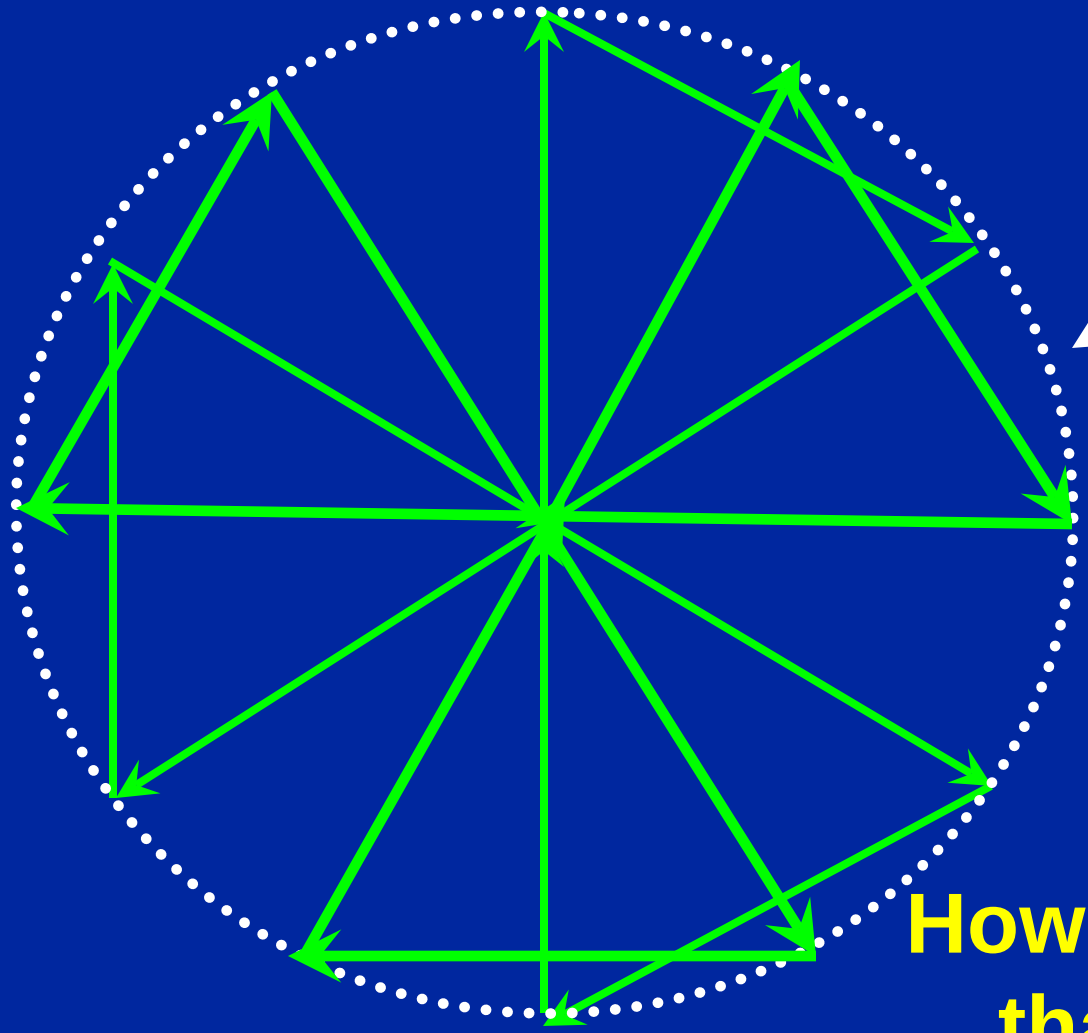
# Sector Search Pattern

# Sector Search

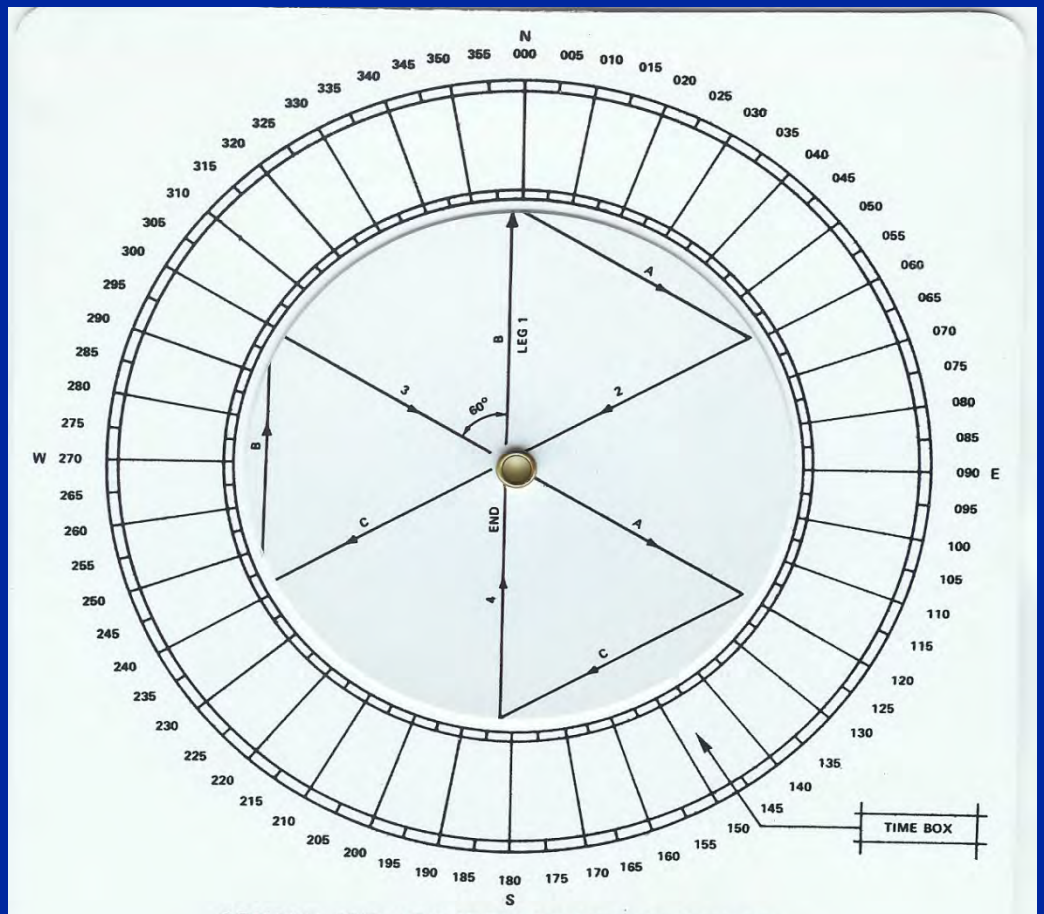
Characteristics:

- Used in small search areas
- There is a good starting point
- Small search objects

# Sector Search




**How do we do that ????**




**COURSE AND LEG IDENTIFIER FOR SECTOR SEARCH PATTERNS–(VS)–60° CENTRAL ANGLES**

TIME AND DISTANCE TABLE

SPEED

| NAUTICAL MILES | 5Kts | 8Kts | 10Kts | 12Kts | 15Kts | 18Kts | 20Kts |
|---|---|---|---|---|---|---|---|
| | M:S | M:S | M:S | M:S | M:S | M:S | M:S |
| .5 | 6:00 | 3:45 | 3:00 | 2:30 | 2:00 | 1:40 | 1:30 |
| 1 | 12:00 | 7:30 | 6:00 | 5:00 | 4:00 | 3:20 | 3:00 |
| 1.5 | 18:00 | 11:15 | 9:00 | 7:30 | 6:00 | 5:00 | 4:30 |
| 2 | 24:00 | 15:00 | 12:00 | 10:00 | 8:00 | 6:40 | 6:00 |
| 2.5 | 30:00 | 18:45 | 15:00 | 12:30 | 10:00 | 8:20 | 7:30 |
| 3 | 36:00 | 22:30 | 18:00 | 15:00 | 12:00 | 10:00 | 9:00 |
| 3.5 | 42:00 | 26:15 | 21:00 | 17:30 | 14:00 | 11:40 | 10:30 |
| 4 | 48:00 | 30:00 | 24:00 | 20:00 | 16:00 | 13:20 | 12:00 |
| 4.5 | 54:00 | 33:45 | 27:00 | 22:30 | 18:00 | 15:00 | 13:30 |
| 5 | 60:00 | 37:30 | 30:00 | 25:00 | 20:00 | 16:40 | 15:00 |
| 5.5 | | 41:15 | 33:00 | 27:30 | 22:00 | 18:20 | 16:30 |
| 6 | | 45:00 | 36:00 | 30:00 | 24:00 | 20:00 | 18:00 |
| 6.5 | | 48:45 | 39:00 | 32:30 | 26:00 | 21:40 | 19:30 |
| 7 | | 52:30 | 42:00 | 35:00 | 28:00 | 23:20 | 21:00 |
| 7.5 | | 56:15 | 45:00 | 37:30 | 30:00 | 26:00 | 22:30 |
| 8 | | | 48:00 | 40:00 | 32:00 | 26:40 | 24:00 |
| | M:S | M:S | M:S | M:S | M:S | M:S | M:S |

M = MINUTES

S = SECONDS

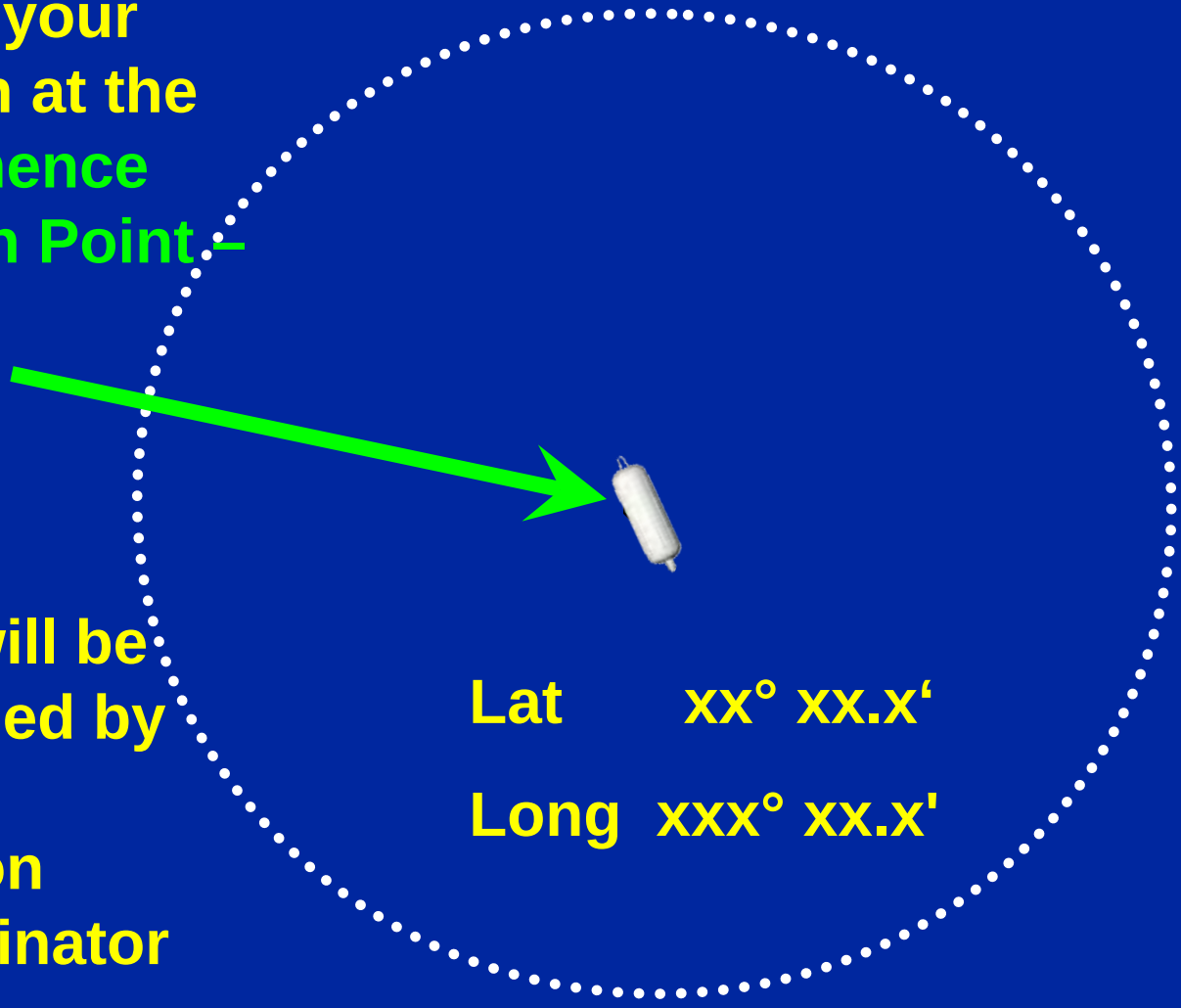
1. PLACE LEG NUMBER 1 INDEX ON HEADINGS OF FIRST SEARCH LEG.
2. THE LETTERS ON THE CROSS LEGS INDICATE THE NUMBERS PARALLEL RADIAL LEG FOR DETERMINING EACH CROSS LEG HEADING.

