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

1987 RESEARCH VESSEL PROGRAMME

REPORT : RV CIROLANA : CRUISE 2
(PROVISIONAL: NOT TO BE QUOTED WITHOUT PRIOR REFERENCE TO THE AUTHOR)

STAFF:

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A M Watson
J Dann
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T Watson

DURATION

Left Lowestoft 1530h 23 January
Arrived Lowestoft 0043h 19 February
All times are Greenwich Mean Time

LOCALITY:

North Sea

AIMS:

1. To participate in the ICES International Young Fish Survey.

2. To sample post-larvae herring and sprat using the Isaacs-Kidd midwater-trawl.

3. To take bottom and surface temperature and salinity readings and collect nutrient samples on each trawl station.

4. To collect and preserve stomachs of cod, whiting and saithe for the ICES North Sea Stomach Sampling project.

5. To obtain during the survey, frozen dab samples from the Humber-Dogger area for parasitological monitoring (Mr Rowlatt, Burnham), small gadoids for fish feeding experiments (Dr Bromley), frozen samples of long rough dabs for population studies (Mr Ntiba).

6. To obtain additional samples of herring from the central and southern North Sea for morphometric studies using the portable X-ray machine.

NARRATIVE

CIROLANA sailed south and started the Isaac-Kidd midwater trawl (IKMT) survey at the southern end of the western block of stations off the Thames estuary at 1850h 23 January. The regular pattern of fishing the IKMT during the night for post-larvae herring and sprat sampling and the GOV (Grand Ouverture Verticale) trawl in the day for young fish sampling was quickly established. Nansen bottle casts to obtain surface and bottom temperature and salinity measurements and nutrient samples were made either before or after each GOV trawl haul. Usually, six IKMT hauls were made each night

and three GOV trawl hauls each day. All fish were identified and measured; age and stomach samples were obtained from the GOV trawl hauls and the data were entered into the IMAGE database.

Problems were encountered with the deployment of the Isaacs-Kidd midwater trawl during the first six days. After being initially rigged to fish down the ramp on the net drum winch using the Scanmar system to measure the sampling depth, it was re-rigged over the starboard quarter on the electric cable as a result of the Scanmar transducer becomming temporarily jammed in the instrument tube. It was used for several nights over the side but the cable frequently jumped out of the aluminium sheave and, eventually, the outer casing was damaged. The IKMT was re-rigged down the ramp on the still-functioning electric cable and no further problems were encountered.

The Scanmar transducer was deployed without the protective skirt which had caused the jamming problems and was used for a period alongside the headline transducer to measure the headline height. Good agreement was obtained and the Scanmar was used alone for the remainder of the trip.

Only one invalid GOV tow was experienced in the western block of stations (rectangle 40F0) and this block was completed on 3 February (Figure 1). CIROLANA steamed overnight to the Danish coast and completed a further 6 GOV and IKMT stations in the Danish coastal block. Bad weather on the night of 5 February prevented use of the IKMT and the ship went into Esbjerg at 0930 6 February. A damaged IKMT spreader bar was repaired and stomach samples were collected by the Danish Fisheries Institute.

CIROLANA left Esbjerg at 1000h 8 February and continued to work the Danish block of stations and the Dutch coastal block without interruption following the established pattern of 2 or 3 GOV hauls in daylight and up to 6 IKMT hauls at night.

The allocated survey grid was completed at 1440h 12 February. During the remainder of the trip a further 15 GOV trawl hauls were made in the German and Southern Bights principally to provide material for herring morphometric studies. The catches were treated in the same way as those from the allocated grid and will be reported as part of the survey.

Ship-to-ship telex contact had been established during the second week and preliminary data on fish catches was successfully transmitted to RV TRIDENS on a regular basis. We also received from TRIDENS the preliminary data obtained by the other ships in the survey. TRIDENS was having difficulty completing the IKMT hauls allocated to her and six additional rectangles in the Southern Bight were taken up and completed by CIROLANA.

