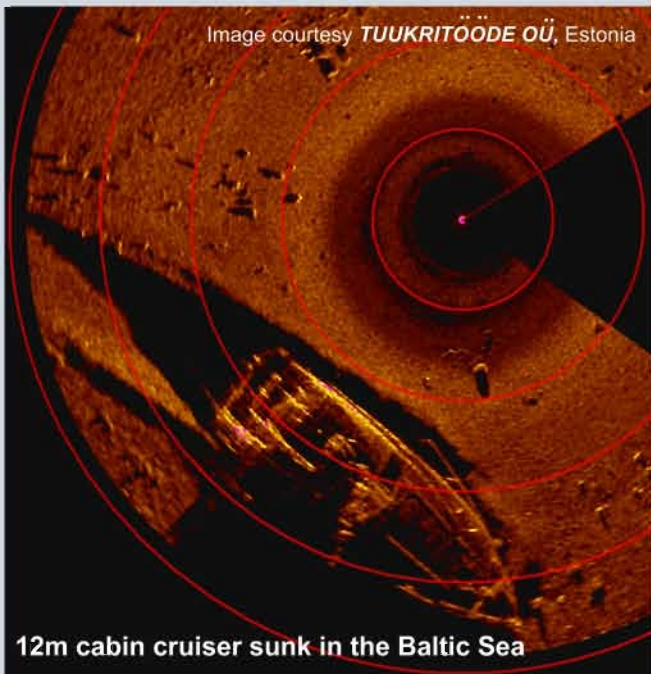




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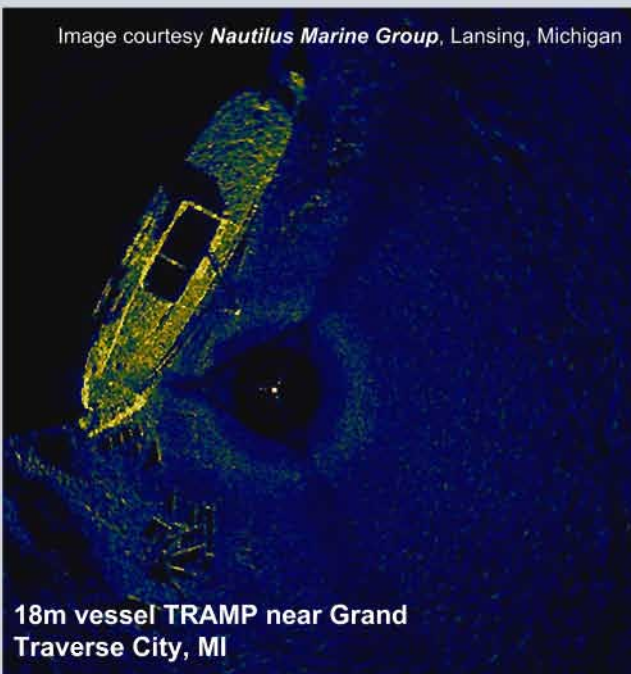
# Shipwreck Documentation

Image courtesy *TUUKRITÖÖDE OÜ*, Estonia



12m cabin cruiser sunk in the Baltic Sea

Image courtesy *Nautilus Marine Group*, Lansing, Michigan



18m vessel TRAMP near Grand Traverse City, MI

Image courtesy *Nautilus Marine Group*, Lansing, Michigan



Great Lakes schooner *A.J. Rogers*

Baltic Sea shipwreck circa 1750



Image courtesy *TUUKRITÖÖDE OÜ*, Estonia

Torpedoed WW2 Liberty Ship in the Baltic Sea



Image courtesy *TUUKRITÖÖDE OÜ*, Estonia

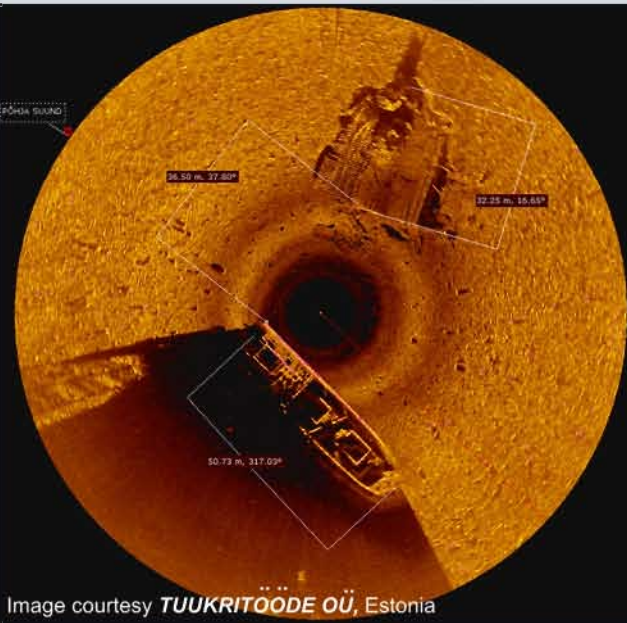


Image courtesy *TUUKRITÖÖDE OÜ*, Estonia

Tripod or ROV-deployed scanning sonar provides a stable platform for shipwreck analysis.

