

Sail Canada












Uniform Navigation Symbols and Terms

This publication provides definitions, shows symbols and gives examples of the symbols and labels to be used on paper marine charts when planning and executing voyages. Plotting examples are shown that highlight the preferred standard, designed for use with a well maintained vessel log and with limited on chart labeling. An alternate approach with more extensive labeling is also shown.

Uniform Navigation Terminology

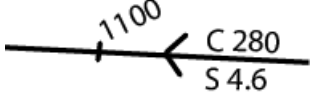
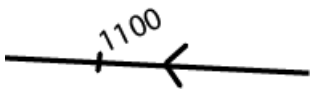
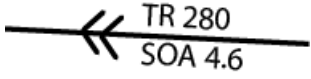
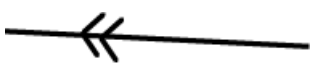
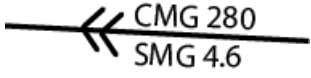
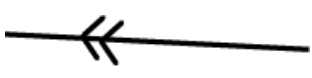

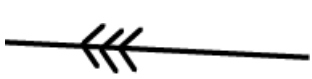
1. **Course (C):** The direction in which a vessel is steered or is intended to be steered (direction through the water)
2. **Course to Steer (C):** Course to steer to counteract current and leeway
3. **Speed (S):** The speed of the boat through the water.
4. **Track (TR) / Course to Make Good (CTMG):** The course for planning purposes that indicates the intended track from departure to destination.
5. **Speed of Advance (SOA) / Speed to Make Good (STMG)** Speed compensated for current.
6. **Course Made Good (CMG):** The single resultant direction from the point of departure to the point of arrival at any given time.
7. **Speed Made Good (SMG):** The speed of the boat achieved over the CMG line.
8. **Line of position (LOP):** A plotted line that the vessel is located on at a specific time, based on the bearing of a charted object of known location.
9. **Circle of Position (COP)** A plotted line that the vessel is located on at a specific time, based on a distance from a charted object of known location.
10. **Set (SET):** The direction in which the current is flowing.
11. **Drift (DFT):** The speed (in knots) of the current.
12. **Total Drift:** Distance between the DR position and Fix for the same time.
13. **Heading (HDG):** The direction in which the boat is pointing in any instant
14. **Symbols, Abbreviations & Labeling:**
 - a) **Headings/ directions:** Always 3 numbers followed by:
T = True (default), M = Magnetic, or C = Compass
 - b) **Time:** 24-hour clock, ship time used

Basic Plotting Symbols

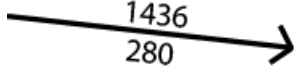
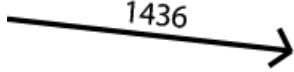
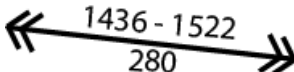
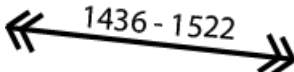
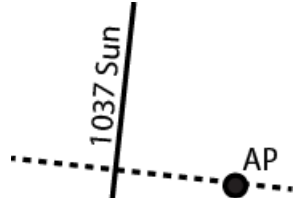
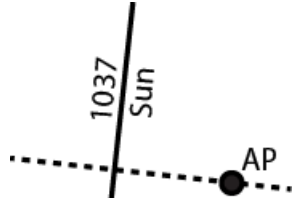
	Fix
	Estimated position
	Waypoint (with optional naming)
	Dead Reckoning Position (DR)
	Visual Line of Position Arrow head points away from object
	Transferred (Advanced or Retarded) Line of Position
	Circle of Position
	Transferred (Advanced or Retarded) Circle of Position
	Course
	Course Made Good or Track
	Current

Plotting Symbol Examples with Labels

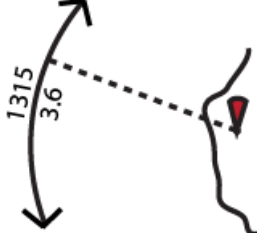
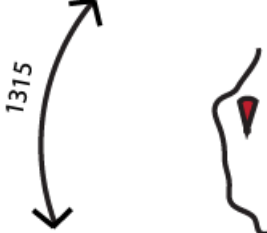
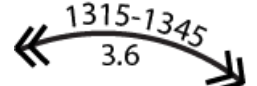
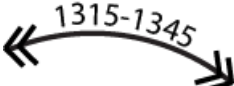
Lines of Motion

