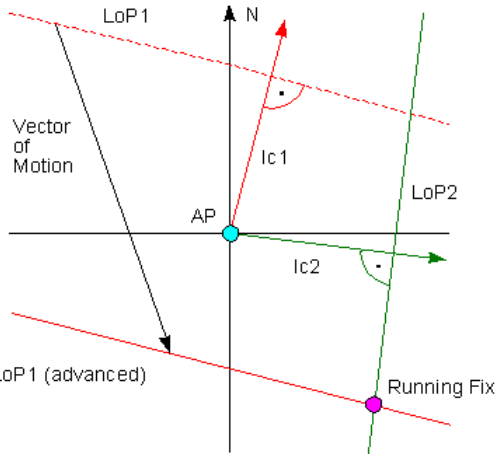
Chapter 5

Finding the Position of a Traveling Vessel

The intercept method even enables the navigator to determine the position of a vessel traveling a considerable distance between two observations, provided course and speed over ground are known.

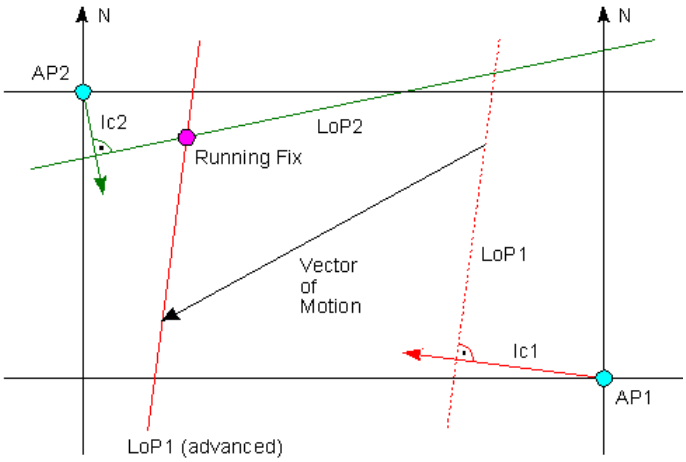
We begin with plotting both lines of position in the usual manner, as illustrated in chapter 4, *Fig. 4-4*. Then, we apply the vector of motion (defined by course, speed, and time elapsed) to the LoP resulting from the first observation, and plot the **advanced** first LoP, the parallel of the first LoP thus obtained. **The point where the advanced first LoP intersects the second LoP is the position of the vessel at the time of the second observation.** A position obtained in this fashion is called a **running fix** (*Fig. 5-1*).

Fig. 5-1



The procedure gives good results when traveling short distances (up to approx. 30 nm) between the observations. When traveling a larger distance (up to approx. 150 nm), it may be necessary to choose two different AP's, not too far away from each estimated position, to reduce geometric errors (*Fig. 5-2*).

Fig.5-2



It is also possible to find the running fix for the time of the first observation. In this case the second LoP has to be **retarded** (moved backwards).

Sumner lines and terrestrial lines of position may be advanced or retarded in the same manner.

In practice, course and speed over ground can only be estimated since the exact effects of currents and wind are usually not known. Therefore, a running fix is usually not as accurate as a stationary fix.