R1/12

Not to be cited without prior reference to the Marine Laboratory, Aberdeen

FRV *Scotia*

Cruise 1599S

REPORT

14 September - 1 October 1999

Loading: Aberdeen
Unloading: Aberdeen

Personnel

G Slesser (In charge)
P Gillibrand
R D Adams
J Dunn
N Collie
C Wilson
M Pizzamei Proudman Oceanographic Laboratory

Gear

SeaBird CTD's

Objectives

1. To perform hydrographic surveys along the JONSIS standard section in the northern North Sea.

2. To perform hydrographic surveys along the standard Faeroe Shetland Channel sections.

3. To service two of the Nordic WOCE ADCP moorings.

4. To perform a CTD survey of the eddy formation area in the southern Faeroe Shetland Channel.

Narrative

Scotia sailed from Aberdeen at 1100 hours (all times are GMT) on Tuesday 14 September and proceeded towards the eastern end of the JONSIS line. A test 911+ CTD deployment was performed during the passage. Problems occurred during this deployment and a re-termination was required. While this was being carried out the SeaLogger CTD was prepared for deployment on the JONSIS line.

Work along the JONSIS standard section commenced at 0122 hours on Wednesday 15 September and was completed at 1356 hours on Wednesday 15 September (Stns 306-317). In addition to this work 25 car buoys of low nutrient water was collected for QUASIMEME.

Scotia then proceeded to the location of the first mooring NWSE (60° 16.20'N 004° 20.58'W). This mooring was successfully located acoustically and recovered by 0830 hours

Thursday 16 September. Following this *Scotia* proceeded to the location of the second mooring NWSD and again this mooring was successfully located acoustically and recovered by 1130 hours. An acoustic search for a release lost on the last cruise 0799S was carried out at approximately 60° 18.67'N 004° 7.85'W, its last known position, but no meaningful acoustic signals were logged.

Scotia then proceeded to the start of the Munken - Fair Isle section to commence CTD stations. Work started at 1733 hours and was completed by 1509 hours on Friday 17 September (Stns 318-331). *Scotia* then proceeded to the start of the Nolso-Flugga section. Work along this line commenced at 2025 hours that day and was completed by 2211 hours on Saturday 18 September (Stns 332-347). An overnight passage was made to the Faeroe Islands where 911 testing work commenced at 1100 hours followed by a SeaBird Sea logger CTD / SeaBird 19 CTD comparison test.

Following this *Scotia* made the passage to Torshavn and docked at 0800 hours Monday 20 September. The ADCPs were transported from the ship to the Faeroese Fisheries Laboratory for down loading of the data, replacing of the batteries and refurbishment of damaged parts of the mooring. Scotia left Torshavn at 1600 hours on Tuesday 21 September and made passage to the ADCP mooring NWSD. The ADCP mooring was successfully redeployed at 0935 hours on Wednesday 22 September (60° 26.88'N 004° 22.67'W, 806m), and *Scotia* proceeded to the previous location of the NWSE mooring which was also successfully redeployed at 1011 hours that day (60° 16.35'N 004° 20.63'W, 446 m).

On the afternoon of Wednesday 22 September a further 911 CTD trial was carried out followed by four CTD calibration stations. The CTDs (Stns 348-351) were completed by 1841 hours and hence passage was made to the start of a CTD survey in the Faeroe Bank - Wyville Thomson Ridge area. This survey commenced at 0238 hours on Thursday 23 September and was completed by 1807 hours on Saturday 25 September (Stns 353-392).

Thereafter passage was made to deep water (1,000 m) for auto function plankton winch trials. These were completed by 0100 hours on Sunday 26 September.

Scotia then proceeded to the North Mich to carry out two vessel mounted ADCP transect surveys. These began at 0519 hours on Sunday 26 September and were completed at 0835 hours on Tuesday 28 September. Following this a line of CTDs (Stns 393-399) were done along the North Mich to supplement the ADCP survey data.

For the remainder of the trip *Scotia* continued to perform a CTD survey across the shelf. A further 28 CTD casts were performed (Stns 400-427) until work was completed at 0925 hours on Thursday 30 September, when Scotia proceeded to Aberdeen, where she berthed at 0500 hours on Friday 1 October.

Results

The trip was characterised by good sea conditions throughout though experiencing dense fog on occasions, permitting all objectives to be achieved:

1. The JONSIS standard section in the northern North Sea was surveyed.

2. The two standard Faeroe Shetland Channel sections were surveyed.

3. The two Nordic WOCE ADCP moorings were both recovered successfully, the data down loaded, the instruments reset and redeployed. These data will be processed in the laboratory by recently developed software.