Plotting standard with optional labels and values	Description	Plotting Standard to be used in conjunction with log entry details
	<p>Course to steer showing course and speed in knots to one decimal place. Arrow head indicates direction of travel. DR indicated by short vertical line and time at an angle.</p>	
	<p>Track (Course over Ground) and Speed of Advance (Speed to Make Good). Arrow heads indicates direction of travel.</p>	
	<p>Course made Good and Speed made good. Arrow heads indicate direction of travel.</p>	
	<p>Current Set and Drift. Arrow heads indicate direction of Set.</p>	

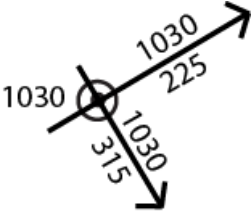
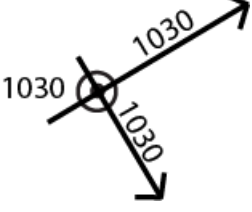
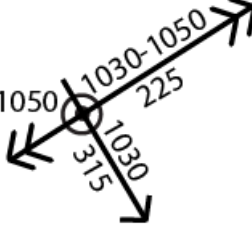
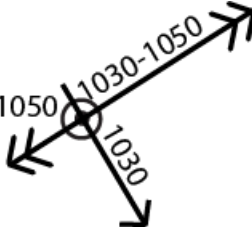
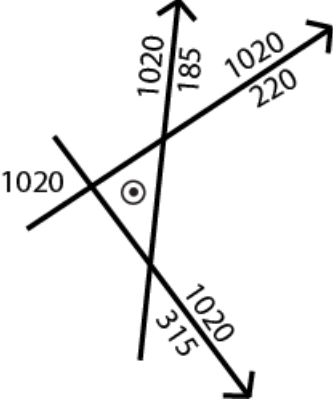
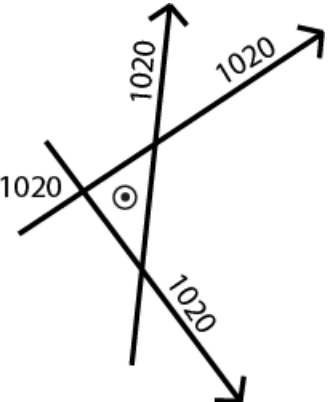
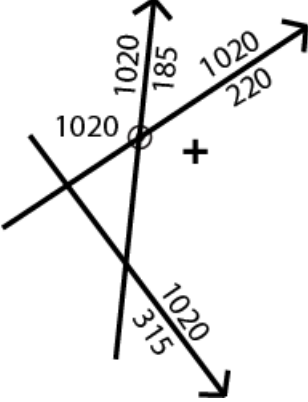
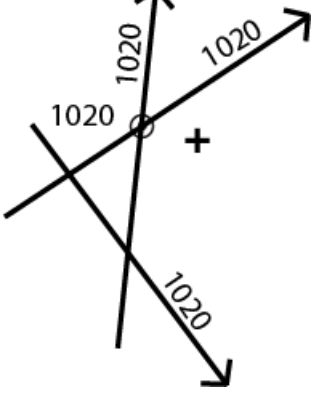
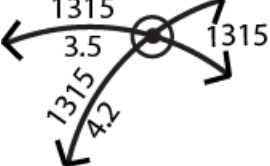
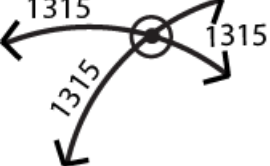
Lines of Position

Plotting standard with optional labels and values	Description	Plotting Standard to be used in conjunction with log entry details
	Line of position labelled with time and true bearing. Arrow head indicates direction from the object the bearing was taken on. The plotted line does not need to originate from the Aid	
	Transferred (Advanced or Retarded) line of position labelled with times (from original and projected bearings) and true bearing.	
	Celestial LOP labelled with Time and the name of the body.	

