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FR75(I)

IN CONFIDENCE: Not to be quoted without reference to the Laboratory.

CRUISE REPORT

FRS "EXPLORER"

18 April - 11 May 1973

OBJECTIVES:

1. To establish current meter moorings in the Fair Isle area and central Northern North Sea and to recover at the end of the cruise.
2. To monitor temperature, salinity and plankton distributions in the mooring areas.
3. To make additional current measurements using parachute drogues.
4. To make continuous surface temperature, salinity and chlorophyll measurements and plankton sampling along the 150 km path between the two mooring areas.
5. To carry out trials on moorings in 1000 m depth to the north of Shetland.
6. To collect water samples in selected areas for heavy metal analysis.
7. To establish a current meter mooring near the Isle of May at the end of the cruise.

NARRATIVE:

Explorer sailed from Aberdeen at noon on 18 April. The seven current meter moorings were deployed by 21 April after some delay due to unsuitable weather. A planned programme of hydrographic stations at this juncture had to be cancelled due to breakdown of both hydrographic winches. An alternative programme of parachute drogue tracking was then carried out. On the 24 April Explorer made passage to an area north of Shetland to experiment with a single anchor mooring in 1000 m of water. The mooring was deployed successfully but was recovered immediately because of suspected damage to the mooring wire and doubt about its capability of remaining in position. The forward hydrographic winch was temporarily repaired in Fetlar Bay, Shetland on the 26 April and this enabled a line of hydrographic stations along 1°E to be worked during the 27 and 28 April. Bad weather early on the 29 prevented further stations being worked and surface surveys of temperature and salinity were commenced but the weather soon became too bad for this to be carried out satisfactorily. Explorer docked in Aberdeen at 2300 hours on the 29 April and the opportunity was taken to have both hydrographic winches repaired.

Explorer was delayed in Aberdeen until 1300 on 2 May awaiting the arrival of Captain Rattray who replaced Mr Davidson who had become ill.

Stringency tests were undertaken on the 4ft subsurface sphere on the 2 May before detailed hydro/plankton and heavy metal sampling was undertaken near the moorings at Fair Isle on 3 May. Samples for oil analysis were collected west of Shetland on the 4 and 5 May. The following day one of the Central North Sea moorings was uplifted because of evident damage to it. The southern-most mooring was also uplifted later that day after which the ship made passage to the Isle of May where a current meter mooring was deployed. During this passage the generator crankshaft ruptured and Explorer was forced to go to Leith for repair at 1300 on the 7 May.

ADDITIONAL NOTE

Because the repair to Explorer's generator was estimated to take at least four weeks it was arranged that RV Clione of the Fisheries Laboratory, Lowestoft recover the North Sea moorings. This she did on the 30 May and 1 June. All moorings and instruments were ^{re}covered except part of mooring A which had been deployed 10 miles off Orkney. The instrument line had been parted from this mooring setting the subsurface float and one Plessey current meter adrift.

H D Dooley
19 June 1973