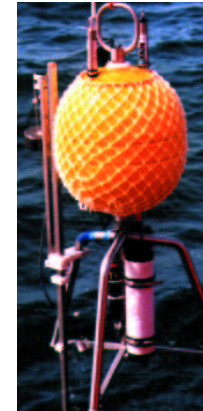


## Ocean Bottom Hydrophone System (OBH) & Ocean Bottom Seismic System (OBS)

Both systems are in use for (deep-) sea floor investigations by means of underwater wave measurements and its scientific evaluation.

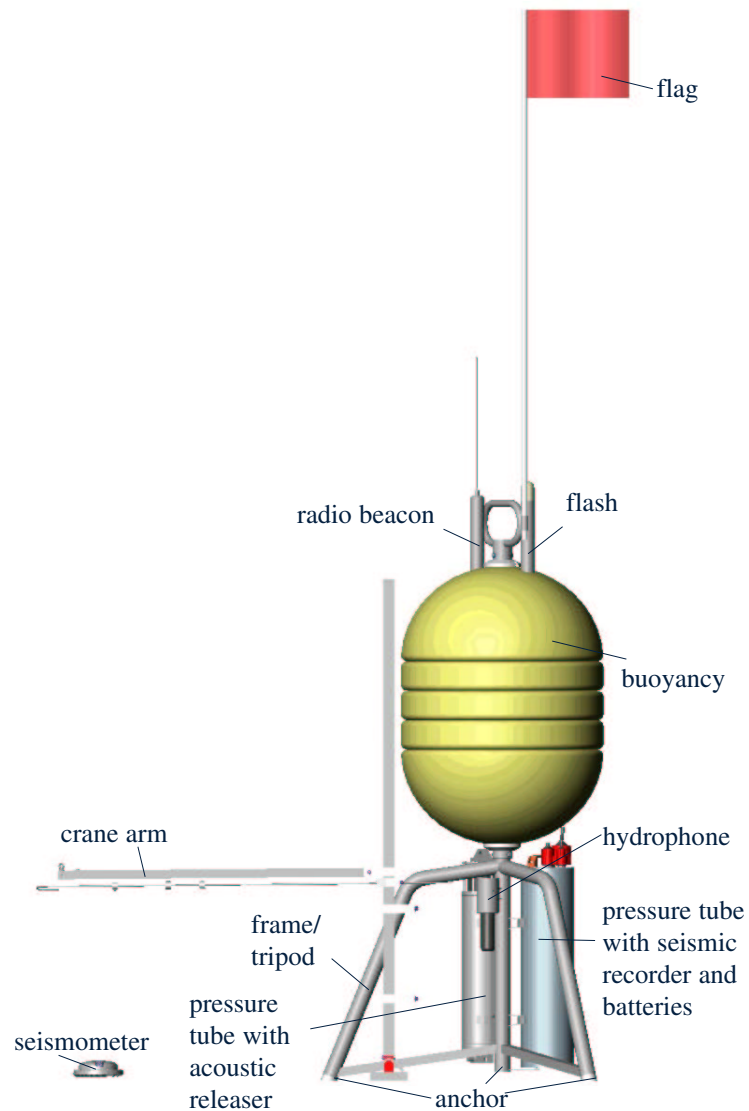
They differ from each other only in one aspect: in contrast to the Ocean Bottom Hydrophone System the Ocean Bottom Seismic System is additionally equipped with a seismometer.

Without any cable connection to a research vessel they work completely autonomously.



Therefore the OBS System is also called “Self-Landing and Ascending Ocean Bottom Seismic System” or SLA-OBS.





The OBS is heaved overboard from a research vessel, sinks down to the sea floor grace to its anchor weight and stays there autonomously.

By means of the hydrophone it registers water echo (pressure waves) and by means of the seismometer finest movements of the bottom (pressure and shear waves).

After the research period the anchor is released by an acoustic signal (coming from the vessel) and the OBS ascends to the surface.

The SLA-OBS is designed for 4-component-seismic-measurements up to a water depth of 6000m.

With a sample rate of 2ms continuous data recording over 14 days is possible.

### **External seismometer**

As soon as the OBS touches the sea floor the crane arm releases the seismometer and it sinks down to the bottom at a distance of 1m (optional: 3m).

It itself is equipped with three geophones with the function of measuring pressure and shear waves on the sea floor. Since the seismometer is in direct contact with the sediment the data recording is very exact and nearly free of loss.

Features:

- high noise and rush distance
- wide frequency scale (from 4.5Hz to 100Hz and more)
- noise-less even with strong current
- no coupling from instrument movements, hard discs etc.
- vector fidelity
- optimised coupling

### **Hydrophone**

The hydrophone registers pressure waves of the water

They are both instruments for data recording saved by the seismic recorder being installed in one of the pressure tubes.

### **Features**

- buoyancy: syntactic foam  
hence: sturdy and shockproofed system
- the main parts are made of titanium, e.g. seismometer, pressure tubes, releaser:  
pressure-proof, less weight, corrosion resistant
- max. operation depth: 6000m

### **Applications**

- long term investigations
- 4-component-reflection- and refraction seismic (1x hydrophone; 3x geophone)
- wide angle seismic (undershooting of extremely hard basalt and salt rocks)
- 4-dimension-seismic reports (height-width-depth-time)
- can also be operated in ultra deep-sea, in rugged areas, with strong current and near oil rigs

## Technical data / standard version

**Measurements:** diameter: 1,20m  
height: 2,00m

**Weight (air weight):** OBS (without anchor): 240kg  
anchor: 70kg

**Rack+crane arm:** stainless steel 1.4571

**Releaser:** KUMQUAT K/MT 562  
acoustic or time releaser

**Aid location:** radio beacon, flash, flag,  
GPS

**Power supply:** 72 mono batteries or  
rechargeable accumulator

### Hydrophone & external seismometer

*Product no.:* K/MT 500

*Article no.:* 2210

**Data recording:** 4 channels

a.) **Methusalem MBS** (Marine Broadband Seismic Recorder)

Sample rate: 16 - 0,1ms (62,5Hz-10000Hz)

Resolution: 20bits at 2ms

16bits at 0,1ms

Data memory: 4 flash cards (chips) or micro drives  
(hard disc), (max. 8Gbyte)

b.) **Geolon MLS** (Marine Longterm Seismic Recorder)

Sample rate: 1000 - 5ms (1Hz-200Hz)

Resolution: 21bits at 200ms

18bits at 20ms

Data memory: 12 flash cards or micro drives (max. 24Gbyte)

Extreme low power consumption (250mW) when using flash cards.