We use our:

Sector Search Pattern Plotting Aid

# Sector Search

- **Begin your search at the Commence Search Point – CSP**
- **This will be provided by SAR Mission Coordinator (SMC)**

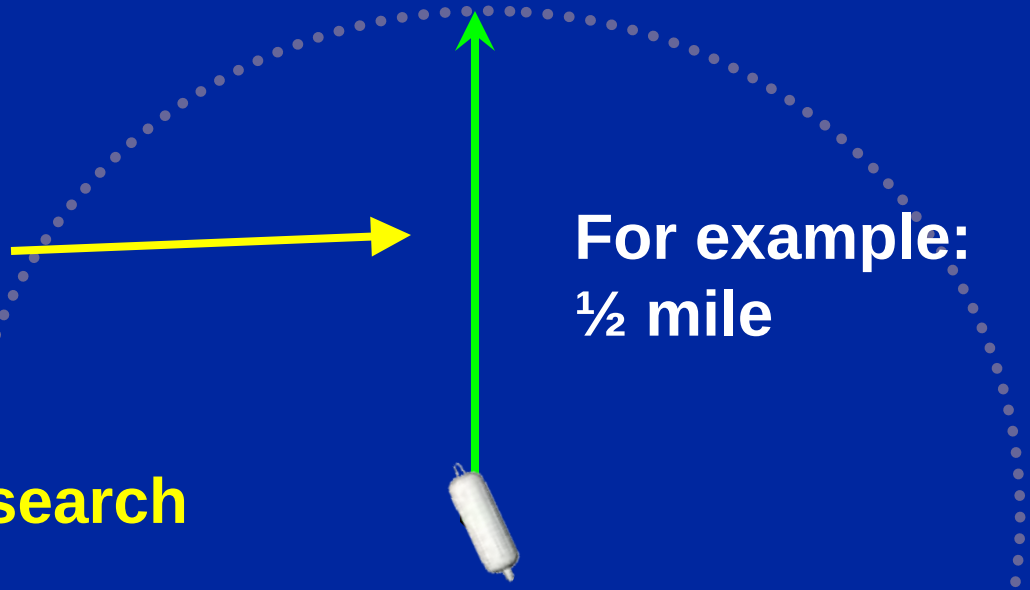



**Drop a floating object such as a boat cushion or fender at the CSP when you begin the search**

# Sector Search

- **The SMC will also provide Track Spacing or radius**

- **Using your search plotting aid, calculate the <u>time</u> for running a search leg based on the distance of the radius and the speed you will go**



**For example: ½ mile**

**If I run the search at 5 knots, how long must I run to go ½ mile?**

**Speed is how fast your boat will run during the search**

## TIME AND DISTANCE TABLE

SPEED

| NAUTICAL MILES | 5Kts | 8Kts | 10Kts | 12Kts | 15Kts | 18Kts | 20Kts |
|---|---|---|---|---|---|---|---|
| | M:S | M:S | M:S | M:S | M:S | M:S | M:S |
| .5 | 6:00 | [illegible] | 3:00 | 2:30 | 2:00 | 1:40 | 1:30 |
| 1 | 12:00 | 7:30 | [illegible] | 5:00 | 4:00 | 3:20 | 3:00 |
| 1.5 | 18:00 | 11:15 | 9:00 | [illegible] | 6:00 | 5:00 | 4:30 |
| 2 | 24:00 | 15:00 | 12:00 | 10:00 | [illegible] | 6:40 | 6:00 |
| 2.5 | 30:00 | 18:45 | 15:00 | 12:30 | 10:00 | [illegible] | 7:30 |
| 3 | 36:00 | 22:30 | 18:00 | 15:00 | 12:00 | 10:00 | [illegible] |
| 3.5 | 42:00 | 26:15 | 21:00 | 17:30 | 14:00 | 11:40 | 10:30 |
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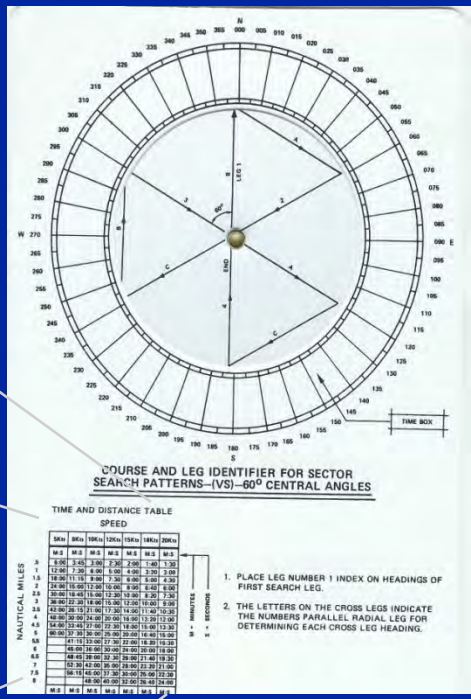
| | M:S | M:S | M:S | M:S | M:S | M:S | M:S |

