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FRV SCOTIA

6SR89

CRUISE 6/89

Report

21-30 June 1989

Personnel

W R Turrell	HSO
R Payne	HSO
G Slessor	HSO
R D Adams	SO
F Brown (Mrs)	ASO
C Skene	Senior Storeman

Objectives

1. To deploy 7 current meter moorings west of the Hebrides and west of Orkney.
2. To carry out hydrographic surveys in the areas west of the Hebrides and west of Orkney.
3. To carry out an intercomparison between the Neil Brown "SMART" CTD and the Applied Microsystems STD12.
4. To collect 3 caesium samples.

Narrative

On sailing from Aberdeen, *Scotia* made passage to the current meter mooring position north of the Hebrides. This was deployed on the morning of the 22 June. *Scotia* then sailed to Ullapool where additional wire rope required for the deeper current meter moorings was collected. These 2 moorings (Single string and Shelf Break) were deployed during the following day (23rd). During the following 3 days the remaining current meter moorings were deployed; West Hebrides (24th), North Minch (25th), Rona and West Orkney (26th). Hydrographic stations were performed when possible, and for the remainder of the cruise until 2000 Thursday 29 June when weather conditions stopped safe working. In all, 83 stations were performed using the Neil Brown Instruments "Smart" CTD, in conjunction with reversing bottles. These stations provide 12 sections from the Scottish coast out towards the shelf break west of the Hebrides, north of Scotland and in the northern North Sea, and include the JONSIS line. In addition continuous surface temperature and salinity as logged using the thermosalinograph and 3 caesium samples were collected. All chemical analysis was completed on board.

Results

West of the Hebrides the well mixed inshore waters generally displayed salinities of 34.9, temperatures of $\sim 11.8^{\circ}\text{C}$ and bottom water nitrate levels of $<0.2\mu\text{g/l}$. On the shelf the salinity increased to ~ 35.3 , with bottom nitrate values of $\sim 8\mu\text{g at/l}$. Within the Minch temperatures were $\sim 11.5^{\circ}\text{C}$ and salinities ~ 35.0 , although towards the mainland temperatures and salinities fell to $\sim 10.7^{\circ}\text{C}$ and ~ 34.6 respectively. Bottom nitrate values were $<1\mu\text{g at/l}$ in the Minch.

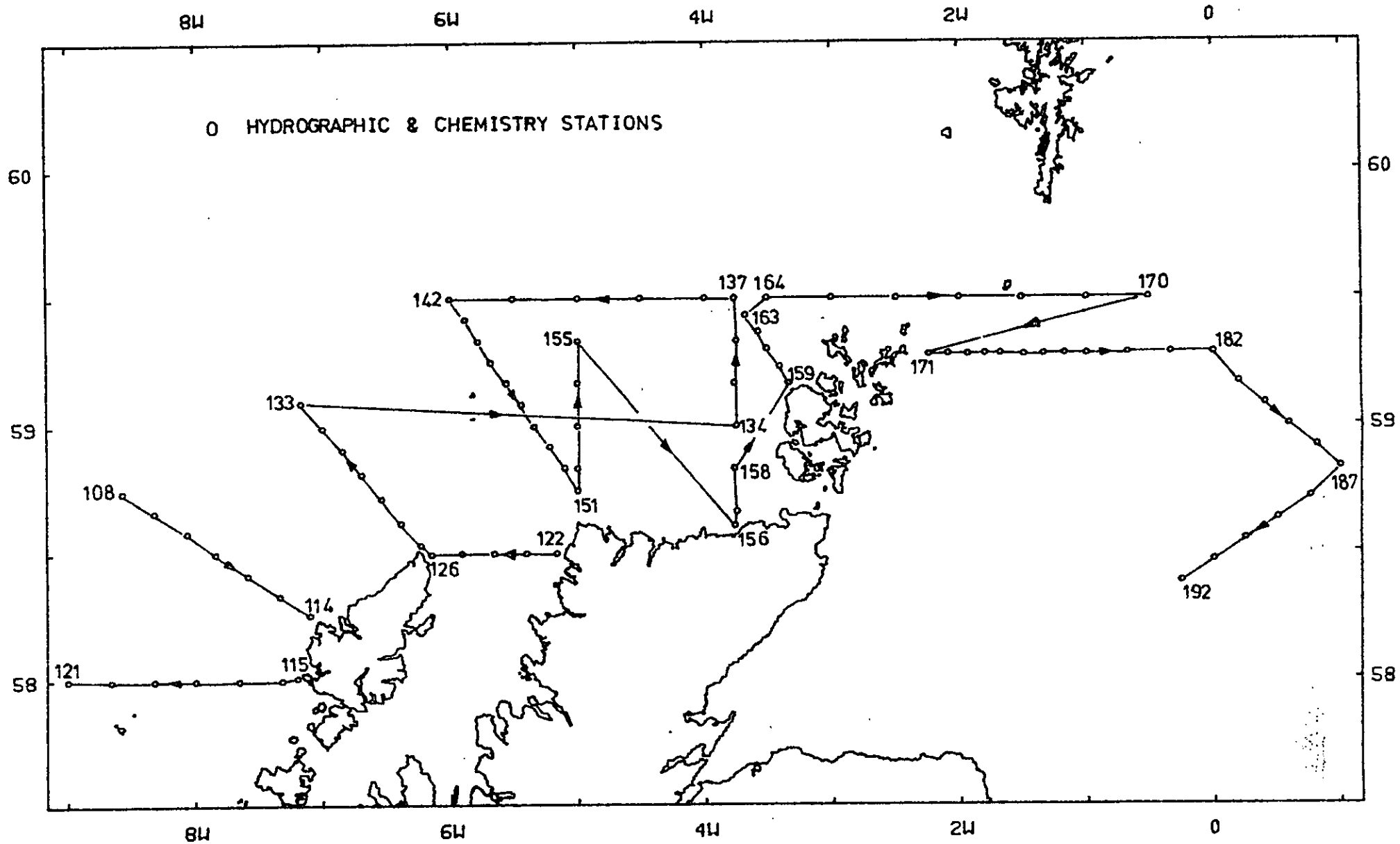
The coastal water was traced around the north western shelf to the area north of Scotland. At the 100 m contour the salinity was approximately 35.1, the surface temperature was 10.8°C and the bottom temperature 9.66°C .

Within the northern North Sea, in the vertically stratified waters offshore from the Fair Isle current surface temperatures were 11.7°C , salinity ~ 35.2 and bottom water nitrate values $\sim 9\mu\text{g at/l}$ while the current itself was characterised by water at S ~ 34.85 , T $\sim 10.87^{\circ}\text{C}$ and nitrate values at $\sim 2\mu\text{g at/l}$.

W R Turrell
15 August 1989

Seen in Draft: N E McInnes, CO

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