

## IMPROVISED WING ROTOR FOR AN AANDERAA CURRENTMETER USED AS HEADING DEVICE

By

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During a geo-cruise with *R/V García del Cid* in the Strait of Gibraltar, in 1989, a Side Scan Sonar was used when crossing the strait North-South, and South-North directions.



Side Scan Sonar on newspapers

Because the strong currents there, the body of the SSS was towed obliquely to the ship track and was impossible to process the information, at this time, recorded in EPC thermal chart recorder.

For the following cruise, the chief scientist decided to use an Aanderaa currentmeter (this with magnetic tape) attached to the mouth of the SSS body. Then, the information of the currentmeter compass will provide the heading of the SSS and then processing the information will be possible.

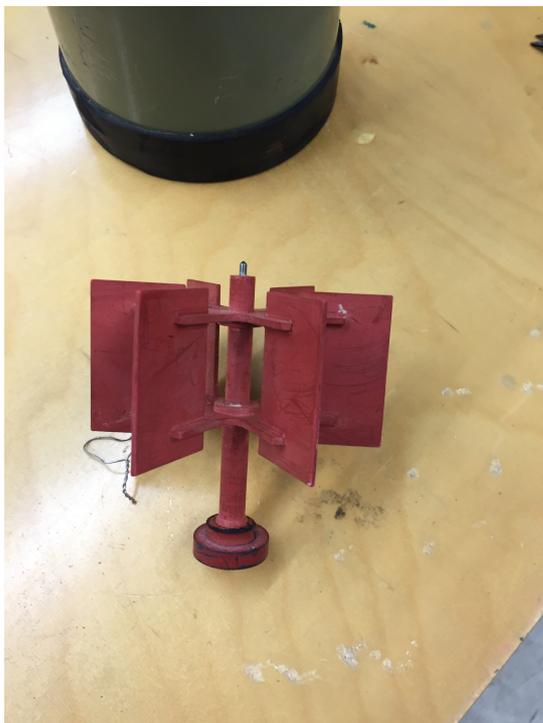


Fig 1. Aanderaa rotor

He decided not to bring on board the rotor of the currentmeter (fig.1) considering that the important data was the direction and the compass of the currentmeter will provide that.

The problem was that, on Aanderaa rotor currentmeter, if there is no movement of the rotor (no modulo), there is no

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direction recorded because there is no vector at all.

Then, we had to improvise a wing rotor.

The base of the rotor contains a magnet that induce another magnet inside the case for counting revolutions (fig.2)

We used a cylindrical plastic case, those used for packaging

echosounder dry paper (carbon paper) and divided it in three parts for the wings of the rotor In the images presented we used a CD plastic case. (fig. 3 to 5).

We solder the three wings with the same plastic to a plastic ink ball pen (fig. 6 and fig. 7). The ball of the pen made easy the rotation of the ax in the upper part (fig. 8). The lower needle (fig. 9) stacked in the pen cap did the same function in the lower part of the ax hold to the Aanderaa frame.(fig. 10 and fig. 11)



Fig. 2.

The rotor turns very well with no friction. We imagine that

underwater, the buoyancy of the plastic will avoid the friction of the lower part.

The magnet was attached to the pen with glue and tape (fig. 12 and fig. 13). At this time we have not thermo retractile tube.

Because the only data needed was the direction, no matter what current the device measured, only some rotation of the rotor was necessary for getting the heading of the SSS. Unfortunately we have no pictures of these moment but we reproduce the process at the present for showing how was the MacGyverade.

We saved the cruise!!!

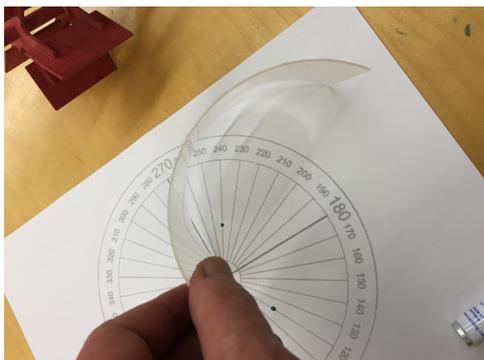


Fig. 3



Fig. 4

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Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11

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Fig. 13



Fig. 12

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