M = MINUTES

S = SECONDS

1

2

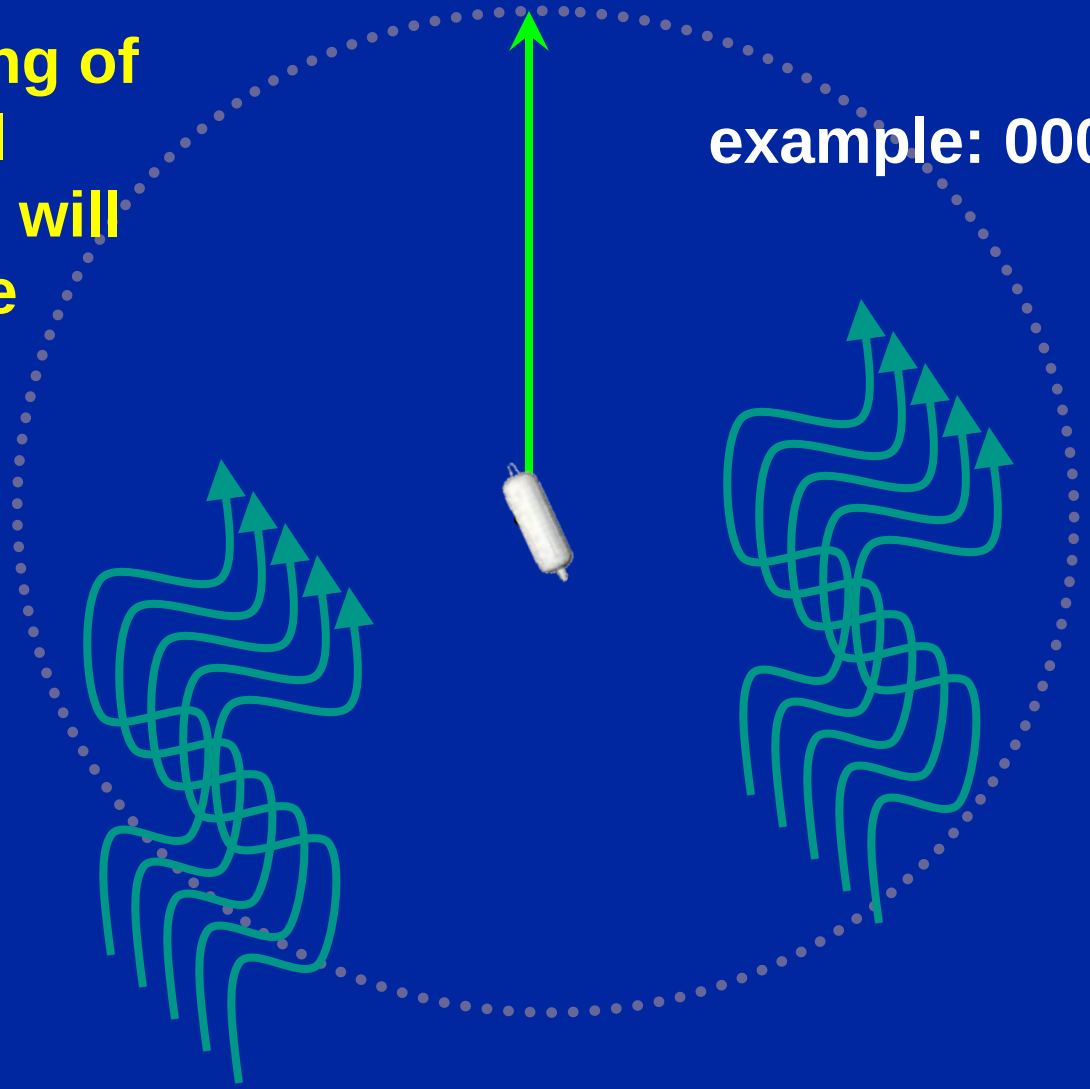


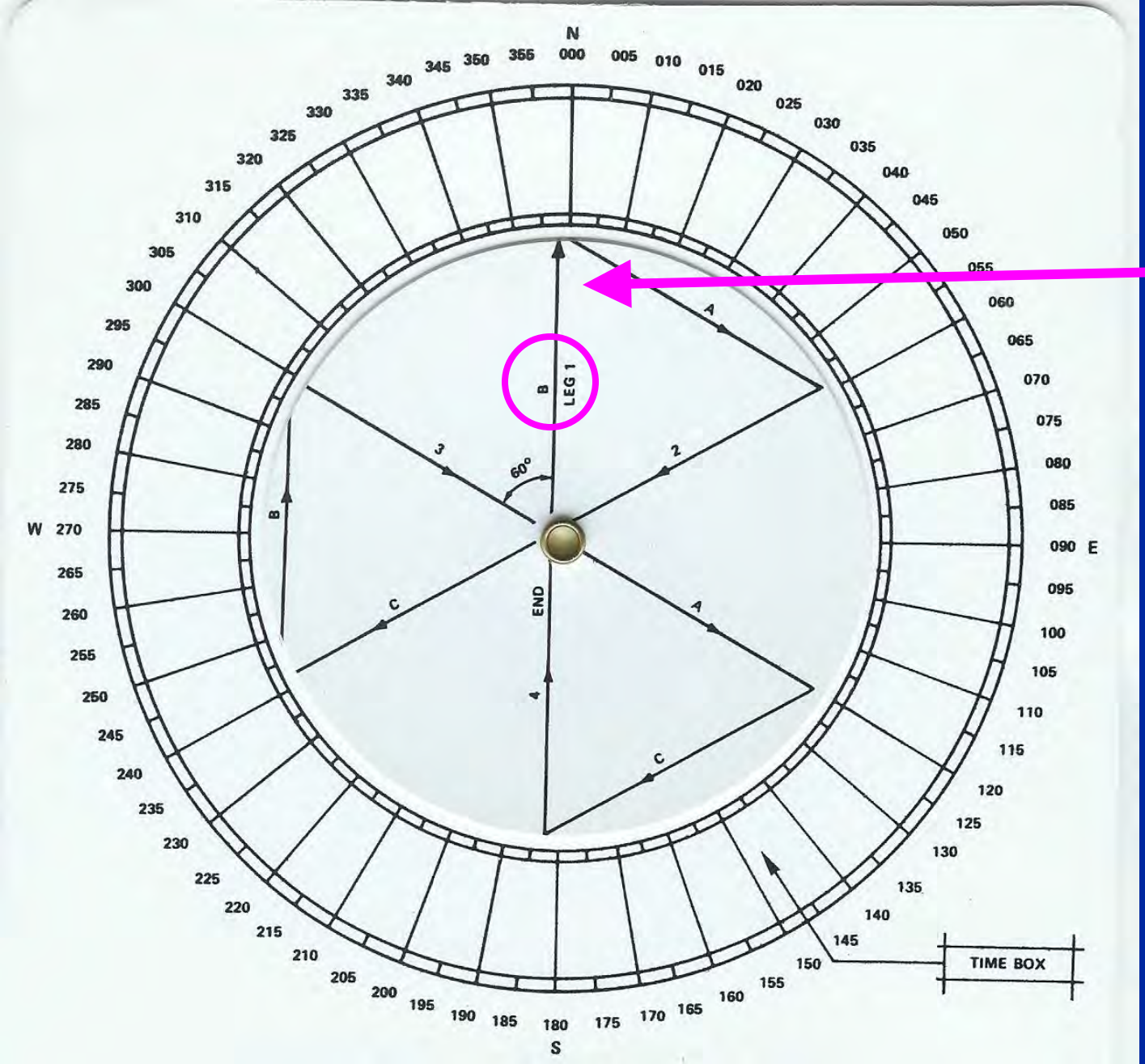

**The intersection indicates how many minutes you will run on a search leg.** In our example this is 6 minutes.

**Nautical Miles is the radius given by the SMC**

# Sector Search

- **The heading of your initial search leg will be with the current**





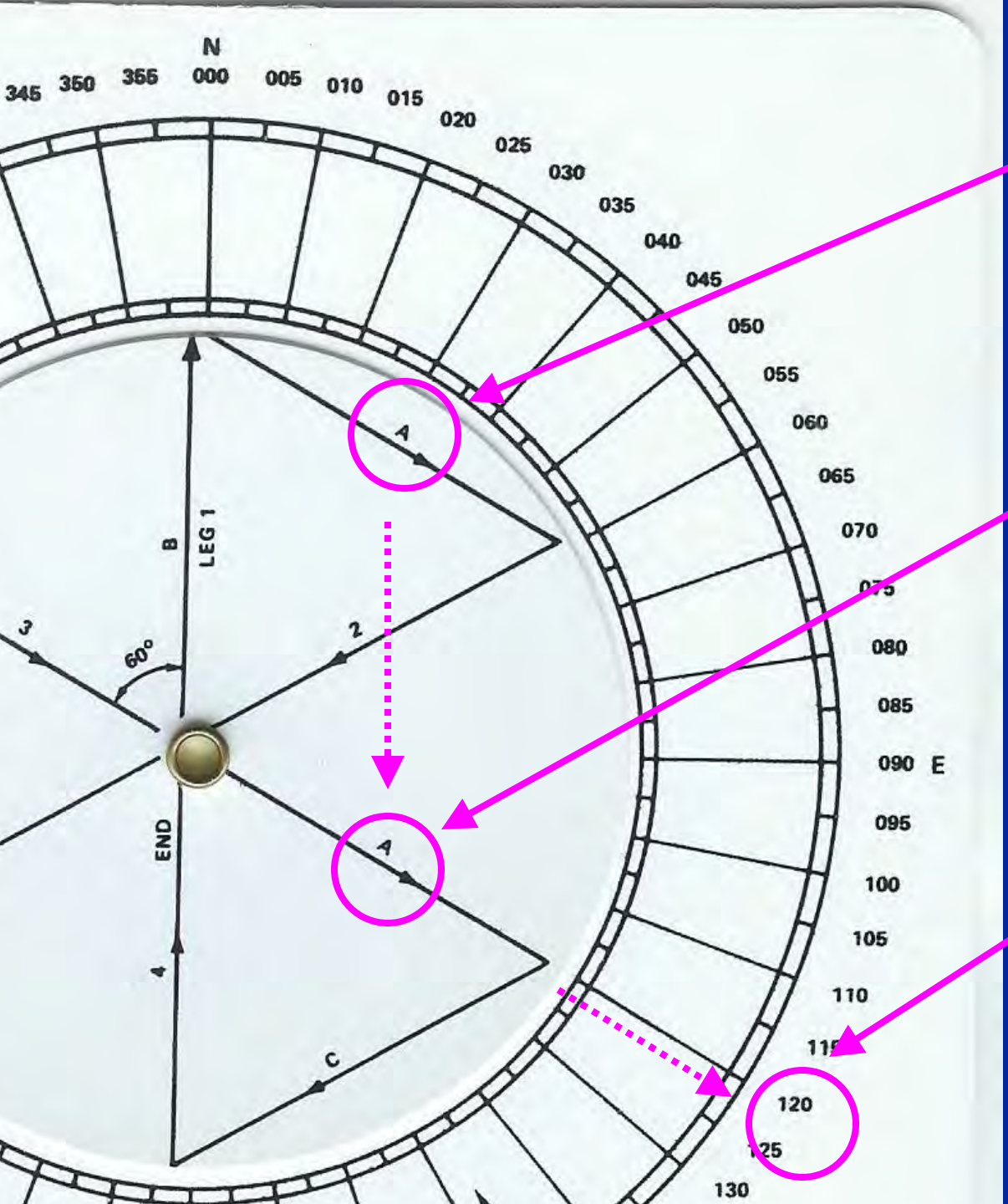

**Rotate the dial on your plotter until the arrow for LEG 1 is pointing to the heading that the current is flowing**

**This will be your initial heading**

**In our example this is 000°**

# Sector Search

- **Run the first leg for the time and at the speed you calculated**
- **At the end of your calculated time, turn right 120 ° (all turns are 120° to the right)**
- **Use your plotting aid to find your new heading**




The heading you should follow on this cross leg is found by taking the letter of the leg you are on, in this case A

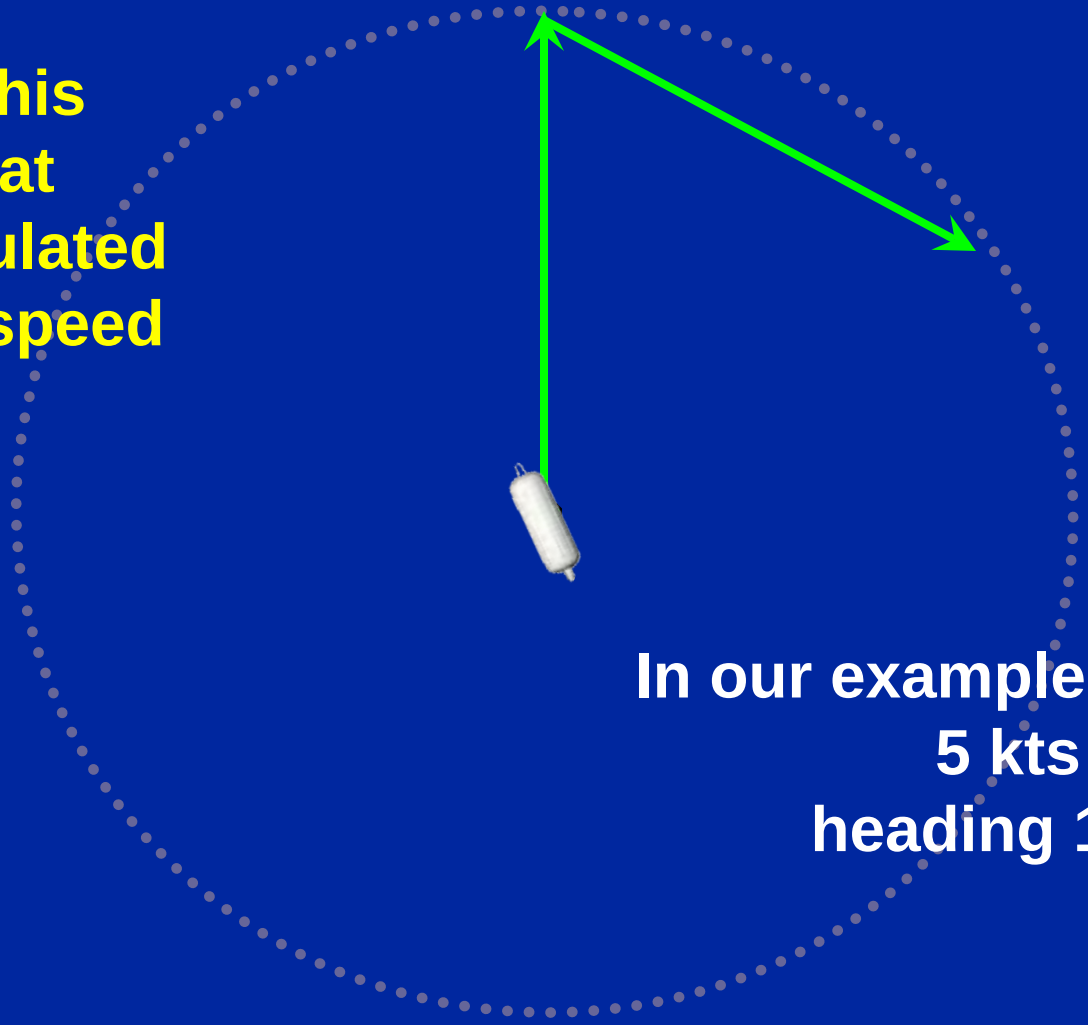
And carrying it down to the line with the same letter that passes through the center of the dial

