

9/30/69

"John Murray" cruise October 1969 part I, 2nd - 11th October

N.I.O. N.E. Atlantic

- Lay the new tide gauge on La Chapelle Bank.
- Recover NIO moorings 047, 048 and 049 laid during July 1969 on the continental slope of the Bay of Biscay.
- Drag for lost moorings 040, 041 in same area.
- Towing trials on Bath University dummy fish and faired cable.
- TSD dips in relation to tide gauge and elsewhere as time permits.

NOI NUTRIC PARTICIPANTS:

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NARRATIVE:

"John Murray" sailed at 2200/2nd Oct. from Barry for La Chapelle Bank in moderate weather. Next morning the E/S fish was streamed and the tide gauge prepared for laying next day. Approaching La Chapelle Bank just before noon 4th Oct., sounding lines were run across the area to allow a suitable spot to be chosen. Some sand waves were seen, with amplitudes (crest to trough) of about 10m, and a spot was chosen on the landward side of a 150m patch. The tide gauge was laid at 1557/4th Oct. in 162m depth, being dropped from the end of the trawl warp from 10m above the bottom with a Leavitt release. Its command pinger was switched off, and course was set for the position of mooring 047, approx. 30 miles west. Arriving there too late for reliable Decca fixes, a brief search was made attempting to switch on the command pinger, and then the vessel lay to overnight awaiting good Decca conditions.

Decca became reliable by 0800/5th and attempts were made at switching the command pinger and firing the release on mooring 047. These were unsuccessful and were given up at 1000 when course was set for mooring 048, in approx. 2000m depth. Again no response was obtained, when acoustic signals were transmitted at intervals between 1145 and 1230. Proceeding then to the third mooring, 049, a near-bottom test mooring in approx. 2800m. depth, a response was immediately obtained on transmitting to it at 1440, and three minutes later a bottom echo separating from the direct signal from the release pinger indicated that it was on its way to the surface. Nothing was seen, however, at the expected time nor during searching for several hours afterwards, and it seems most likely that the buoyancy changed during the ascent and caused the mooring (or most of it) to sink again. After much searching the pinger was turned off at 1945 and course was set towards mooring 040, previously lost and dragged for in 1000 metres depth.

Starting work there when the Decca became usable in the morning of 6th Oct., first the trawl warp was paid out with two sets of cable grapnels on the end, nearly 5000m of wire being paid out so as to get it wound smoothly on the winch drum after the repaired scroll shaft had been fitted. Shortening this back to 2000m, the grapnels were dragged across the mooring area and recovered by 1500, with no result. Next the "hookfish" was tried, a grapnel with an acoustic telemetering link, on loan from the Geophysical Institute at Bergen. Its acoustic signals could not be heard beyond 800m range, because of ship

wise, but its arrangement of jaws made it seem more suitable than ordinary cable grapnels for dragging for loose pieces of broken mooring. On this first attempt with the hookfish, it was dragged with 2000m of wire out for 4 hours and brought in at 2050, again with no result. The dummy fish belonging to the University of Bath was then streamed over the stern on 50 ft of faired cable and towed on various courses at 6 kts for an hour, after which the vessel again lay awaiting good Decca.

During 7th Oct. further attempts were made at locating moorings 047 and 048 and each of them was dragged for using the hookfish, with its acoustic unit removed. Nothing was recovered, however, and no acoustic signals seen from the command pingers and releases on the moorings.

On 8th Oct. dragging was concentrated on the position of mooring 040, laid in March from the "Discovery" and dragged for in the "Vickers Venture" in June and July. It was known that at least the acoustic release and some wire was on the bottom there, though no signals could be obtained from the release now. Two attempts were made, with the hookfish and approx. 20m of chain on 1600m of 8mm wire attached to the trawl warp, paying out a total of 2500m of wire each time. The drag was on the bottom for approx. 4 hours on each occasion, and swept over the area of the mooring several times, without success, except for a short piece of old wire recovered that was not part of any NIO mooring.

After trying to test the hydrographic winch and its conducting cable but being held up by trouble with the meter wheel, course was set towards the tide gauge position whilst repairs were made.

Arriving in the tide gauge area, according to soundings, by 0400/9th, the hydrographic winch was tested and two TSD dips made before the Decca became steady enough for locating the tide gauge itself. The TSD revealed large fluctuations in the depths of isotherms from 40 to 100m. Approaching the tide gauge position at 0915, signals were obtained from its command pinger, which was then switched off and course set to return to the site of mooring 040. Arriving there at 1355, the hookfish was lowered again and dragging continued with 2500m of wire out until recovery started at 1745. The echo-sounding fish was brought inboard, and when the hookfish was recovered at 1930, again unsuccessful, course was set towards Barry, where the ship arrived a.m. 11th Oct.

Weather throughout the cruise was good, winds only occasionally exceeding force 3, and swell being mostly slight or moderate.

CONCLUSIONS:

The tide gauge was laid as planned, and the successful switching of its command pinger on 9th Oct. showed that it was still in position after five days and that the sphere had not leaked seriously. The loss of moorings 047 and 048 is disappointing, but the absence of any acoustic response at all suggests that they may have broken adrift and may possibly be recovered at the surface later. From the successful release and subsequent loss of mooring 049 it seems possible that the Vickers deep buoyancy material may have failed in some way when the pressure on it was released. Despite the lack of success with the "hookfish" it seems a more hopeful instrument, as a means of dragging for lost moorings, than the usual cable grapnels are.

New Mooring (Tide Recorder)

NIO No.050

Date laid 4th Oct. 1969

Time " (start) 1515 (GMT+1)

" " (finish) 1557

Water depth 162m (corr)

Position Lat. 47° 40'.1N

Long. 7° 14'.8W

Decca coordinates (SW British chain)
Red F22.23
Green D 47.29

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J.C. Swallow
11th Oct. 1969.