

Manual for obtaining full Plotreport

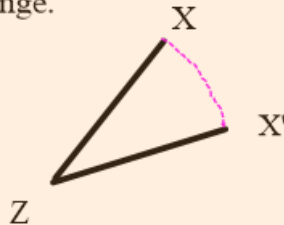
The way to obtain a full plot report(=CPA, TCPA, Course and speed) of an echo is as follows:

- Draw your own Heading
- Plot the first bearing and distance (this is mark X) *Always write down plots with time!*
- Plot the last bearing and distance (this is mark Y)
Beware, the longer the time between two plots the more precise the maths! Minimum 3 minutes and always a multiple of 6
- Connect the line XY and continue this line well over your plotting sheet. This line is the relative approach.
- Draw a perpendicular line to this relative approach starting in the centre. The distance between your vessel (the centre) and the relative approach line is the CPA.
- calculate the time to CPA (TCPA) by using the relative speed of the echo (X to Y) (extrapolate by use of dividers)
- Draw your own opposite course and speed starting in X. This will give you Z
- Connect Z with Y to obtain course and speed of Echo

Resume effect of own course and/or speed change:

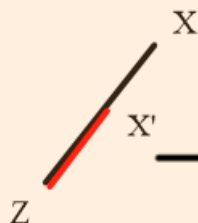
Resuming:

-In order to determine the effect of a course change, you construct a new X' by circling the distance ZX with the same own course change.



- By connecting X' with Y and continuing this line you will create a new relative approach line

-in order to determine the effect of a speed change you construct a new X' by correcting the line ZX for your new speed.



- We will change our course in such a way that we will reach a pre- determined CPA.
- While doing so we will take into account that it will take some time before the new course is steered!
- Determine the time P (the average time for a course change) Draw P on the existing line from Y to CPA
- Draw a tangent from P to the desired CPA circle
- Bring this line back to Y (this is the new relative approach line!) and continue the line.
- Starting in Z you circle the line ZX to this new approach line, thus creating a ZX'.

This is your new course!

Exercises:

1.

Own Ship TC: 082° SPD:11 kts

Echo ship S observed as:

06:12 hrs 050° /9.0'

06:24 hrs 050° /6.4'

a) Full report at 06:24 hrs

2.

Own Ship TC: 246° SPD:15 kts

Echo ship A observed as:

16:29 hrs 225° /11.0'

16:35 hrs 225.5° /9.5'

16:41 hrs 226° /8.0'

a) Full report at 16:41 hrs

At 16:43 a course change of 50° SB was implemented so own ship was heading 296 at 16:45

b) What will new CPA and TCPA become?

1 minute before we see ship A abeam (perpendicular to our course) own ship is brought back to original heading of 246°, this course change takes 2 minutes.

c) What will new CPA and TCPA become?

3.

Own Ship TC: 330° SPD:15 kts

Echo ship S observed as:

18:00 hrs 280° /10.0'

18:12 hrs 280° /7.0'

a) Full report at 18:12 hrs

At 18:14 speed was reduced to 10 kts and at 18:18 this speed was on the log.

b) What will new CPA and TCPA become?

4.

Own Ship TC: 070° SPD:10 kts

Echo ship A observed as:

21:00 hrs 110° /10.0'

21:12 hrs 108° /7.0'

a) Full report at 21:12 hrs

Between 21:15 and 21:17 course was changed in such a way that own ship crosses the targets stern at 2.0 Miles.

b) which course is this?

5.

Own Ship TC: 150° SPD:10 kts

Echo's ship A and B observed as:

	Ship A	ship B
15:00 hrs	130° /12.0'	210° /10.0'
15:06 hrs	130° /10.1'	209° /8.5'
15:12 hrs	130° /8.2'	208° /7.0'

a) Full report A and B at 15:12 hrs

Between 16:14 and 15:16 course was changed in such a way that CPA to A would become 3.0'

b) what is the new course?

c) What is the new TCPA of A?

d) What is the new CPA and TCPA of B?

The echo of B didn't follow its track:

15:16 205° /5.3'

15:22 198° /4.0'

e) Which manouevre did B make?

f) What are the new CPA and TCPA?

6.

Own Ship TC: 125° SPD:13 kts

Echo's ship A and B observed as:

	Ship A	ship B
14:00 hrs	168° /9.6'	230° /4.0'
14:06 hrs	167.5° /8.5'	230° /4.0'
14:12 hrs	167° /7.5'	230° /4.0'

a) Full report A and B at 14:12 hrs

b) which speed change at 14:12 is necessary to obtain a CPA of 3.0' to A?

c) What will CPA and to A become?

d) What will CPA and TCPA to B become?