Follow this line out to the edge of the dial to get your course heading

In our example, 120 °

# Sector Search

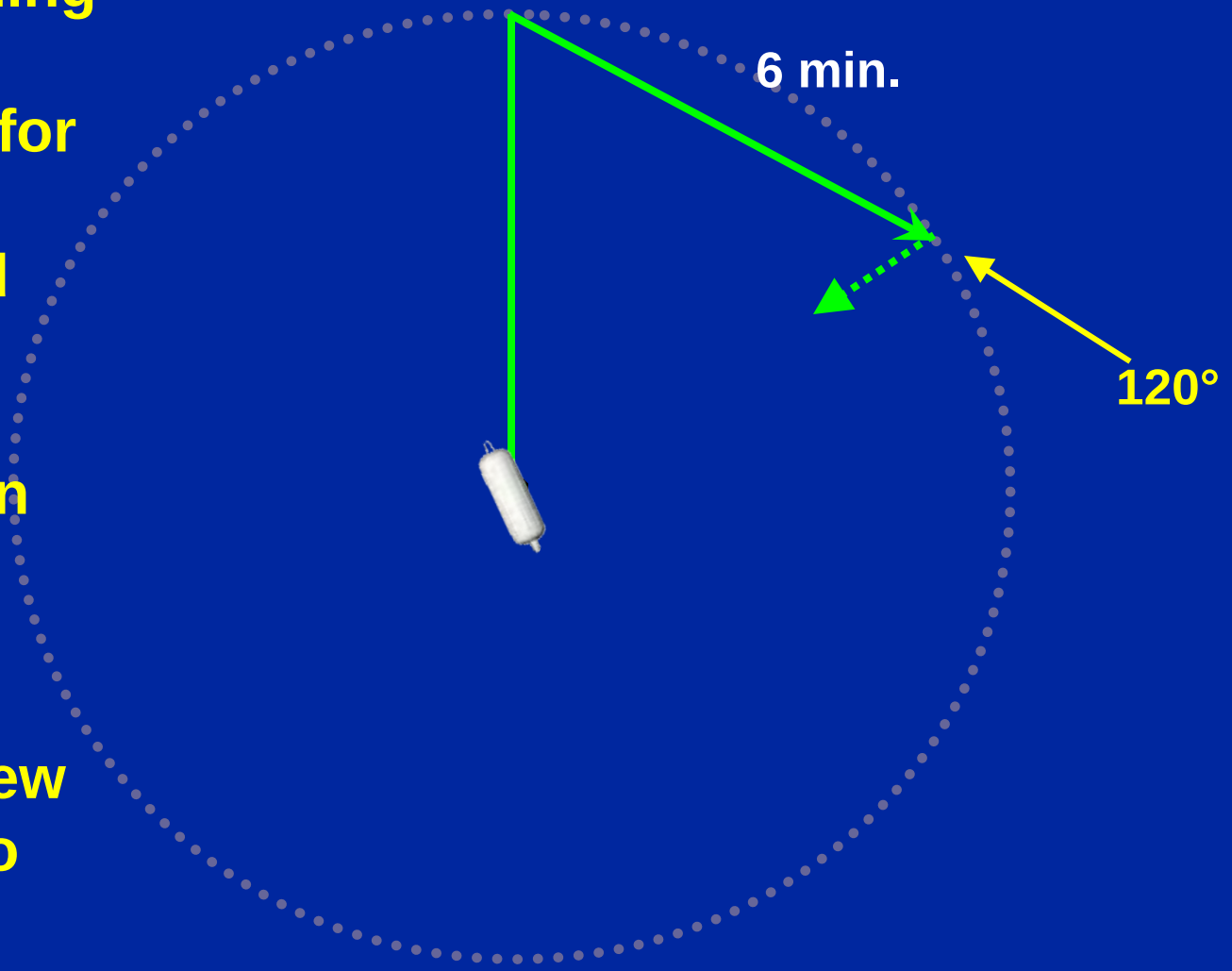
- **Now run this cross leg at your calculated time and speed**

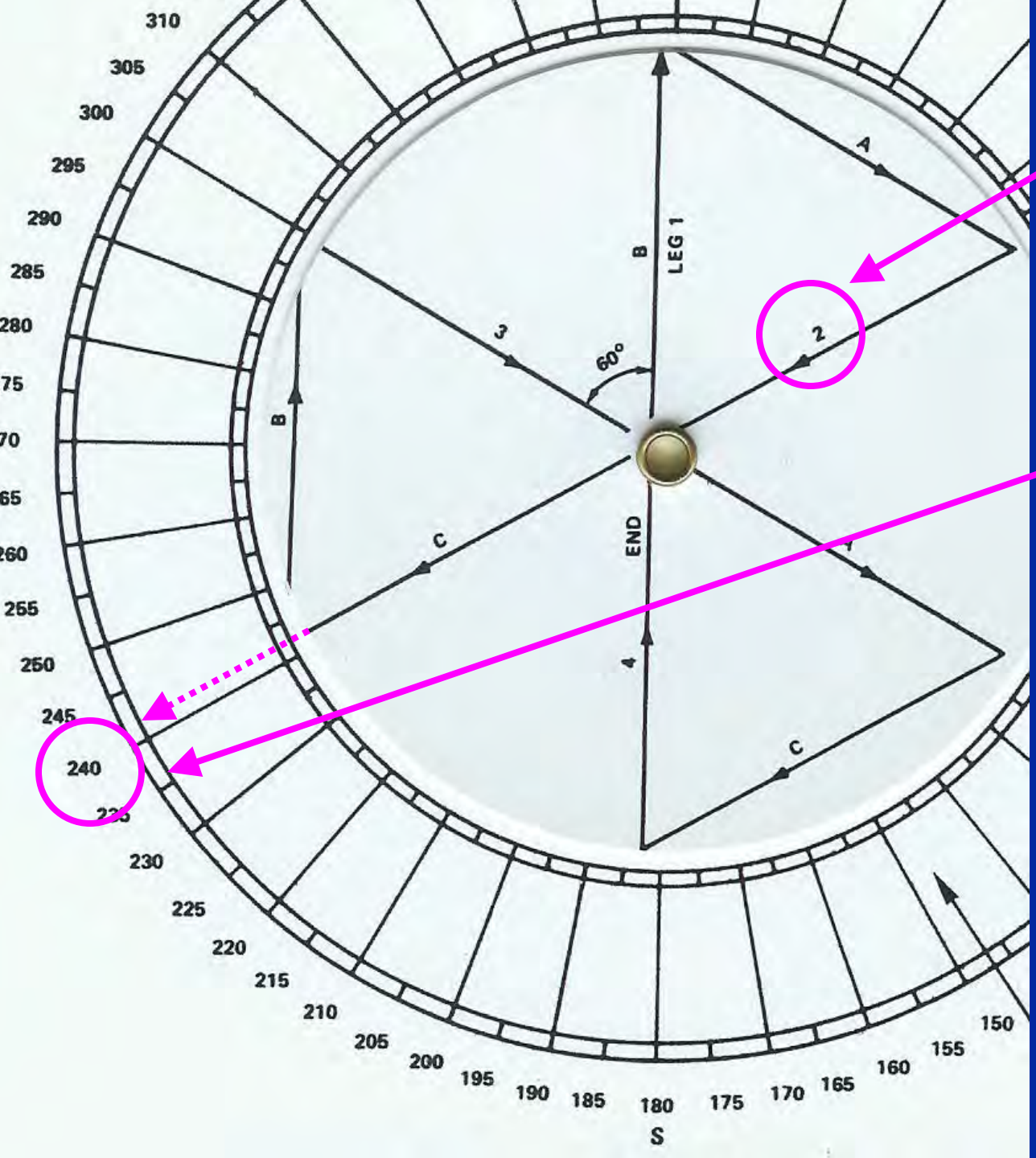


**In our example, 6 min. at 5 kts heading 120°**

# Sector Search

- **After running this first cross leg for your calculated time, turn right 120° once again**
- **Use your plotter to find the new heading to follow**





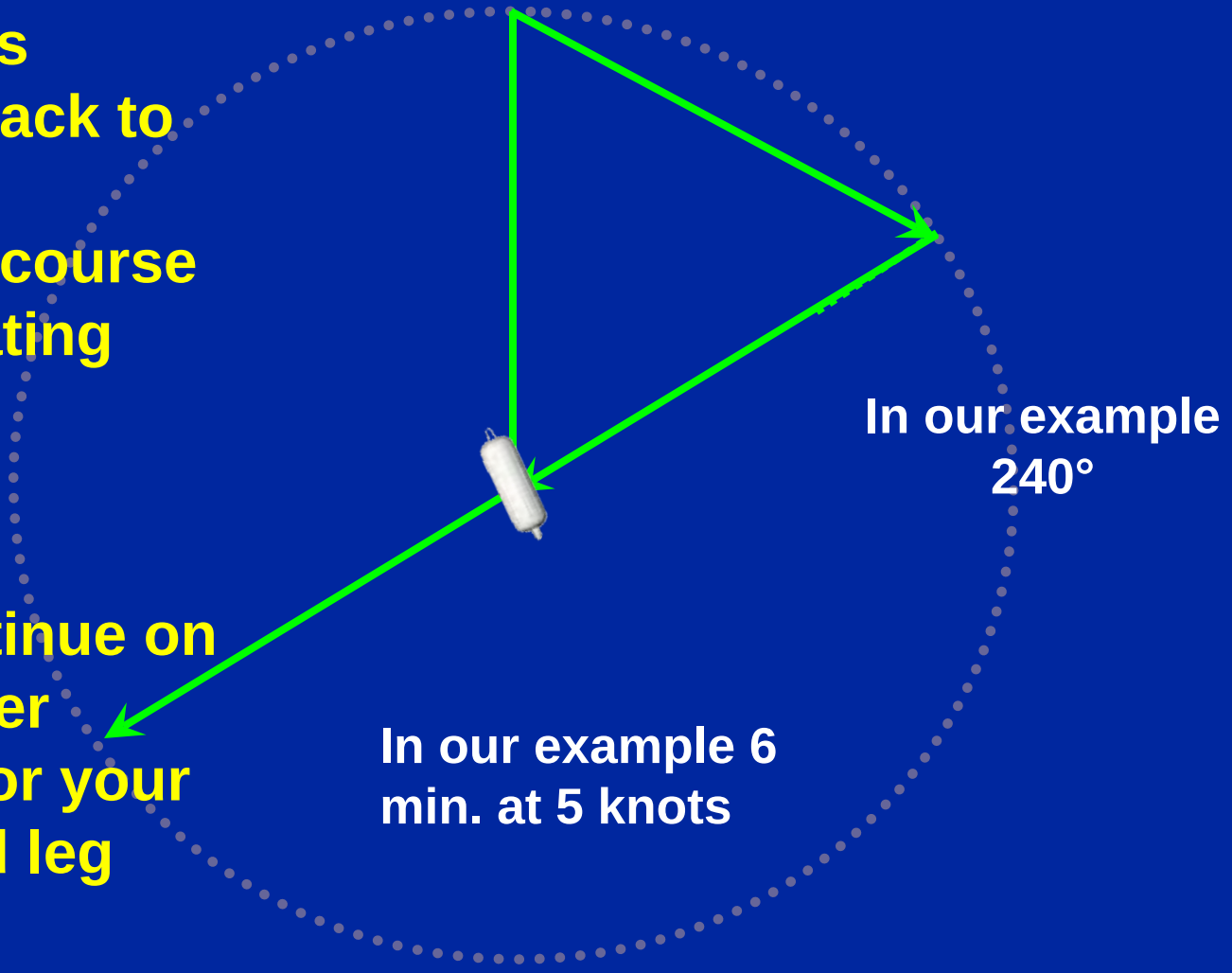

Now you are on a leg that runs through the center dial

To find the heading to follow when this is the case, just read the line across the dial

In our example, 240°

# Sector Search

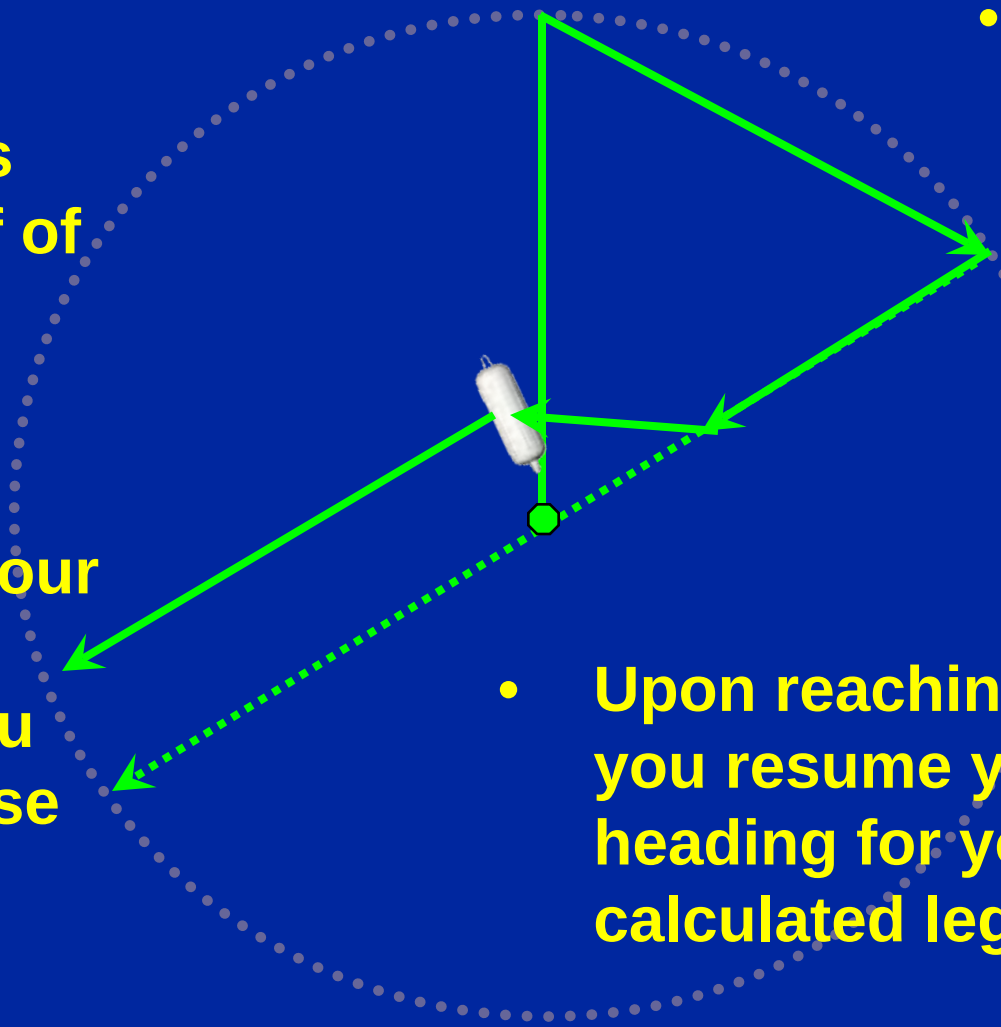
- **Follow this heading back to the CSP adjusting course to the floating object**