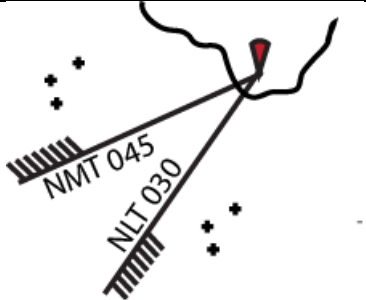
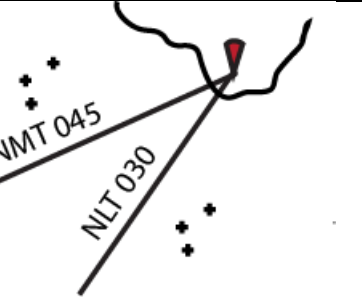
Circles of Position

IMO Plotting standard with optional labels and values	Description	IMO Plotting Standard to be used in conjunction with log entry details
	Circle of position labelled with Time and distance.	
	Transferred (Advanced or Retarded) circle of position labelled with times (from original and projected bearings) and distance.	

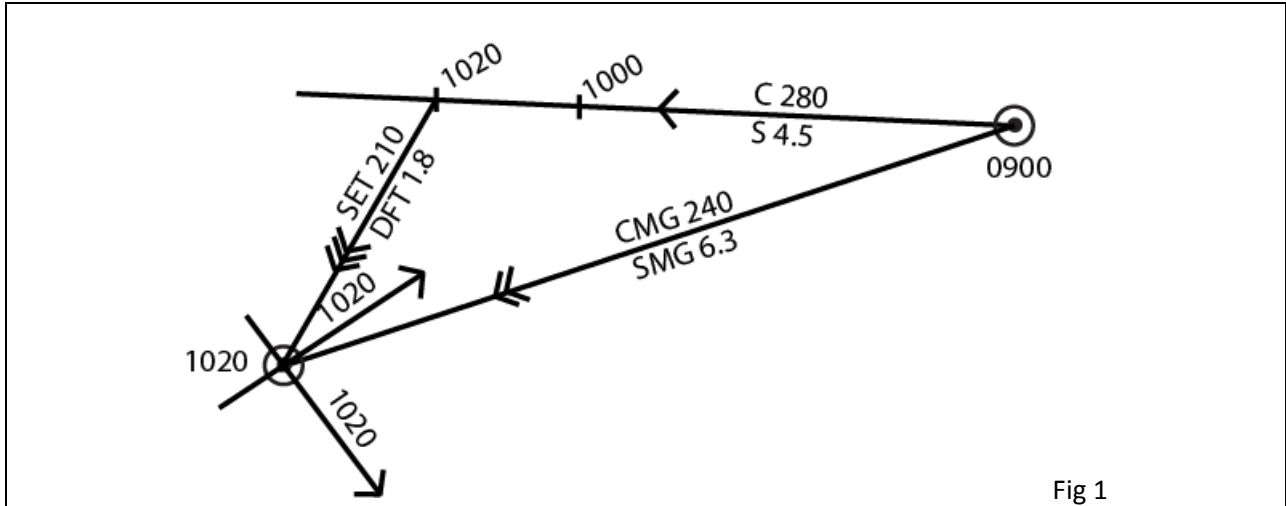
Position Fixes

	<p>2 bearing fix. Arrow heads indicate direction from object the bearing was taken on. LOP's do not need to originate from the aid. Labeled with time and true bearing.</p>	
	<p>2 bearing running fix. Labeled with time(s) and true bearing.</p>	
	<p>3 bearing fix showing a cocked hat (triangle). With no nearby hazards, position is fixed at the geometric centre of cocked hat.</p>	
	<p>3 bearing fix with nearby hazard. Position is fixed nearest to the hazard.</p>	
	<p>Fixes using 2 Circles of position.</p>	

