

R1/16

In Confidence: Not to be quoted without prior reference to the Laboratory

FRV "Clupea"

9CR85

Cruise 9/85

Report

31 July - 14 August 1985

Personnel

J H A Martin	PSO
R Payne	HSO
R D Adams	SO
G Slesser	SO

Objectives

1. The placement of 4 current meter moorings in the Northwest Shelf area and recovery of a similar mooring south of Foula.
2. A hydrographic survey of the Northwest Shelf with the deployment of drogues.
3. The working of the Jonsis Line.

Narrative

"Clupea" sailed from Buckie on 31 July and laid 2 moorings the next day. A visit was made to Scrabster on 3 August to pick up 2 more moorings which were then deployed on the following day. A hydrographic survey was carried out to the west of Orkney and to the east of Orkney as well when the weather was too inclement to work to the West. After a half landing at Kirkwall the mooring south west of Foula was recovered intact and hydrographic work was continued west of Shetland and in the Fair Isle area. The Jonsis Line was worked and further hydrographic work was carried east of Orkney. With time in hand a survey was carried out at the mouth of the Dornoch Firth before the ship returned to Buckie on 14 August for unloading.

Results

The mooring SW of Foula.

A feature of these records was the strong tidal currents observed by the meters, currents well in excess of 3 knots being recorded. Overall the near surface current meter showed a southerly residual with a maximum residual speed of 22cm s<sup>-1</sup>. Near bottom the residual direction was south-easterly with a residual speed of around 10cm s<sup>-1</sup>.

The hydrographic situation.

West of Orkney.

Surface temperatures and salinities were in the ranges 11.44-13.12 °C and 34.47-35.35 S(x 10<sup>-3</sup>). Low salinity water exercised a strong influence off the north coast of Scotland, extending as far north as 59°20'N. An isolated cell of low salinity water was located even farther north at 59°30'N, 4°30'W. An intrusion of high salinity water extended south easterly towards Hoy in the Orkney Islands giving rise to a strong frontal structure to the west of the Mainland and the northerly islands. A broad mass of lower salinity, cooler water extended to the north-west ending some 30nm west of Foula.

East of Orkney.

Surface temperatures and salinities were in the range 11.59-12.50 °C and 34.70-35.16 S(x 10<sup>-3</sup>). The area south of the JONSIS line contained no marked features with the contours of the various physical parameters orientated north/south. The JONSIS line was generally slightly cooler than normal and salinities across the section were lower than normal.

Dornoch Firth

A small survey was carried out in the Firth, showing range of 12.71-13.11 °C and 32.80-34.88 S(x 10<sup>-3</sup>).

J H A Martin

6 November 1985

Seen in Draft: W Smith

F.R.S. CLUPEA CRUISE 9 1985

