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

1984 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 13

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

STAFF:

- A K Steele
- J O McHugh
- T C Doddington
- R J Read
- C J Gough
- J O'Grady (NEB)

DURATION:

Left Lowestoft 0820h 6 November
Arrived Lowestoft 0630h 20 November

LOCALITY:

Irish Sea

AIMS:

1. To collect and process for radiocaesium analysis, surface and near-bottom seawater from a grid of stations in the Irish Sea, and at selected stations on passage to and from the Irish Sea.
2. To determine the suspended load content of seawater at selected stations.
3. To carry out Dry Cloth and Air Sampler trials between selected stations.
4. To search for the missing Sellafield current meter.
5. To collect seawater at selected stations for analysis of Plutonium-238, Plutonium-239 + 240 and Americium-241.

NARRATIVE:

Clione sailed on the morning tide of 6 November and proceeded southabout to the Irish Sea. At 15 stations between Lowestoft and the southern entrance to the Irish Sea (Fig 1), 50 like samples of seawater were collected and processed on board for analysis of the ¹³⁷Cs and ¹³⁴Cs concentrations. At one station in the Celtic Sea 25 like samples were collected from the clean sea water pump and from a 30 like Niskin bottle deployed at the surface and retained for transuranic analysis. Seawater sampling commenced in the Irish Sea (Fig 2) at 1550h on 8 November, sampling sea water from the ships clean seawater pump and nearbottom seawater, using 30 like Niskin bottles. On 11 November the weather deteriorated and the grid of stations to the east of the Isle of Man and in the vicinity of Sellafield were worked in adverse conditions; short steep seas and up to 35 knots of wind. At 2250h 11 November, all stations to the south and east of the Isle of Man had been completed and after working the stations immediately to the west of the Isle of Man, CLIONE berthed in Douglas at 1007h 12 November to take on water and provisions. CLIONE sailed from Douglas at 0908h on 13 November and by 1040h, 14 November had completed the Irish Sea sampling grid of stations. The northabout return passage progressed smoothly

until clear of the Minch. In an ESE gale after completing the station in the vicinity of 60°N 30°W shelter was sought in Busta Voe where CLIONE anchored from 1827h 16 November until 0908h 17 November. The more northerly stations were abandoned and CLIONE returned to Lowestoft in adverse weather conditions. In the early hours of 19 November, the weather improved and CLIONE docked at Lowestoft on the morning tide of 20 November.

RESULTS:

With the exception of the return passage from the Irish Sea, where there was a slight modification to the cruise track, all of Aim 1 was completed. 17 samples were collected and processed for subsequent radiocaesium analysis on passage to the Irish Sea; 112 samples were similarly treated in the Irish Sea; and 41 samples on the return passage.

At 52 stations where surface and nearbottom sea water samples were collected for radiocaesium analysis, aliquots of the sample were processed for subsequent suspended load determinations (Aim 2).

Because of late delivery of equipment the Air Sampler trials could not take place. Dry Cloths were deployed between selected stations throughout the cruise and the exposed cloths retained for subsequent radioisotopic analysis (Aim 3).

Because of the adverse weather conditions when CLIONE was in the Sellafield vicinity on 11 and 13 November, no attempt was made to search for the missing Sellafield current meter (Aim 4).

At one station in the Celtic Sea, 3 stations in the Irish Sea and one station in the Minch, surface and near surface samples were collected for subsequent transuranic analysis. (Aim 5).

