Definitions of Sea Areas A1, A2, A3 and A4 from IMO resolution A801(19)

SEA AREA A1

Sea area A1 is that sea area which is within a circle of radius A nautical miles over which the radio propagation path lies substantially over water. The radius A is equal to the transmission distance between a ship's VHF antenna at a height of 4 m above sea level and the antenna of the VHF coast station which lies at the centre of the circle.

Determination of radius A

The following formula should be used to calculate the range A in nautical miles:

$$A = 2.5\ (\sqrt{H\ \text{(in metres)}} + \sqrt{h\ \text{(in metres)}})$$

H is the height of the coast station VHF receiving antenna and h is the height of the ship's transmitting antenna which is assumed to be 4 m.

The following table gives the range in nautical miles (nm) for typical values of H:

h \ *H*	50 m	100 m
4 m	23 nm	30 nm

The formula given above applies to line-of-sight cases but is not considered adequate for cases where both antennae are at a low level. The VHF range in sea area A1 should be verified by field strength measurements.

SEA AREA A2

Sea area A2 is that sea area which is within a circle of radius B nautical miles over which the propagation path lies substantially over water and which is not part of any sea area A1, the centre of the circle being the position of the coast station receiving antenna.

Determination of radius B

The radius B may be determined for each coast station by reference to Recommendation ITU-R PN.368-7 and ITU-R Report 322 for the performance of a single sideband (J3E) system under the following conditions:

Frequency	-2182 kHz
Bandwidth	-3 kHz
Propagation	-ground wave
Time of day	-*
Season	-*
Ship's transmitter power (PEP)	-60 W**
Ship's antenna efficiency	-25%
S/N (RF)	-9 dB (voice)
Mean transmitter power	-8 dB below peak power
Fading margin	-3 dB

[*]Administrations should determine time periods and seasons appropriate to their geographic area based on prevailing noise level.

[**] See footnote to regulation IV/16(c)(i) of the 1981 amendments to the 1974 SOLAS Convention.

The range of sea area A2 should be verified by field strength measurements.

SEA AREA A3

Sea area A3 is that sea area of the world not being part of any sea area A1 or A2 within which the elevation angle of an Inmarsat satellite is 5° or more.

SEA AREA A4

Sea area A4 is that sea area of the world not being part of any seas area A1, A2 or A3.