- **Then continue on your plotter heading for your calculated leg run time**

# Sector Search

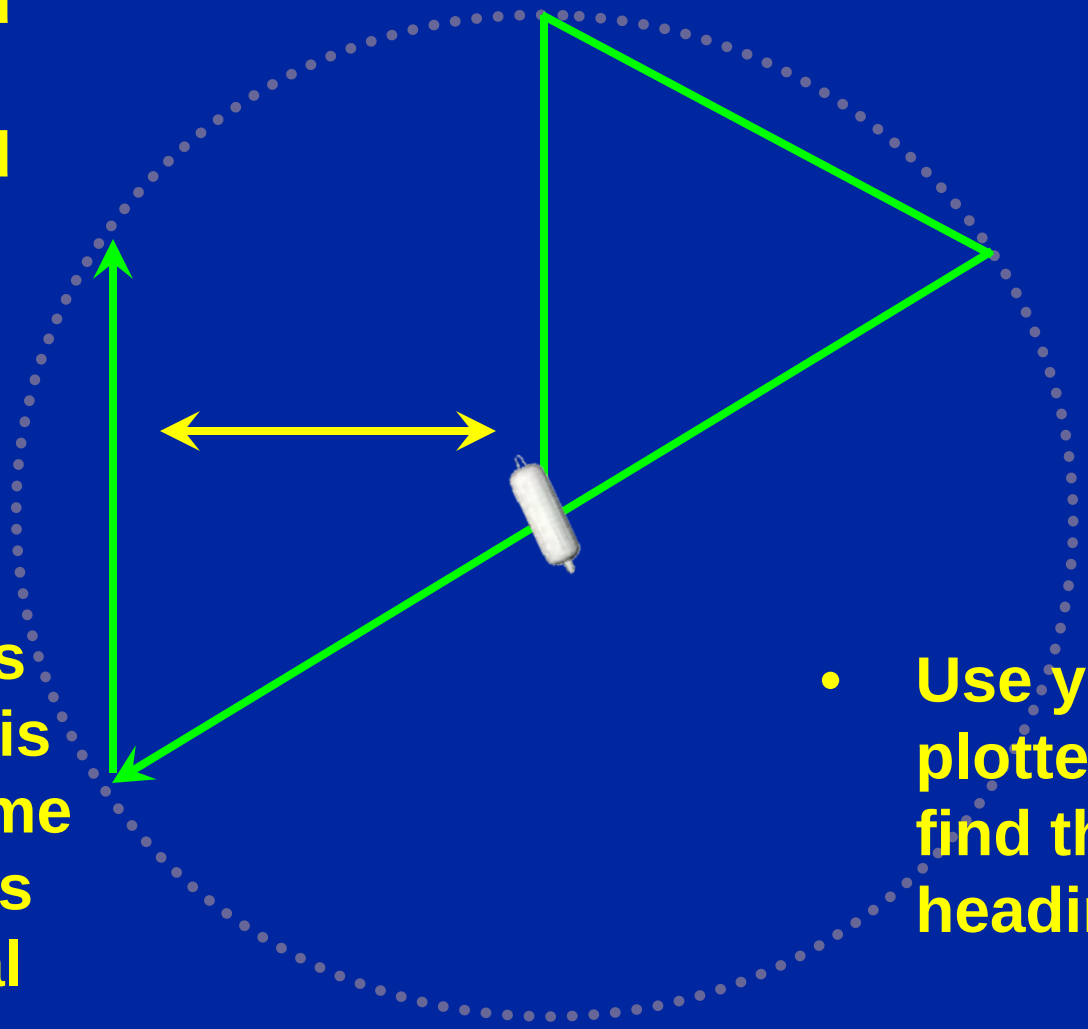
- If your floating object has moved off of the CSP
- Once you observe your floating object, you alter course toward it



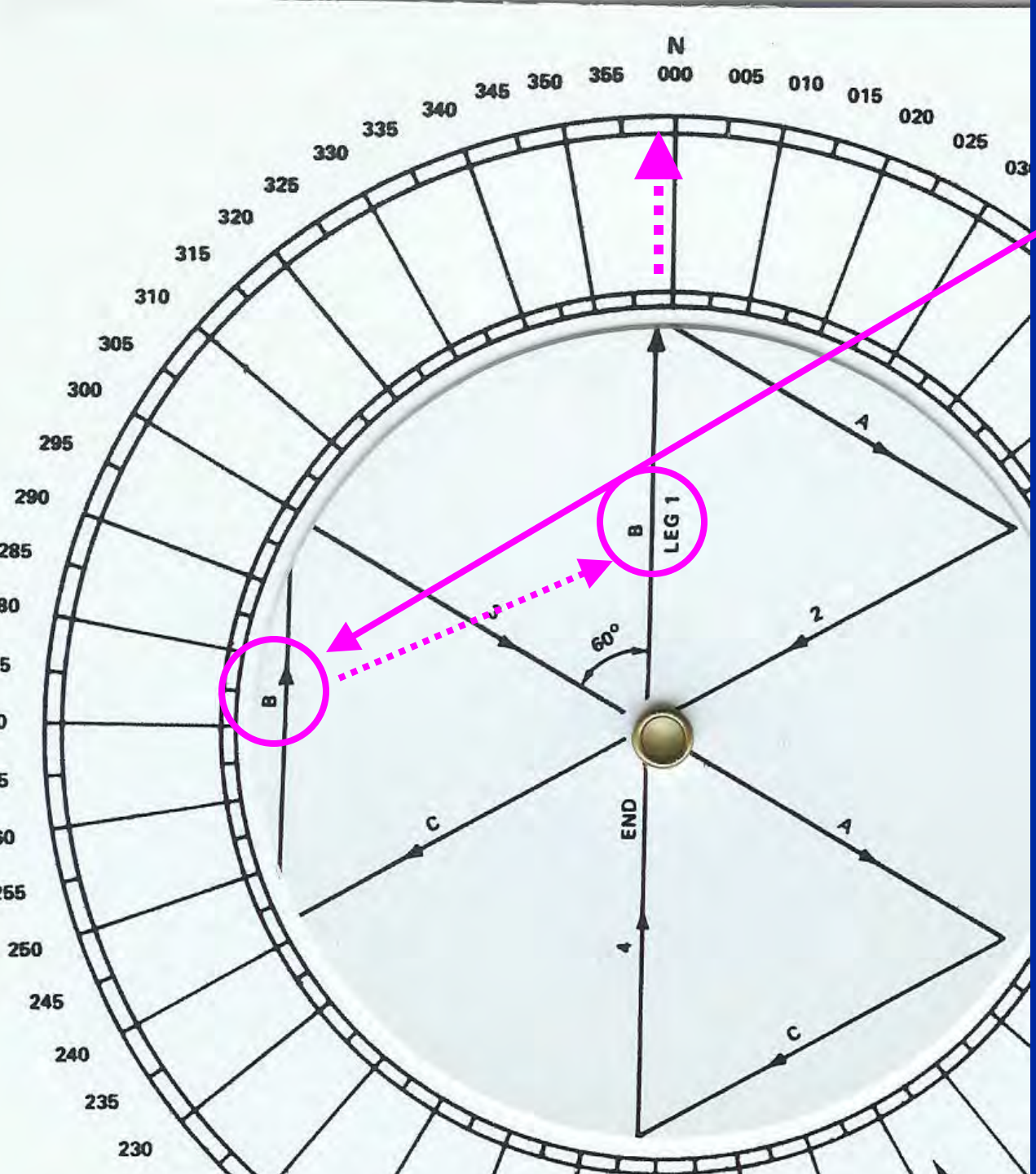
- You begin this leg on the heading shown on your plotting aid; in our example, 240°
- Upon reaching the object, you resume your plotted heading for your calculated leg run time

# Sector Search

- **At the end of your calculated run time, turn right 120° again**



- **Notice this cross leg is on the same heading as your initial leg**
- **Use your plotter to find this heading**




The heading you should follow on this cross leg is found by taking the letter of the leg you are on, in this case B

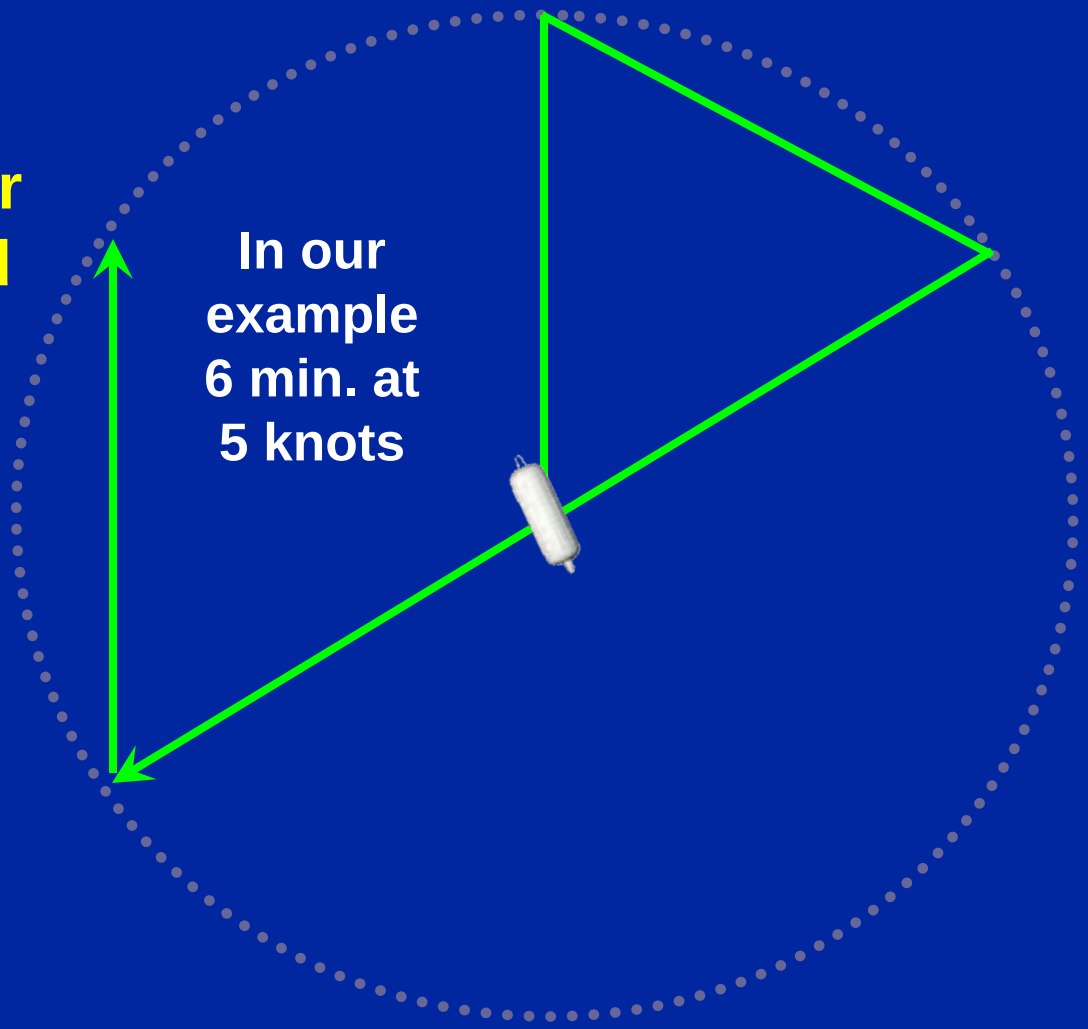
And carrying it over to the line with the same letter that passes through the center of the dial

