example distance 240 nm and 13,5 knots give time 18. Next example distance 64 nm and 23 knots give time 2,8.

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. In this example track to sail is 140. The rope (A to B) represents the distance.