The final haul took place in rectangle 34F3 and was completed at 0840h 18 February. CIROLANA set course for Lowestoft and docked at 0043h 19 February.

RESULTS

1. Sixty-five hauls, 1 of which was invalid, were made with the GOV trawl (Figure 1). Only one of the allocated rectangles was not fished (37E9, due to the nature of the bottom) and the allocated survey was completed in 18 days in weather that was only rarely marginal. 15 additional tows for herring were worked in the recommended manner. Catch data for herring, cod, haddock, whiting, Norway pout, sprat and mackerel were reported to the survey coordinator on TRIDENS using ship-to-ship

telex. All fish were sorted and weighed using the Eilersen electronic balances and samples of each species were measured. Otolith samples of cod, haddock, whiting, Norway pout, sprat and herring were taken (Table 1) and the majority of the otoliths (except sprat) were read during the cruise. The X-ray generator was used to determine the vertebral counts of small herring. The catch, length and age data were entered into the IMAGE database as the trip proceeded.

2. Ninety-four tows were made with the Isaac-Kidd midwater trawl during the hours of darkness (Figure 2) and the larvae of herring and sprat were measured. Herring larvae were relatively evenly distributed over the survey area whereas sprat were restricted to the Southern and German Bights.

3. Surface and bottom temperatures, salinity and nutrient samples were obtained at each GOV trawl station except for two. Surface temperature data were sent daily to Lowestoft for analysis before transmission to the Deutsches Hydrografisches Institut in Hamburg.

4. Stomachs of cod (655) and whiting (1310) were preserved for the ICES North Sea Stomach sampling project.

5. Six frozen samples of dab were obtained for the Burnham laboratory; 12 blocks of small gadoids were frozen for fish feeding experiments and length stratified samples of long rough dab were frozen from each roundfish sampling area for population studies. The heads of 320 sprat were presented in alcohol for otolith studies.

6. Herring were photographed with the X-ray machine and the vertebrae counted (130 plates from 10 sampling areas). Fifteen extra tows were made in the German and Southern Bights to obtain additional material for this work. Experimental plates of herring larvae (8) and long rough dabs (4) were also taken.

7. The HP1000 computer system functioned throughout the cruise without any problems and was used extensively to load the GOV survey data using the Groundfish survey suite. Outputs were prepared and the data were fully checked. A file was prepared to the ICES format. The system was also used to load historic data from a number of Norway pout surveys.

8. The Scanmar system was used successfully to measure the headline height and wing-spread on the majority of GOV hauls. The initial problems of the transducer jamming in the instrument tube were solved by deploying it without the protective skirt; the inflated tube suffered little damage during the trip. Occasionally a poor signal was obtained but this could usually be traced to non-alignment of the net or shipboard transducers. A reliable method of locating the shipboard transducer in the instrument tube is probably required.