Follow this line out to the edge of the dial to get your course heading

In our example, 000°

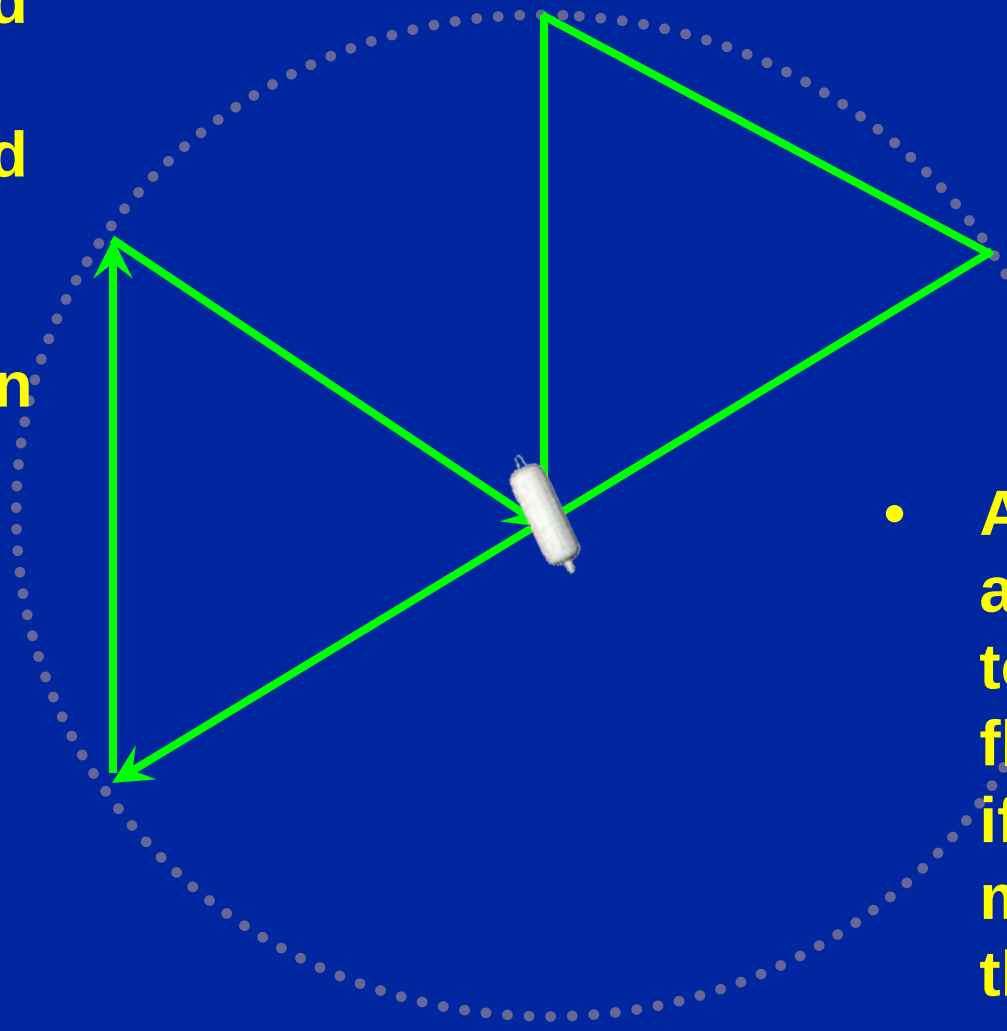
# Sector Search

- **Now run this cross leg at your calculated time and speed**

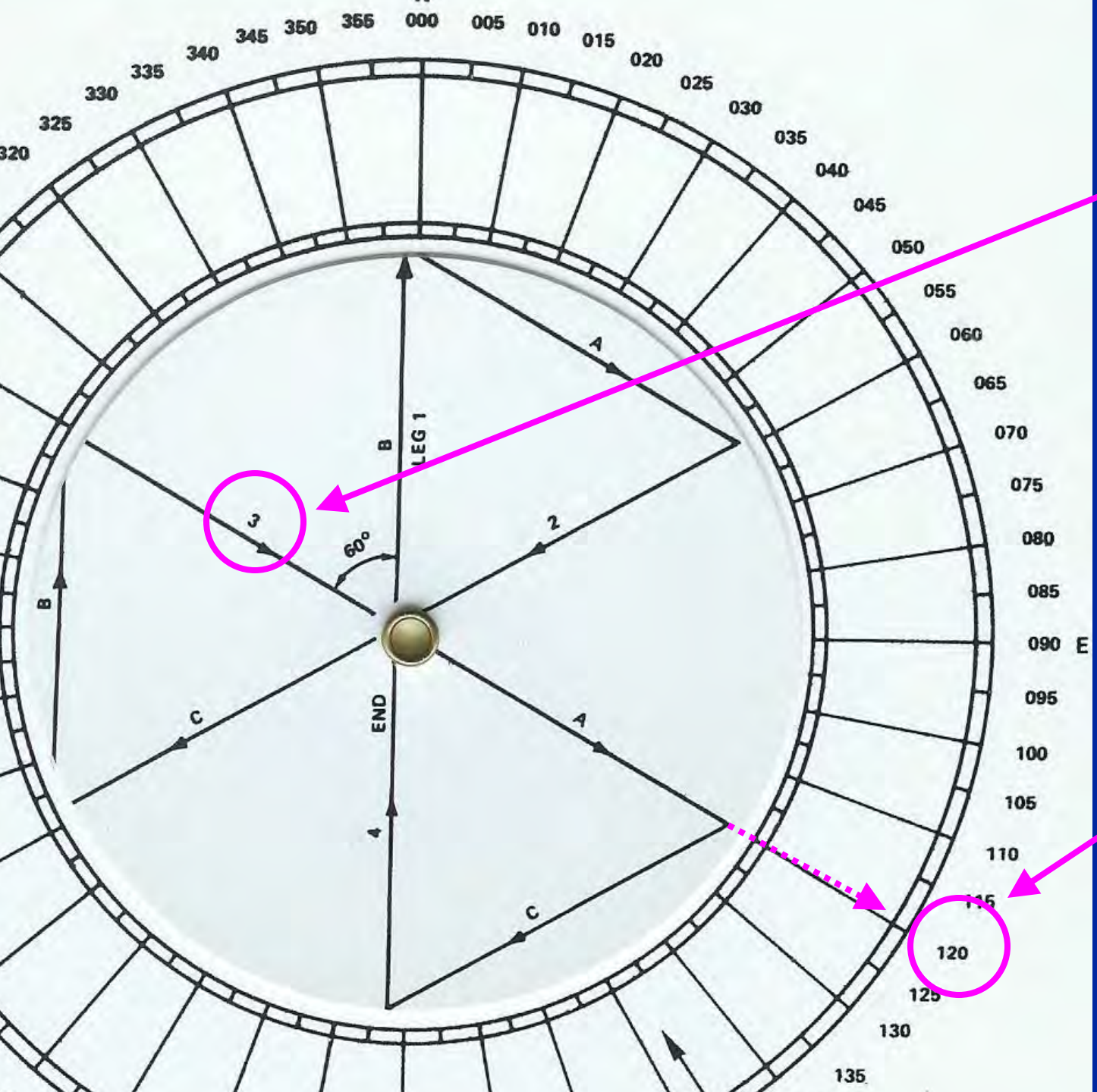


# Sector Search

- At the end of your calculated run time, turn right 120° again
- Use your plotter to find your course back to the CSP



- As before, alter course toward your floating object if it has moved off of the CSP

