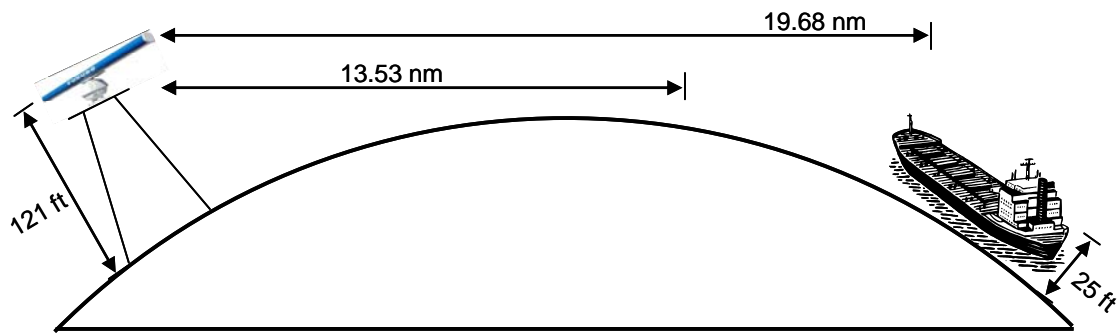


# Radar Horizon

Numerous factors impact the effective detection range of a radar; these include atmospheric conditions, output power, antenna size, target cross section, and the radar horizon. The radar horizon is essentially line of sight from the radar to the horizon which is limited due to the curvature of the Earth.

The distance to the horizon is calculated by multiplying the root of the antenna height in feet by 1.23 with the result in nautical miles.

The maximum range to a target is calculated by adding the root of the antenna to the root of the height of the target and multiplying the result by 1.23.



Distance to the horizon with the antenna height of 121 feet:

$$(\sqrt{121\text{ft}}) * 1.23 = 13.53 \text{ nm}$$

Maximum range to detect a target with a height of 25 feet:

$$((\sqrt{121\text{ft}}) + (\sqrt{25\text{ft}})) * 1.23 = 19.68 \text{ nm}$$