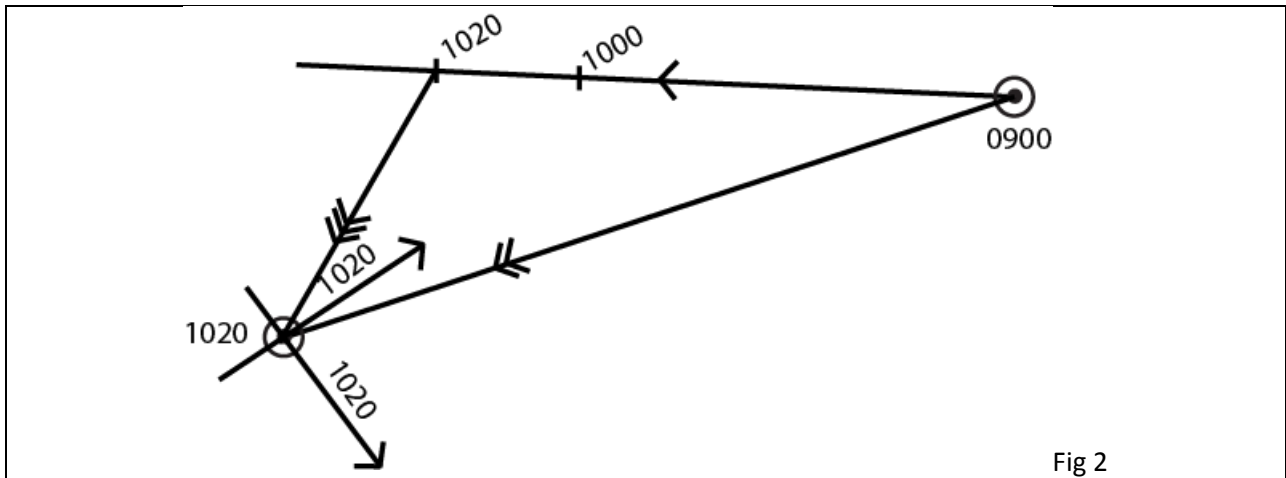
Danger / Clearing Bearings

Plotting standard with optional labels and values	Description	Plotting Standard to be used in conjunction with log entry details
	<p>NMT - Not More Than NLT - Not Less Than</p>	

Example Plots



This diagram shows determination of current with full labelling



This diagram shows determination of current with minimal labelling and assumes the details are in the vessel log book

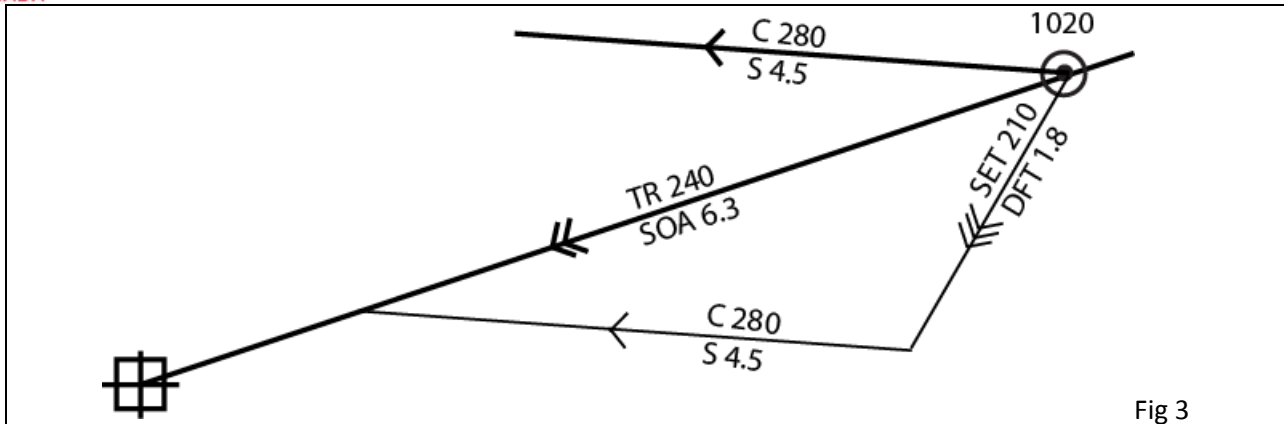


Fig 3

This diagram shows determination of Course to Steer with full labelling.
 Vector diagram is drawn with light construction lines.