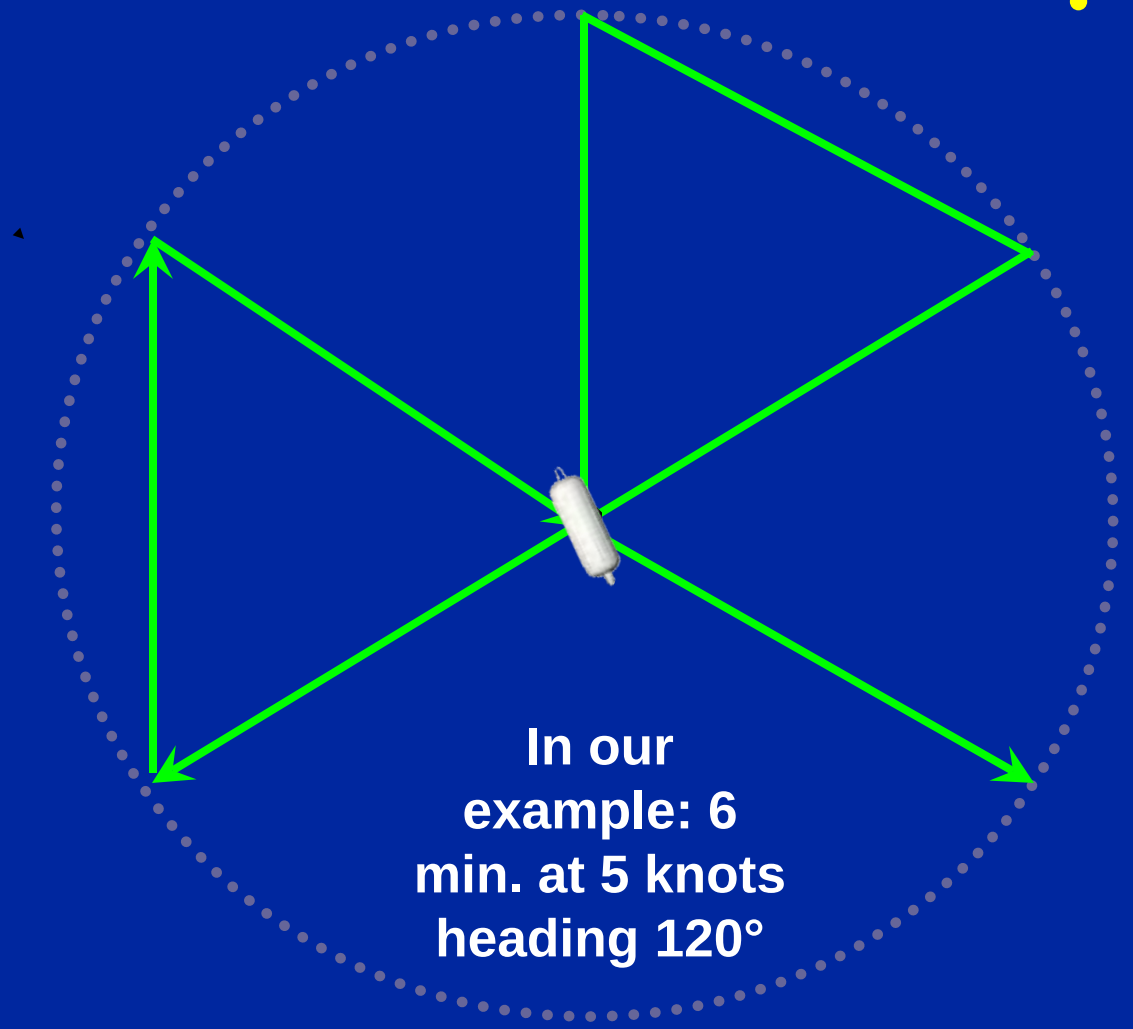



Again you are on a leg that runs through the center dial

When this is the case, just follow the line across the dial for your heading

In our example, 120°

# Sector Search

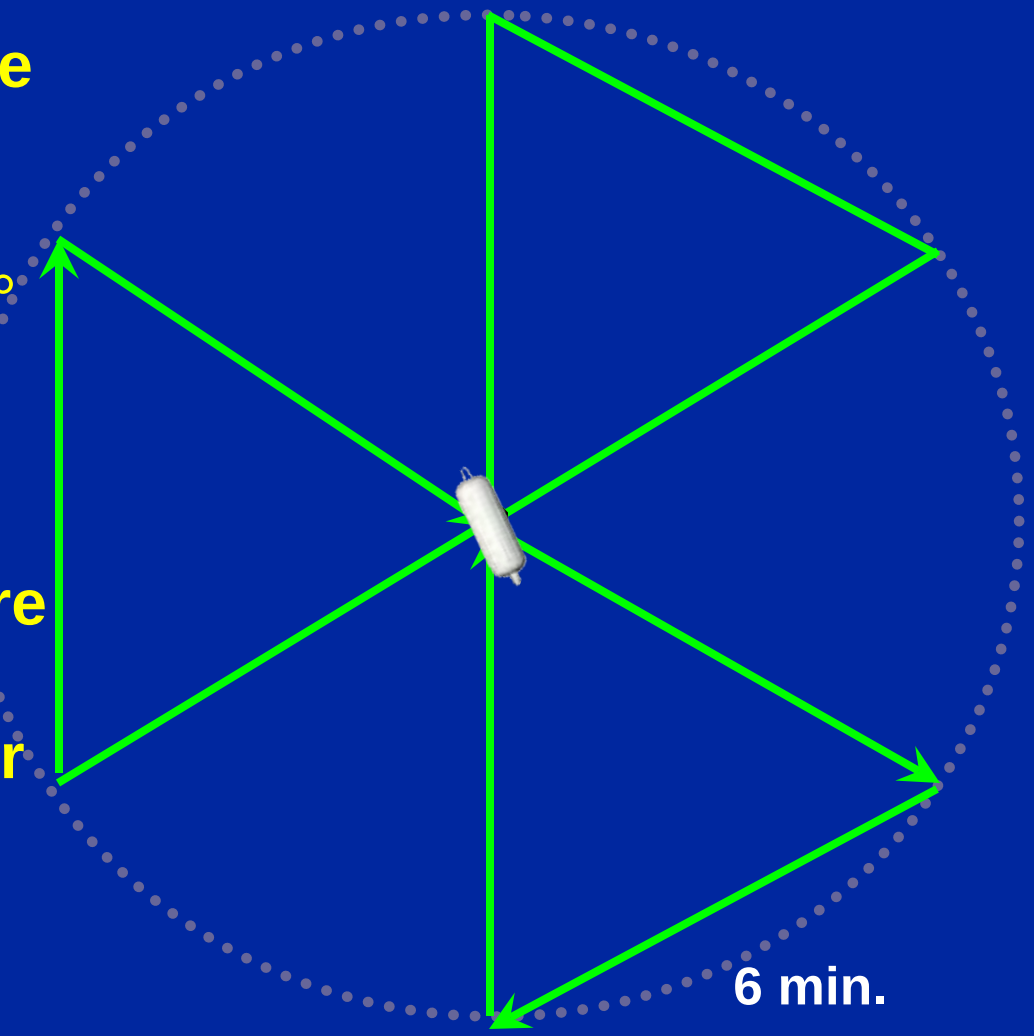


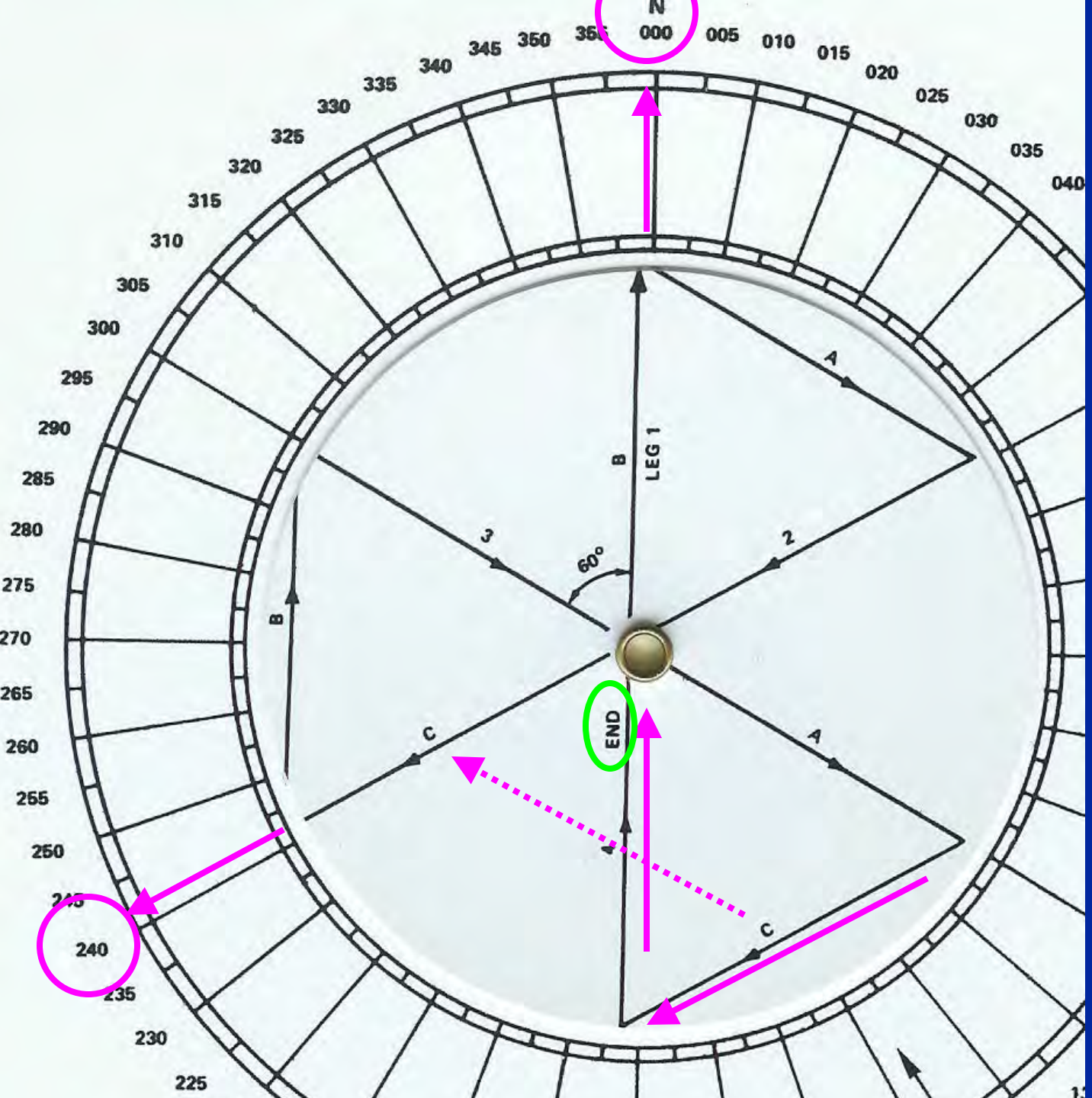
**In our example: 6 min. at 5 knots heading 120°**

- **After reaching the CSP, continue on the same heading for your calculated run time**

# Sector Search

- **Continue the search pattern making 120° turns and using your plotting aid until your are back at the CSP on your initial heading**