R G Houghton
19 February 1987

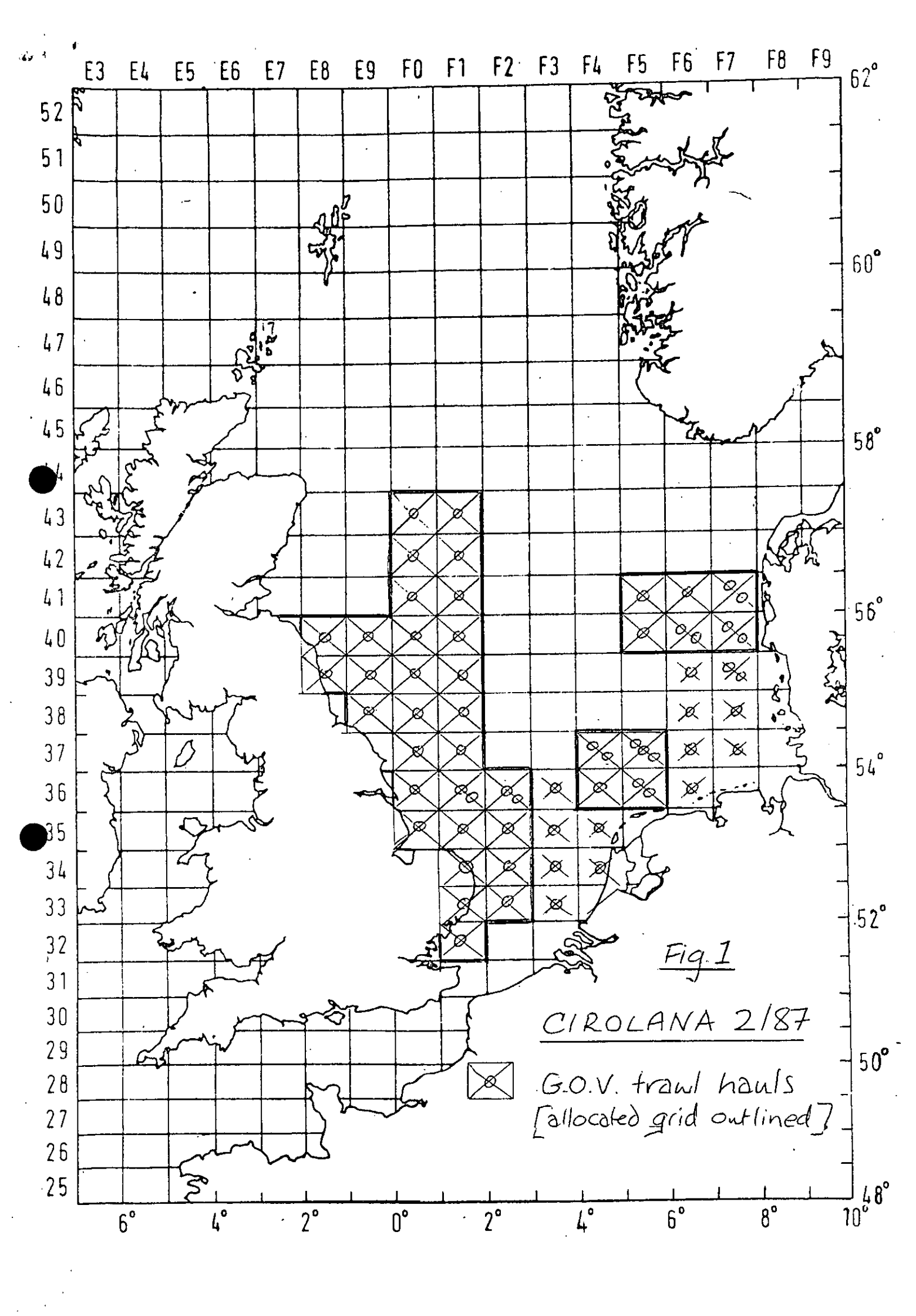
SEEN IN DRAFT: M J Willcock (Master)
E W Pearson (Fishing Skipper)

INITIALLED: D J G

DISTRIBUTION:
Basic List+
Staff on cruise

TABLE 1 CIROLANA 2/87 - NUMBER OF OTOLITH PAIRS TAKEN AND READ DURING THE CRUISE (NOT READ IN BRACKETS)

	ROUNDFISH AREA					
SPECIES	2	4	5	6	7	TOTAL
COD	184	227	120	(135)	25	691
HADDOCK	257	251	0	0	1	509
WHITING	235	195	198	(99)	60	787
N.POUT	101	30	0	0	0	131
HERRING	183	439	228	551	125	1526
SPRAT	+	+	+	+	+	(1081)
					TOTAL	4725


E3 E4 E5 E6 E7 E8 E9 F0 F1 F2 F3 F4 F5 F6 F7 F8 F9
52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25
62° 60° 58° 56° 54° 52° 50° 48°
6° 4° 2° 0° 2° 4° 6° 8° 10°
Fig. 1
CIROLANA 2/87
G.O.V. trawl hauls
[allocated grid outlined]