4. The CTD survey in the southern Faeroe Shetland Channel was surveyed.

In addition to the main objectives of the cruise two ADCP transects were performed which will provide valuable input to the modelling work being carried out on the Minch and a series of a CTD sections were carried out along the shelf edge. This was also the first exhaustive use of the vessel mounted ADCP. These ADCP measurements were supplemented by a line of CTD stations along the transects.

The CTD data, the Self Contained ADCP and Vessel Mounted ADCP data will be further processed and analysed on return to the laboratory.

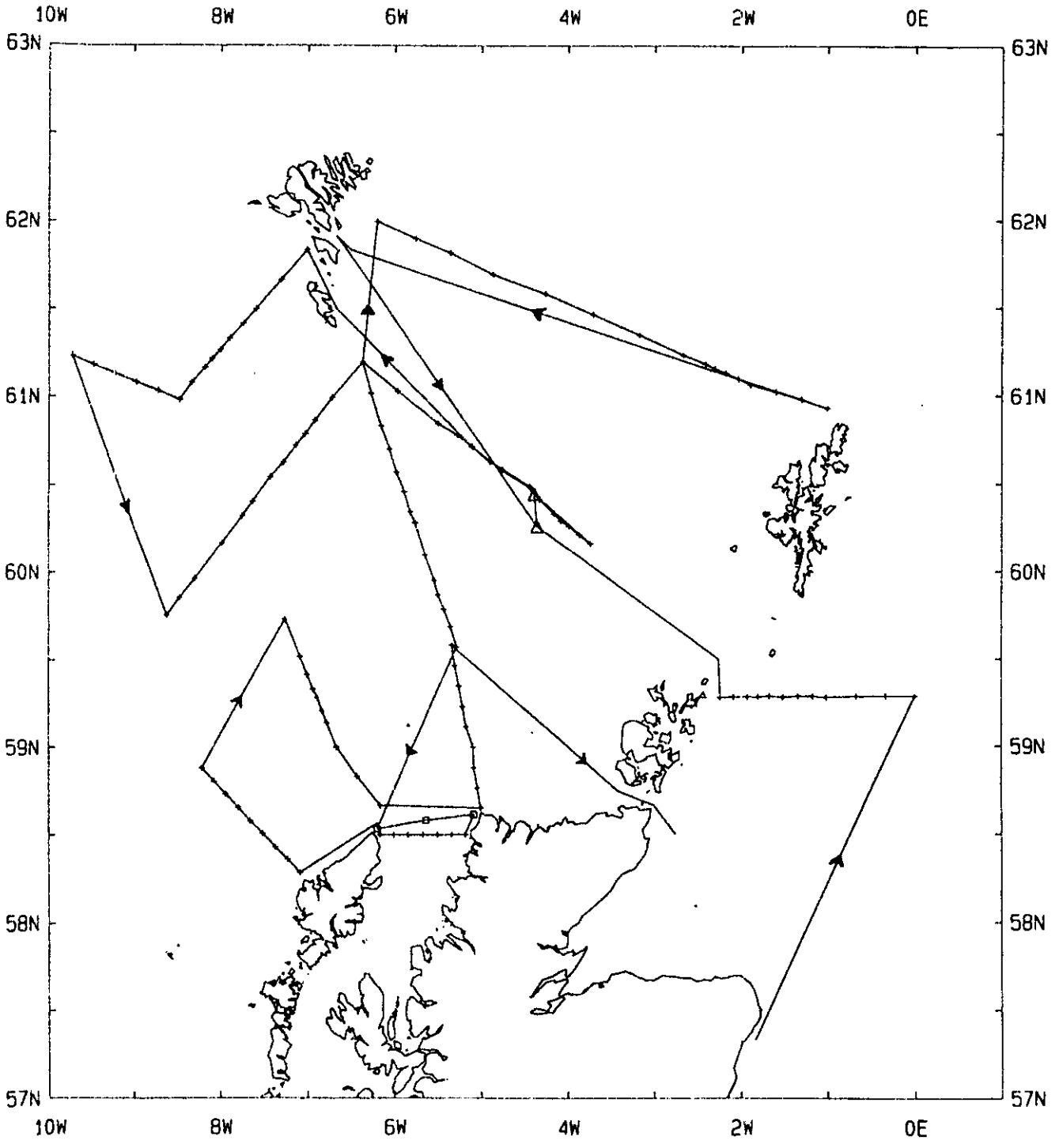
Further semi-automatic CTD deployment trials were carried out using a different type of potting compound for the re-termination of the EM cable.

G Slesser
11 October 1999

Seen in draft: D Hodge, Master
FRV *Scotia*

FRV Scotia - Cruise Track

1599S



+ - CTD Stations

Δ - ADCP Mooring Positions

❑ - Vessel Mount ADCP Transects