

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD  
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1985 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE : CRUISE 4

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF:

J A Durance  
J W Read  
S R Jones  
J Rees  
P M Hudson  
D Harper  
N D Pearson) First day only  
J C Robson )

DURATION:

Left Lowestoft 0850 h 19 March  
Arrived Lowestoft 0603 h 2 April

LOCALITY:

North Channel

AIMS:

1. To recover a current meter station from the North Channel and lay an array of 12 current meter stations.
2. To lay and recover a current meter test rig to compare the performance of modified meters.
3. To make a CTD survey of the North Channel.
4. To take water samples for analysis of cadmium lead and copper on board.
5. To lay the near bed velocity meter off Southwold on the outward passage and recover on return.
6. To take water samples for caesium analysis on passage to the Irish Sea.

NARRATIVE:

RV CLIONE sailed at high water and proceeded to Southwold where the near bed velocity meter was laid at slack water. Two guard buoys were laid to the north and south of the rig and Messrs Pearson and Robson were put ashore at Southwold by the inflatable boat. Whilst in Southwold harbour the outboard motor broke down and the ship's boat had to be launched to tow the inflatable back to the ship. All boats were back on board by 1450 h and the vessel set course for the Irish Sea, taking surface sea water samples for caesium analysis on route. By the afternoon of the following day the weather was worsening and by 1900 h the vessel was dodging. During the night the water samples which had been lashed to the rail on the boat deck broke adrift and some were lost as the carboys split. The CTD deck unit which was screwed down to the bench also broke adrift but fortunately damage was superficial. Little progress was made the following day and the night was spent anchored in Mounts Bay. RV CLIONE sailed from Mounts Bay at 0930 h on Friday 22 March and reached the working area in the North Channel by the early hours of Sunday morning after an uncomfortable passage against strong head winds.

Immediately on arrival in the working area wire tests of acoustic releases began in the deep water of the Beaufort Dyke. By 0702 h all twelve releases had been tested at 250 m depth, only one of the twelve failed to operate correctly. The vessel then moved to the Belfast Lough dumping ground where a CTD and water samples for nutrients oxygen and metal analysis were taken before the current meter test station with three types of meter closely spaced was laid.

A CTD section across the Channel was begun at 1306 h. Water samples for nutrients oxygen and metals were taken at all stations and caesium samples at selected stations. Two stations were completed before CLIONE steamed to current meter station G to attempt a recovery before dark. After three quarters of an hour spent trying to interrogate the acoustic release on station G the search was abandoned and the vessel returned to current meter station I to complete the third CTD station on the section and lay the current meter rig. This being completed by 1859 h.

The CTD stations and buoy laying began at 0630 h the following day and the first two stations H and C had been completed by 1133 h. On arrival at station G the search for the lost current meter rig was resumed for a further two hours during which time the CTD station was completed. Both the interrogation and release frequencies were transmitted but no response was heard nor any equipment seen on the surface. Before abandoning the search the switch off frequency was transmitted. The new station G was laid by 1516 h but in spite of adding an extra 50 m to the buoy wire the surface buoy was awash. After completing the CTD at the next station the vessel returned to station G at slack water, picked up the surface buoy and a further 100 m of wire was added. The rest of the CTD section and the laying of the current meter stations A, E and F was completed by 0030 h on Tuesday 26 March when the vessel set course for Fleetwood to pick up more gear.

Sailing from Fleetwood at 1300 h on 28 March RV CLIONE reached the working area in the early hours of 29 March. Laying of the three current meter stations on the southern transect of the Beaufort Dyke began at 0630 h and was completed by 1403 h. At each station 50 sea-bed drifters were released. Returning to the Belfast Lough current meter station the meters were recovered using the acoustic release which worked perfectly and the remainder of the rig was recovered in the conventional manner. Processing of the data tapes revealed that one type of current meter was not working correctly and the station was relaid using a different meter. Surface water samples for metal analysis were taken on the approach to this station and on leaving to steam to the south western end of the CTD section. At 2157 h the vessel began an echo sounder survey of the bottom profile across the channel. All the previously laid current meter buoys on this section were found to be in order and 50 sea bed drifters were released at each. On completion of this survey at 0034 h on Friday 29 March RV CLIONE steamed north to begin a CTD section along the axis of the Beaufort Dyke.

The first CTD station began at 0633 h. At 1410 h current meter station B was reached. As two of the experimental meters were not useable only one Aanderra meter remained to be deployed at this site. Unfortunately the meter was damaged during the laying operation and the station was abandoned at 1425 h. The CTD section continued until an increasing swell from the south forced work to be abandoned at 1700 h and the vessel set course for home. On passage surface water samples for caesium analysis were taken to replace those lost on passage to the Irish Sea.