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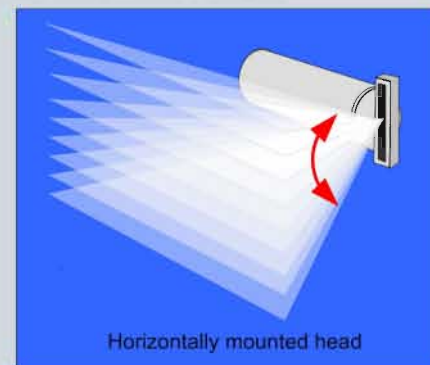
### Sonar equipment configuration for shipwreck documentation:

- Computer with MS 1000 PC-based Sonar Software
- MS 1000 "Splashproof" Interface Unit
- Kevlar deployment cable
- 675 kHz High Resolution Scanning Sonar Head with fan beam transducer (or Multi Frequency High Resolution Sonar Head)
- Tripod
- Remote Keypad/Hand-controller

### Additional Information:

The advantage of using scanning sonar to document shipwrecks is the instrument can be deployed at multiple positions around the wreckage to obtain the best geometric coverage and to detail specific areas of interest. For salvage operations, the sonar can be used to monitor divers or the position of rigging in real-time.

Consider other mounting configurations for scanning shipwrecks. The head can be horizontally aligned to obtain the images shown below. In the left image the sonar was ROV-deployed; the right image was taken with the head strapped to a horizontal bar and lowered 15m (49.2') below the anchored research vessel.



"Typical" MS 1000 System with a 100m (330') Kevlar operations cable

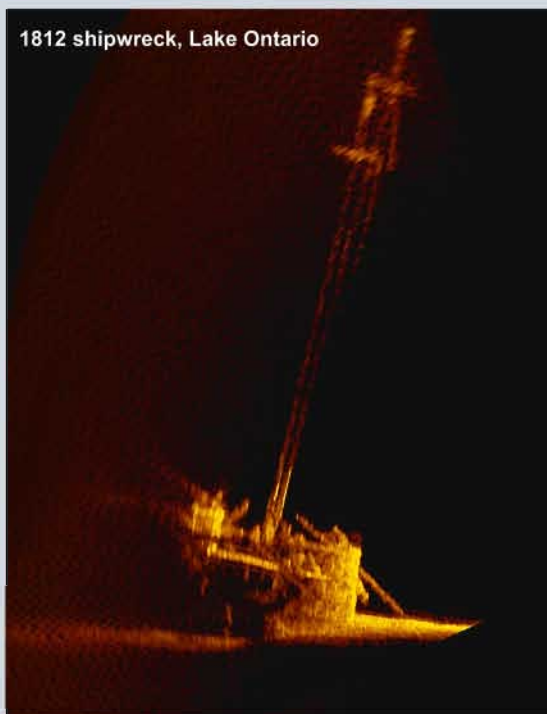


Image courtesy *ASI Group, Ltd.*, St Catharines, Ontario Canada

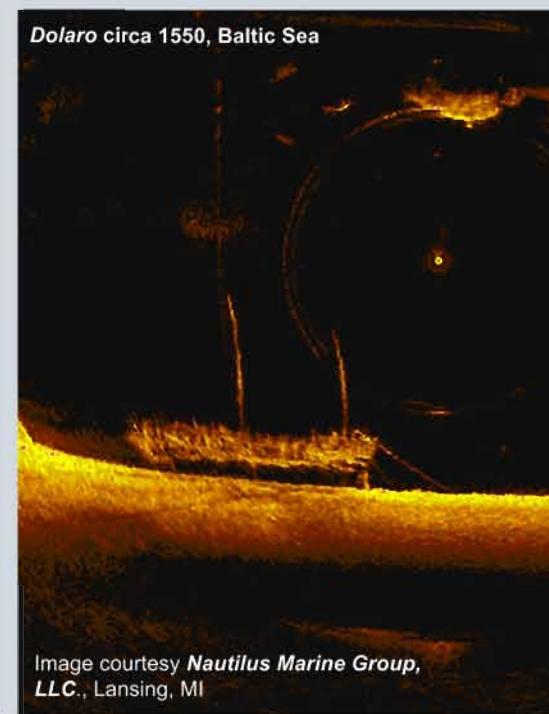


Image courtesy *Nautilus Marine Group, LLC*, Lansing, MI