

## Topic Page: [echo-sounder](#)

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Definition: **echo sounder** from *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*  
Device that detects objects under water by means of sonar – by using reflected sound waves. Most boats are equipped with echo sounders to measure the water depth beneath them. An echo sounder consists of a transmitter, which emits an ultrasonic pulse, and a receiver, which detects the pulse after reflection from the seabed. The time between transmission and receipt of the reflected signal is a measure of the depth of water. Fishing boats use echo sounders to detect shoals of fish and navies use them to find enemy submarines.

### essays

Using Echoes

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Summary Article: **echo sounder**

From *The Columbia Encyclopedia*

an older instrumentation system for indirectly determining ocean floor depth. Echo sounding is based on the principle that water is an excellent medium for the transmission of sound waves and that a sound pulse will bounce off a reflecting layer, returning to its source as an echo. The time interval between the initiation of a sound pulse and echo returned from the bottom can be used to determine the depth of the bottom. An echo-sounding system consists of a transmitter, a receiver that picks up the reflected echo, electronic timing and amplification equipment, and an indicator or graphic recorder. The first patent for an echo-sounding device was granted in 1907. The Fathometer, a registered trademark often loosely applied to all depth-sounding gear, was developed (1914) as a result of research by the Canadian engineer R. A. Fessenden in the application of echo-sounding principles to iceberg detection. Application of echo-sounding principles to submarine detection during World War II resulted in the development of equipment to sound all ocean depths. In 1954 an advanced, highly accurate echo sounder called the precision depth recorder (PDR) was developed. By the early 1960s, the U.S. Navy used the new technique of Sonar Array Survey System (SASS). The National Oceanic and Atmospheric Administration has recently used an unclassified version of SASS, Sea Beam, to map more detailed representations of the seafloor. Sea Beam employs an array of sound transducers across the hull of the survey vessel which radiate sound in a swathe, thereby allowing a wide region of the seafloor to be mapped. This type of swathe-mapping technology is now the norm for seafloor mapping. Another sonar instrument called SeaMARC uses a torpedo-shaped “fish” to measure the strength of sound signals, rather than the elapsed time of the returning signals, and covers larger areas of the ocean floor.

**APA**

Chicago

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Echo Sounder. (2018). In P. Lagasse, & Columbia University, *The Columbia encyclopedia* (8th ed.). New York, NY: Columbia University Press. Retrieved from [https://search.credoreference.com/content/topic/echo\\_sounder](https://search.credoreference.com/content/topic/echo_sounder)

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## APA

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## Chicago

"echo sounder." In *The Columbia Encyclopedia*, by Paul Lagasse, and Columbia University. 8th ed. Columbia University Press, 2018. [https://search.credoreference.com/content/topic/echo\\_sounder](https://search.credoreference.com/content/topic/echo_sounder)

## Harvard

Echo Sounder. (2018). In P. Lagasse & Columbia University, *The Columbia encyclopedia*. (8th ed.). [Online]. New York: Columbia University Press. Available from: [https://search.credoreference.com/content/topic/echo\\_sounder](https://search.credoreference.com/content/topic/echo_sounder) [Accessed 15 November 2019].

## MLA

"echo sounder." *The Columbia Encyclopedia*, Paul Lagasse, and Columbia University, Columbia University Press, 8th edition, 2018. *Credo Reference*, [https://search.credoreference.com/content/topic/echo\\_sounder](https://search.credoreference.com/content/topic/echo_sounder). Accessed 15 Nov. 2019.