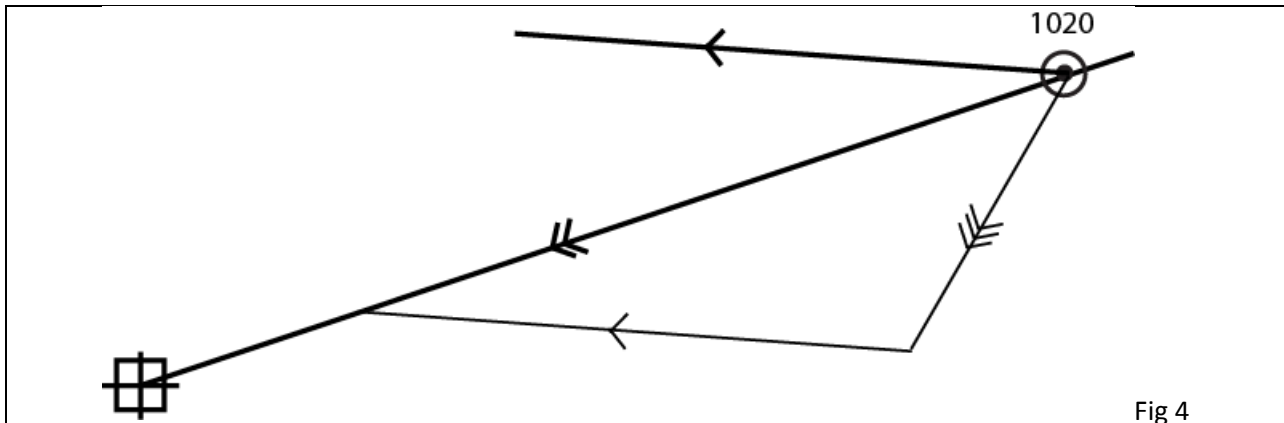


Fig 4

This diagram shows determination of Course to Steer with minimal labelling and assumes the details are in the vessel log book. Vector diagram is drawn with light construction lines.

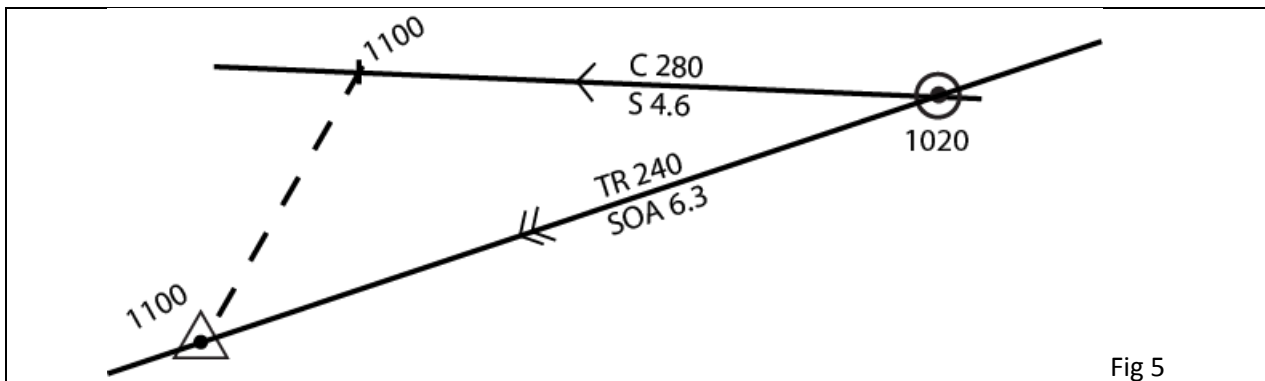


Fig 5

This diagram shows plotting of an EP in presence of current with full labelling