RESULTS:

1. Eleven of the twelve proposed current meter stations were laid successfully. The establishment of the twelfth station was prevented by lack of serviceable equipment.
2. No trace of the station to be recovered was found.
3. The current meter test rig was successfully laid and recovered; one of the meters did not operate satisfactorily.
4. One CTD section across the North Channel was completed and a section along the Beaufort Dyke partially completed.
5. Water samples for analysis of cadmium lead and copper were taken and analysed on board. Samples for nutrients and oxygen were also taken on the CTD sections.
6. Sea bed drifters were released at each of the eleven current meter stations.
7. An echo survey of the bottom profile across the North Channel was completed.
8. The near bed velocity meter was laid off Southwold but could not be recovered at the end of the cruise because of the failure of the Pleuger active rudder.
9. Surface water samples for caesium analysis were taken on passage and within the working area.

J A Durance  
Scientist in Charge  
12 April 1985

SEEN IN DRAFT:

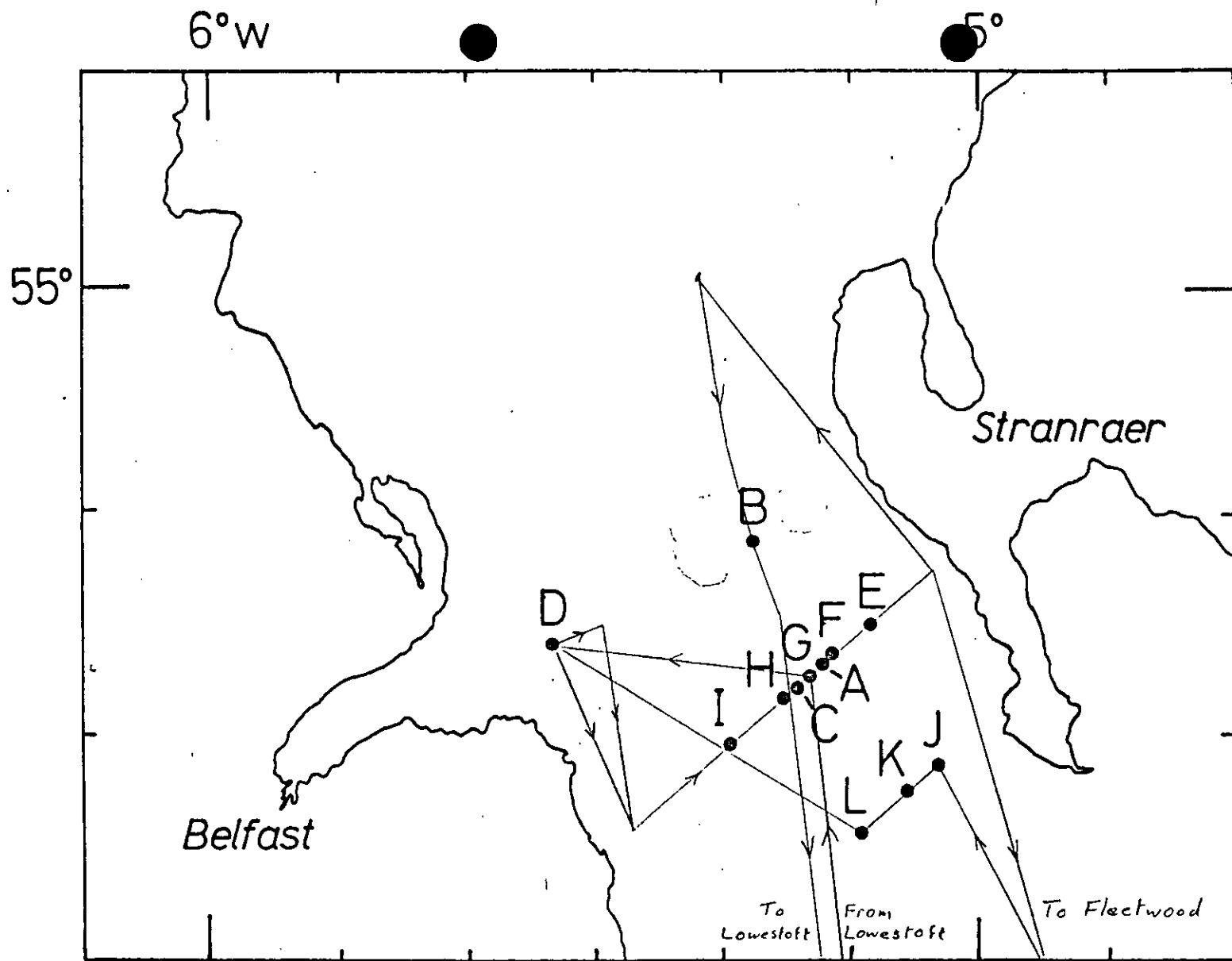
M J W  
E W P

INITIALLED:

H W H

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Moored current meters 20 March – 29 April 1985