CIROLANA 2/87 - I.K.M.T. HAULS

SHOWING :
CRUISE TRACK

COASTLINE

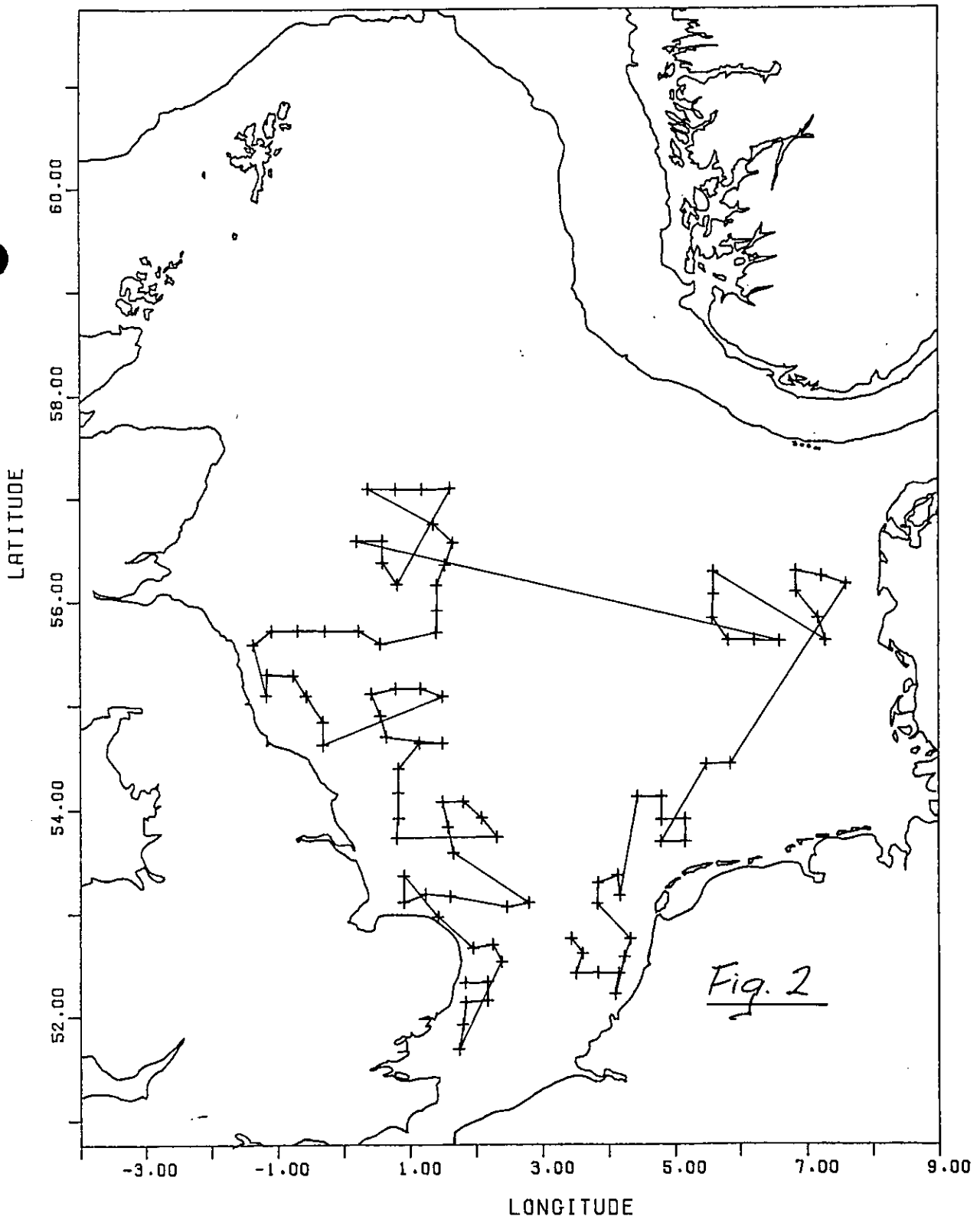


Fig. 2