

R1/12

Not to be cited without prior reference to the Laboratory

FRV SCOTIA

Cruise 0792S

REPORT

13-22 June 1992

Personnel

R Payne	HSO (SIC)
G Slesser	HSO
R D Adams	SO
P Gillibrand	SO

Objectives

1. To collect hydrographic and chemistry (silicate) samples using water bottles and CTD profilers along the Fair Isle-Munken, Faroe and the Nolso, Faroe-Flugga, Shetland sections.
2. To carry out hydrographic studies, including the use of the vessel mounted ADCP in the northern North Sea along the Jonsis Line, along the EC Line and at selected stations as part of the initial study of the Scottish North Sea coastal zone.
3. To collect water samples for radio-caesium analysis by MAFF Lowestoft.

Narrative

Scotia sailed from Aberdeen at 1100 on 13 June 1992, proceeding immediately to pick up the Aberdeen caesium sample. Problems in displaying the ship's navigation information on the Laboratory monitors became apparent and despite seeking help throughout the cruise from Laboratory personnel and Decca, no improvements were made. A manual record of the ship's position was maintained throughout the cruise. A CTD survey working northeast up the EC Line was completed by 0830 on 14 June. The extended Jonsis Line was then worked with CTD and Knudsen bottles finishing at 0500 on 15 June. Samples were obtained for phosphate, nitrate, silicate and chlorophyll from all standard depths. The Fair Isle caesium sample was obtained and a short steam in very rough conditions saw the start of the Fair Isle-Munken Line and with the conditions moderating, it and the Nolso-Flugga Line were completed by 1400 on 17 June. Knudsen bottles were used throughout with samples for silicate taken from all standard depths. The ES1 and ES2 lines were sampled with the CTD finishing at 1200 on 18 June. A line to the east of Shetland was occupied for 25 hours to allow an ADCP survey of a possible inflow southwards off the east coast of Shetland. The ES3 line, the 50°30'N line and the WOC line were then sampled using the CTD finishing at 0330 on 21 June. Passage was then made for Aberdeen, picking up on route the caesium samples at Cape Wrath and Pentland Firth. *Scotia* docked at Aberdeen on 22 June.

No time was available to work selected stations in connection with the Coastal Zone Project.

Results

A thermosalinograph and a fluorometer were run throughout the cruise using the non-toxic pumped sea water supply from 3 m. The salinity and chemistry samples from the cruise await analysis. Considerable work remains to be done melding the manual record of the ship's position into the instrumented data sets obtained.

A preliminary assessment of the CTD raw data sections suggest the situation in the North Sea is typical for the time of year with a strong thermocline at 20 m in the south and 30 m in the north with little sign of a marked halocline. The Fair Isle Current shows clearly west of Jonsis 4. The ES1 and ES2 lines to the northeast of Shetland are occupied almost entirely by water of oceanic origin (salinity >35.35). High values of fluorescence (>2,500 units) were detected between Jonsis 3 and 4, FIM 9 (60 miles SE Munken), NF9 (60 miles SE Nolso) and at ES2/1 close inshore east of Shetland.

R Payne
22 July 1992

Seen in draft by: C J Brazier - Master, FRV *Scotia*

F.R.S. SCOTIA CRUISE 7 13-22 JUNE 1992