In our example: run Leg C at 240°

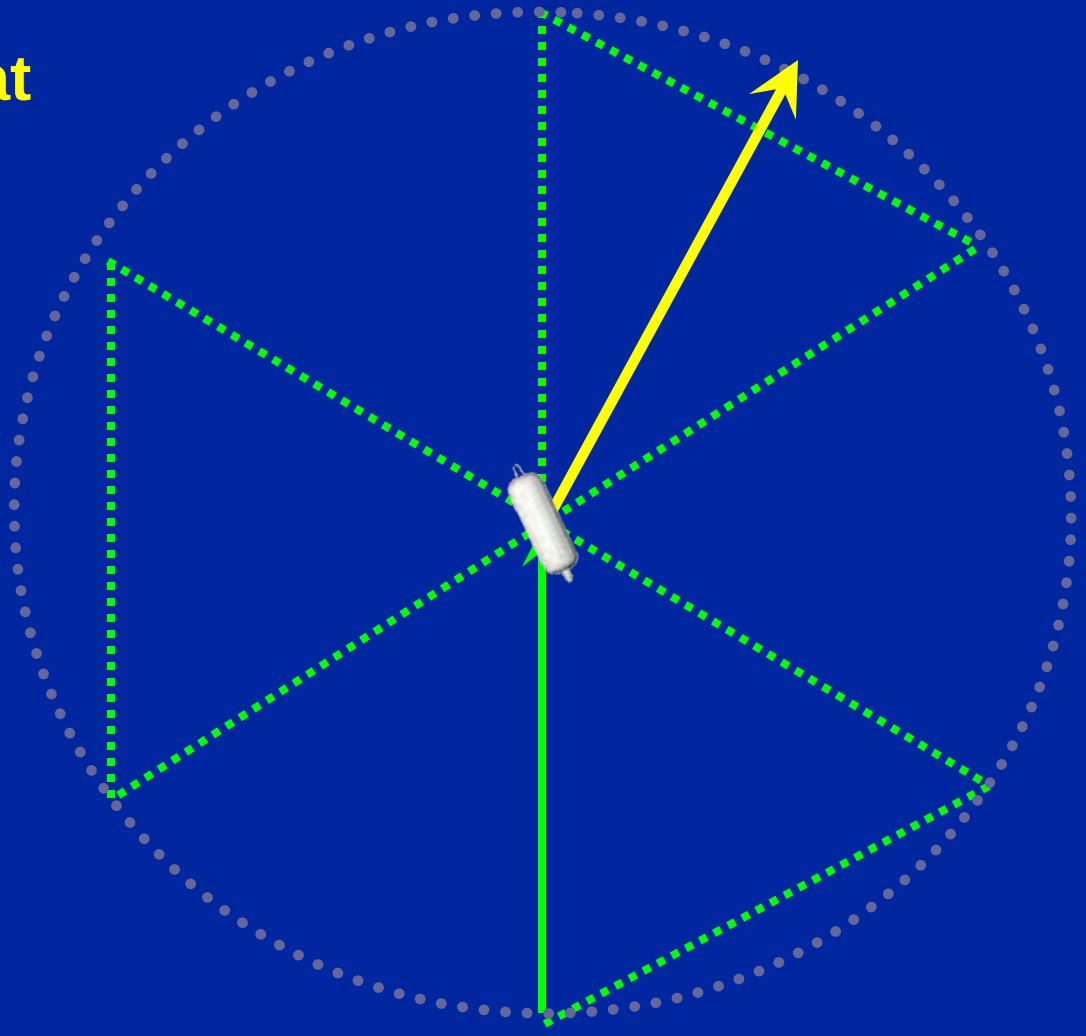
Then run Leg 4 at 000°

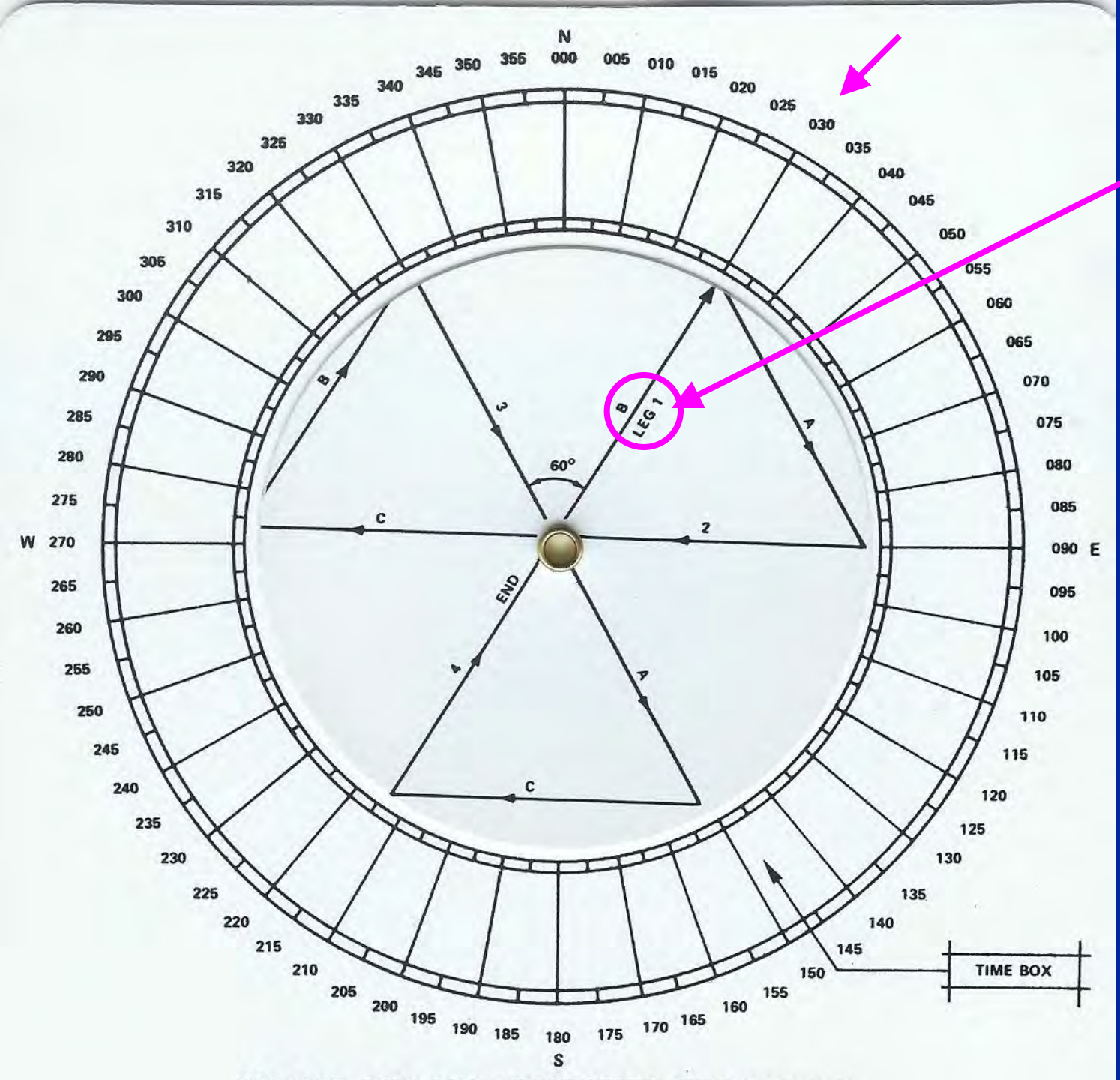
Notice this leg is also marked END indicating you are done with the first pass through the pattern

# Sector Search

**Once back at the CSP on your initial heading:**

**Offset your heading 30° to the right and begin the whole process again using your plotter**



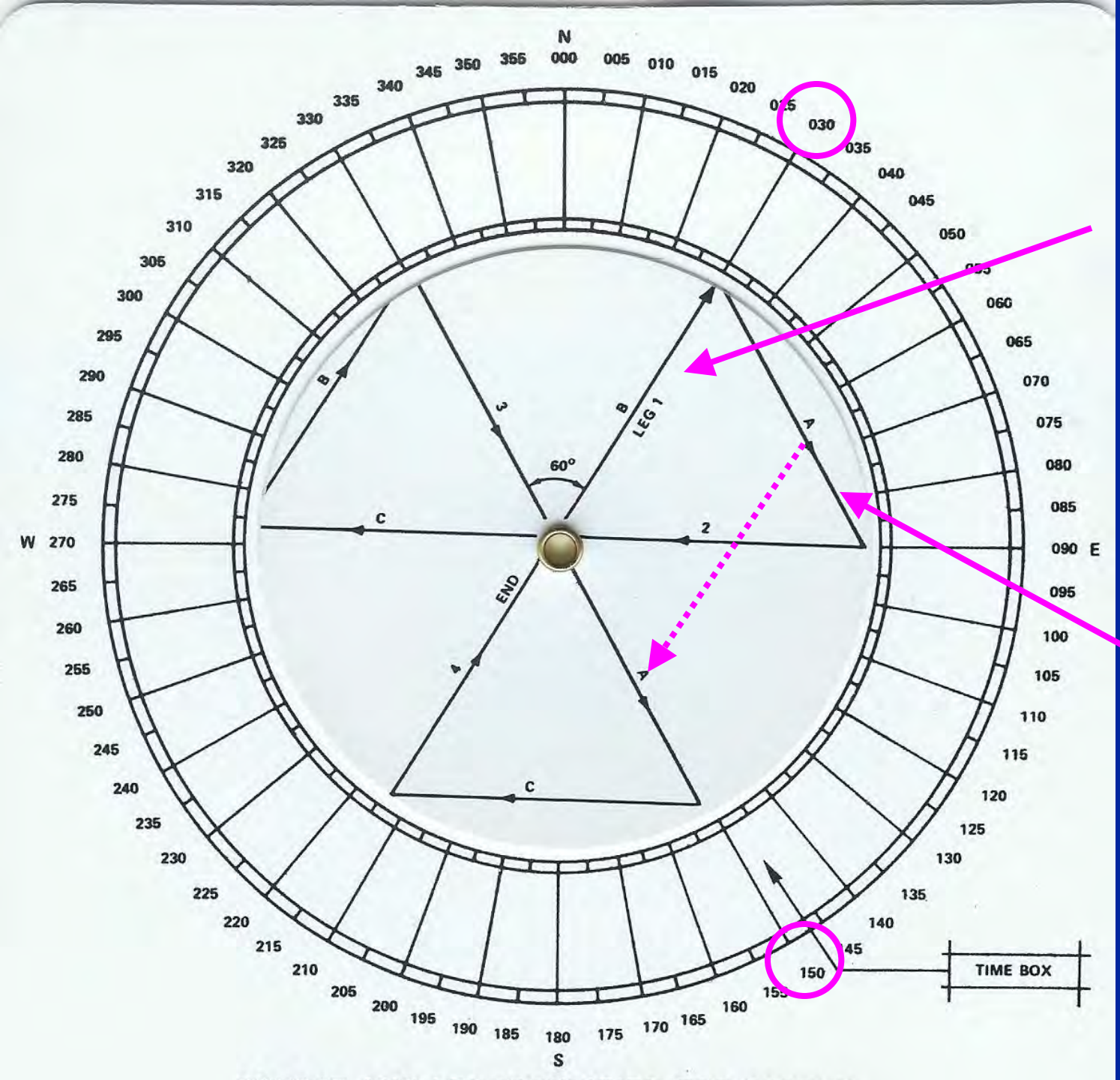



Rotate the arrow for LEG 1 to the right 30°

The LEG 1 arrow now points to your new heading

Speed and leg run time do not change

Run the pattern as you did before using plotter to determine your heading for each leg

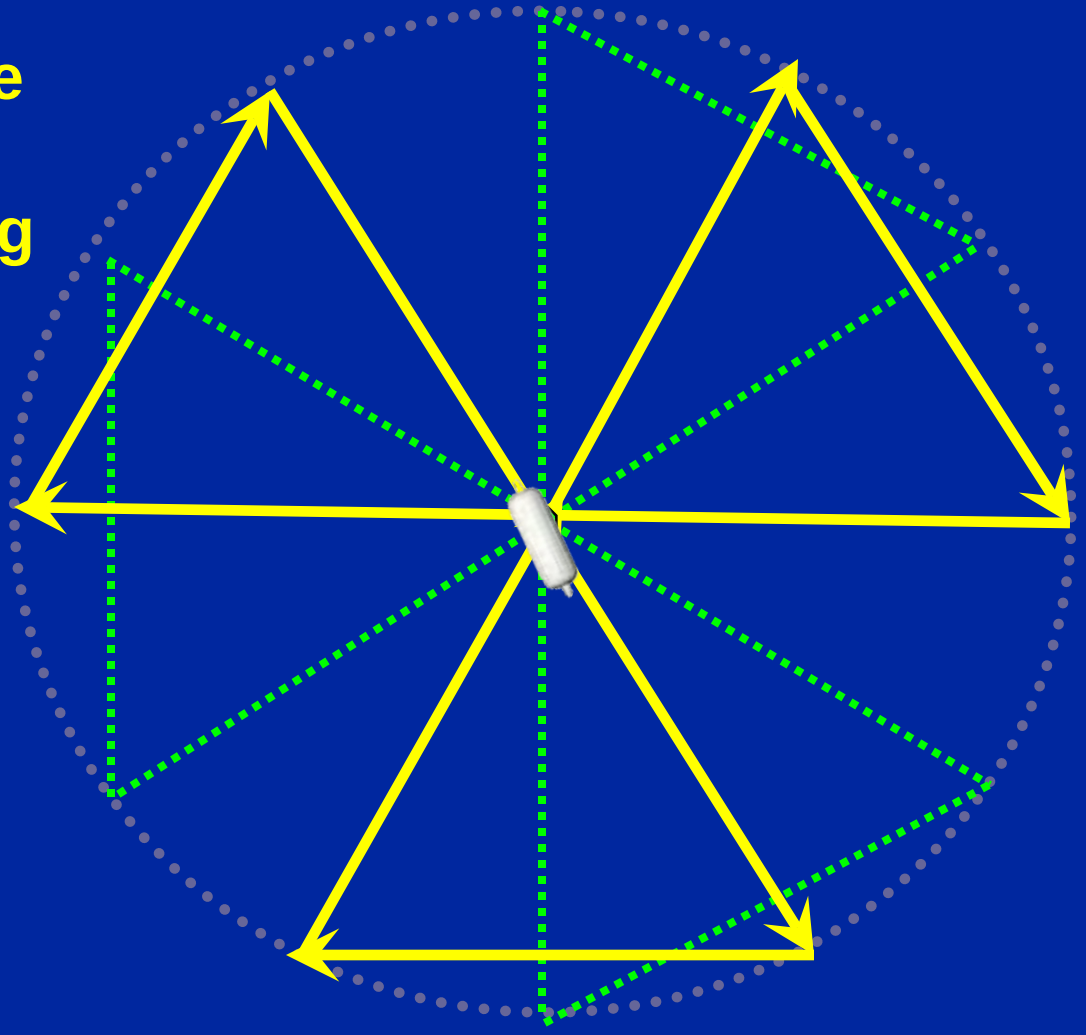



In our example, your first leg will be at heading of 030°

The heading of your second leg will be 150°

# Sector Search

**Continue the pattern as before, using your search plotting aid**



# *ANY QUESTIONS?*