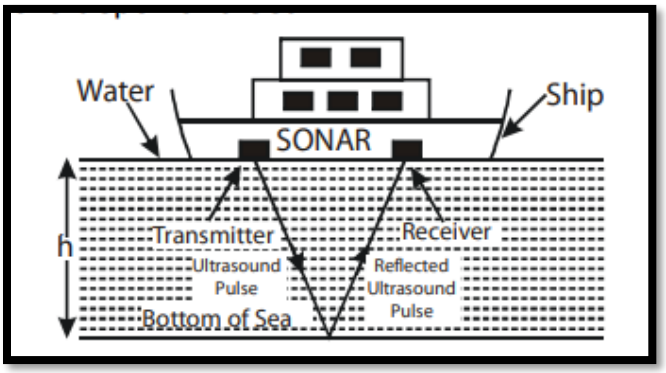
SOUND

SONAR

Sonar

Sonar stands for sound navigation and ranging.

It is a device which is used in the ships to locate rocks, icebergs, submarines, old ships sank in sea ete. It is also used to measure the depth of a sea.



Principle:

It is based on the principle of the reflection of sound wave (i.e. echo). Determination of the Depth of a Sea using Sonar

A beam of ultrasonic waves from the transmitter of a SONAR fitted on the ship is sent towards the bottom of the sea. This beam is reflected back from the bottom of the sea and is received by the receiver of the SONAR on the ship

The time taken by the ultrasonic waves to go from the ship to the bottom of the sea and then back to the ship is noted. Let it be 't' seconds. Therefore, the time taken by the ultrasonic waves to go from the ship to the bottom of the sea is $\left(\frac{t}{2}\right)$ seconds.

Using the following formula $S = v\left(\frac{t}{2}\right)$ we can find the depth of the sea.

Here,

u = speed of ultrasonic wave in water.

S = depth of the sea