A K Steele
27 November 1984

Seen in draft: J R F R C N

Initialled: H W H

Distribution:

Basic List:

A K Steele

J O McHugh

T C Doddington

R J Read

C J Gough

J O'Grady NEB

Mr J A Hetherington - SDD

Dr S R Jones - BNFL

Dr J D Cunningham - NEB

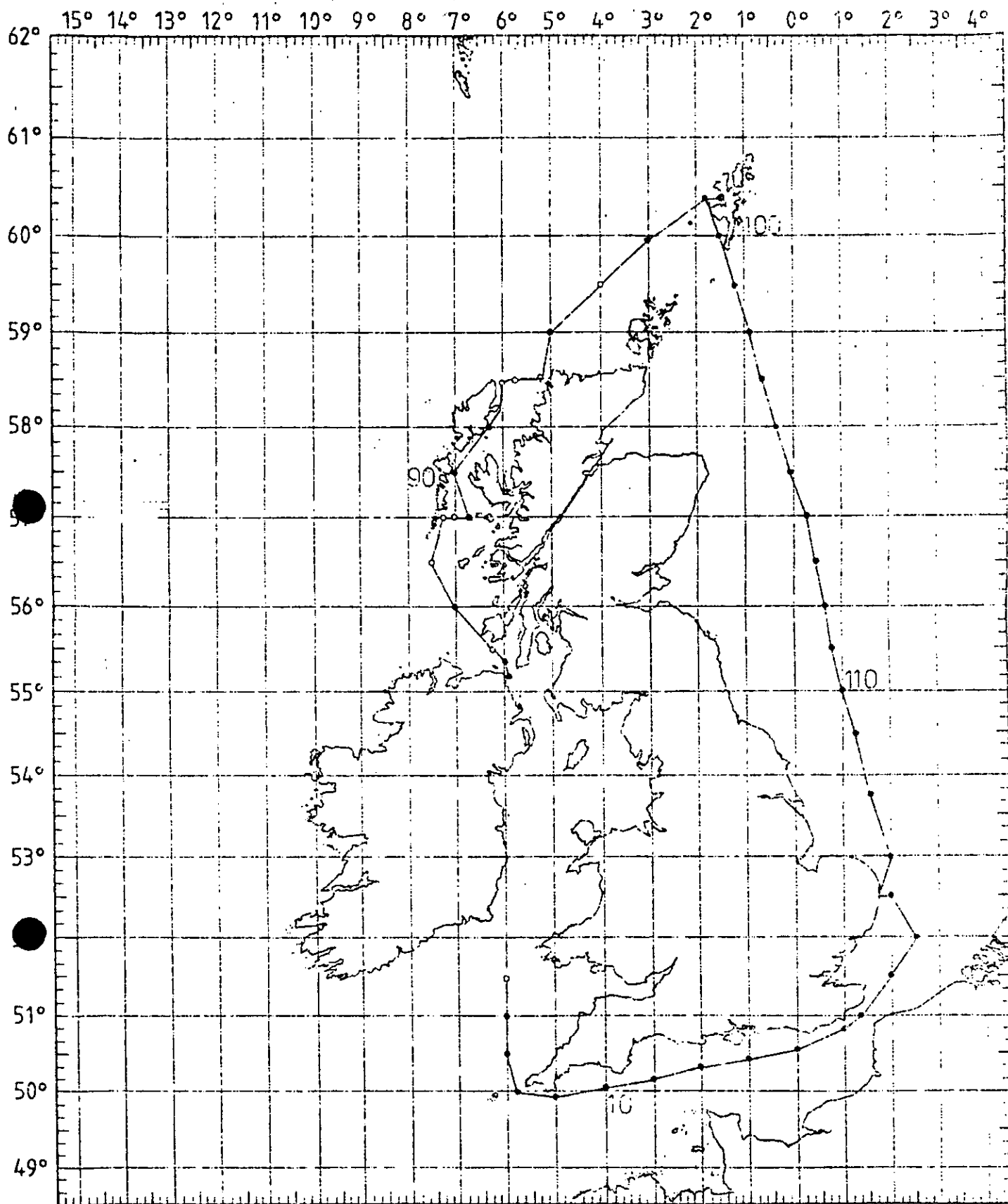
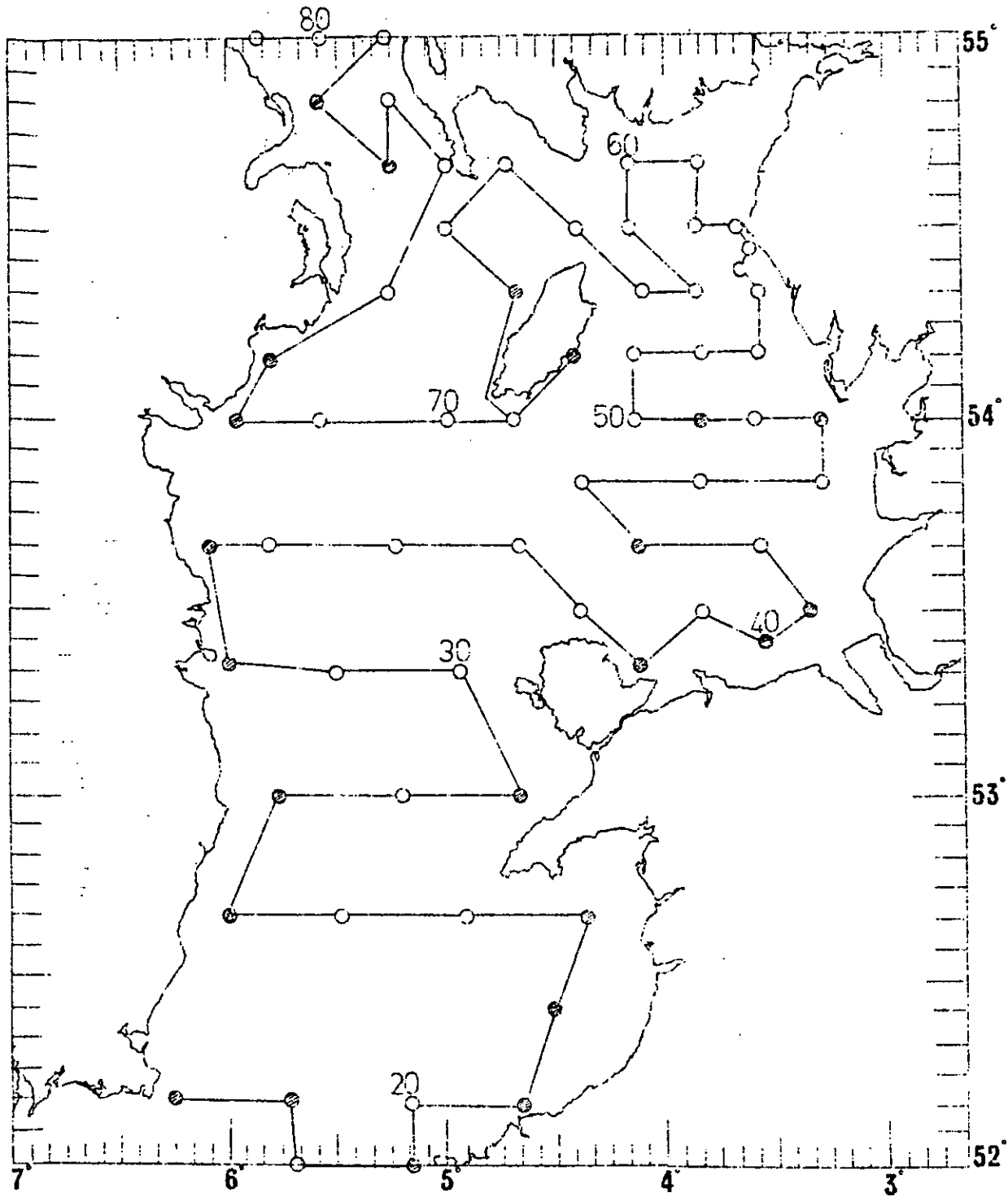


Fig. 1

CRUISE TRACK - CLIONE 13/84

- - SURFACE ONLY
- - SURFACE/DEPTH



CRUISE TRACK- CLIONE 13/84 (● SURFACE ONLY — ○ SURFACE/DEPTH)

Fig 2.