3 The constancy of the principal currents varies to some extent in different seasons and in different parts of the current

It is usually about 50% to 75% and rarely exceeds 85%, and then only in limited areas. Current variability is mainly due to the variation of wind strength and direction. For the degree of variation to which currents are liable, reference should be made to NP136 - Ocean Passages for the World.

Warm and cold currents 6.5

1 Currents that set continuously E or W tend to acquire temperatures appropriate to their latitude. Currents that set N or S over large distances will move warm or cold water with them

The Gulf Stream, for example, transports water from the Gulf of Mexico to the central part of the North Atlantic Ocean where it causes temperatures to rise to well above the latitudinal average. Between the Gulf Stream and the American coast the water is much colder since it derives from Arctic regions by way of the Labrador Current. The transition from this cold water to the much warmer water of the Gulf Stream is marked by a very strong gradient of sea surface temperatures. Both here and elsewhere, strong temperature gradients indicated by sea temperature isotherms can be used to detect the boundaries between currents.

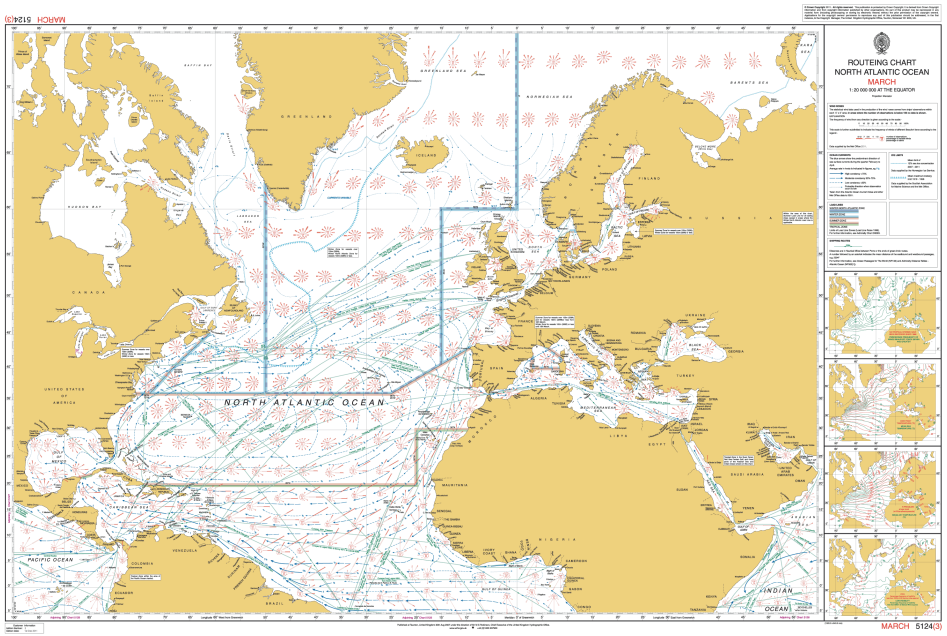
2 Warm currents include:

Gulf Stream
Mozambique Current
Japan Current
Agulhas Current
Brazil Current
East Australian Coast Current

3 Cold currents include:

Labrador Current
Kamchatka Current
East Greenland Current
Falkland Current
Peru Current
California Current
Benguela Current

The low temperature of the surface water of some of the cold currents is not always due to advection from lower latitudes. It is sometimes due to the upwelling of sub- surface water (6.10), as is the case in the Benguela Current.

Strengths of ocean currents 6.6

1 For details of currents ADMIRALTY Routeing charts should be referred to