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

1991 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 9
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF: P J Bromley (SIC)
A R Child
T W Boon
B Mumford
T Watson
J Dann
A M Watson
D J Brown
D W James
P Welsby (23 October-5 November)

DURATION: 23 October-20 November 1991

LOCALITY: North Sea

AIMS:

1. To carry out the first of a series of 4th quarter groundfish surveys of the North Sea using the GOV trawl as part of the ICES coordinated bottom trawl survey programme and to obtain information on:

   a) Distribution and abundance of all fish species.
   b) Length and age distribution of commercially important species.
   c) Distribution of fish in relation to their environment.
   d) Distribution of macrobenthos.

2. To measure surface and bottom temperature and salinity.

3. To collect material for fish identification courses.

4. To provide fish samples for contaminant studies under the National Monitoring Plan (A Franklin).

5. To collect samples of heart, gonad or brain from cod for Dr P Peppin, Department of Fisheries and Oceans, Canada.

6. To collect samples of herring for K Naish, Swansea University and herring hearts for D Bucke.

7. To collect crabs for Dr B Thompson.

8. To collect gobies for Dr P Miller, Bristol University.

9. To collect stomach samples for the 1991 ICES stomach sampling programme.

NARRATIVE

RV CIROLANA departed from Lowestoft at 0824 GMT on 23 October and headed northwards to commence the first fishing station of the 4th quarter groundfish survey at 53°56N 01°18E that evening. Thereafter a typical days pattern of work was 2-4 x 30 minute tows at predetermined positions with a GOV trawl. The trawl was fitted with SCANMAR sensors to record door spread and headline height and temperature. All fish species caught were weighed and measured and otolith samples were taken from designated species. For the purposes of the ICES stomach sampling programme, stomachs of primary and secondary predators were taken and frozen. Water samples were collected by Nansen bottles at all but a few trawl stations. A record of surface and bottom temperature was maintained and water samples were returned to the Laboratory for salinity determination.

The northern stations were fished during the first six days, taking advantage of fine weather and the longer daylight hours. The next fifteen days were dogged by persistent bad weather and fishing was limited to the less rough spells in the centres of and the ridges between depressions. Mr Welsby and an assistant cook were put ashore by searider in Peterhead on November 5th, along with frozen fish stomachs for the SOAFD Marine Laboratory, Aberdeen. Earlier attempts to put ashore at Aberdeen were abandoned because of rough seas. In the event, Peterhead harbour proved to be an excellent anchorage for offloading men and equipment. Illness prevented the replacement scientist reaching the boat.

The option of a mid-cruise break in Esbjerg was not taken up because of slippage in the sampling schedule caused by the gales. Stern tube oil was picked up by searider from Hartlepool on November 14th.

Despite the persistent bad weather only 11 stations could not be fished due to rough conditions in the mid-region of the North Sea (as a rule two attempts were made to fish a station before it was abandoned). Finer weather enabled the southern North Sea to be comprehensively sampled, including an extra station to be fished in 33F3 at the request of the Dutch.

By the middle of the penultimate day a gale halted fishing just two stations short of completing the grid (32F1 and F2). That evening it was too rough to clean out the laboratories as RV CIROLANA dodged to Lowestoft overnight. Fortunately it fined away sufficiently to clean up and dock the following morning at 0740h GMT on 20 November.

A cruise track and station numbers are appended.

RESULTS

1. Sixty-one ICES rectangles were fished with valid 30 minute tows at four knots ground speed. The standard rig GOV trawl with 50m bridles was used throughout and no problems were encountered on the northern stations previously fished with arctic bobbins or without footrope chains and shortened lower leg chains. The only gear damage during the trip was the belly out on three occasions - two of which were re-shot successfully.

Square 49E9 was not fished because of the poor state of the ground and the squares lost through bad weather were 47E8 and E9, 43F2, 42F2-F6, 40F2 and 32F1 and.2. The majority of hauls were in daylight, although 12 were undertaken in the dark rather than drop the station altogether.

All fish at each station were weighed and measured and the otolith target of 1 fish per cm length group for selected species was generally achieved. The results were computer logged. The number of otoliths taken was as follows:

ROUNDFISH AREA

SPECIES	1	2	3	4	5	6	7	TOTAL
COD	200	51	25	23	26	46	22	393
HADDOCK	576	156	201	45	0	0	0	978
WHITING	469	195	198	105	107	280	60	1414
SAITHE	83	3	0	0	0	0	0	86
PLAICE	12	11	39	51	43	149	104	409
N.POUT	218	71	60	36	0	0	3	388
HERRING	103	5	N/A	70	18	193	N/A	389
MACKEREL	125	3	0	0	0	53	0	181
SPRAT	100	100	100	100	100	100	100	700

The SCANMAR headline height sensor worked well on the new GOV trawl but after the net had been used for some time the readings became unreliable. After it was shackled directly to the headline under the kite it worked perfectly. Headline height, door spread and temperature were logged to a micro.

Associated benthos was weighed, recorded and photographed at the trawl stations and a morlog record was also kept.

2. Surface and bottom temperature and Nansen salinity samples were taken in 53 of the ICES squares fished, to give good coverage of the North Sea as a whole.

3. A range of species were collected for the fish identification course.

4. Fish samples for contaminant studies were collected at eight stations in the SE North Sea, totalling 29 cod, 160 whiting and 147 dab.

5. Samples of material were collected for Dr P Peppin of Dept Fisheries and Oceans, Canada from 23 cod.

6. 300 herring livers were taken for mitochondrial DNA analysis at U.C.Swansea. 100 herring were taken from two sites (38F2 and F3) for FDL-Weymouth for fungal infestation study.

7. 47 Edible crabs (*C.pagurus*) were collected at 15 statistical rectangles. In addition specimens of Eupagarus, Liocarcinus, Corystes, Inachus, Hyas, Maja and Atelecyclus were preserved for electrophoretic study.

8. 50 gobies were taken for taxonomic analysis at Bristol University.

9. Stomach samples were taken routinely for the ICES stomach sampling programme, the numbers being as follows:

SPECIES	EXAMINED	REGURGITATED	COLLECTED
Cod	453	133	225
Haddock	1658	666	718
Whiting	4402	2336	1392
Saithe	370	133	237
Mackerel	232	43	189
Rays (Var)	280	32	190
Dogs (Var)	47	5	42
Gurnards (Var)	903	713	190
Megrims	16	0	16
Turbot	4	1	3
LR.D	256	38	218
Hake	31	14	17
Ling	11	8	3
Scad	220	15	205
Monk	24	5	19
Halibut	1	0	1
Brill	2	1	1
Total	8910	4143	3667

The numbers collected include 0-groups under 15cm in length which were frozen whole.

P J Bromley
27 November 1991

SEEN IN DRAFT: Captain B Chapman - Master
Mr J Harper - Senior Fishing Mate

INITIALLED: JGS

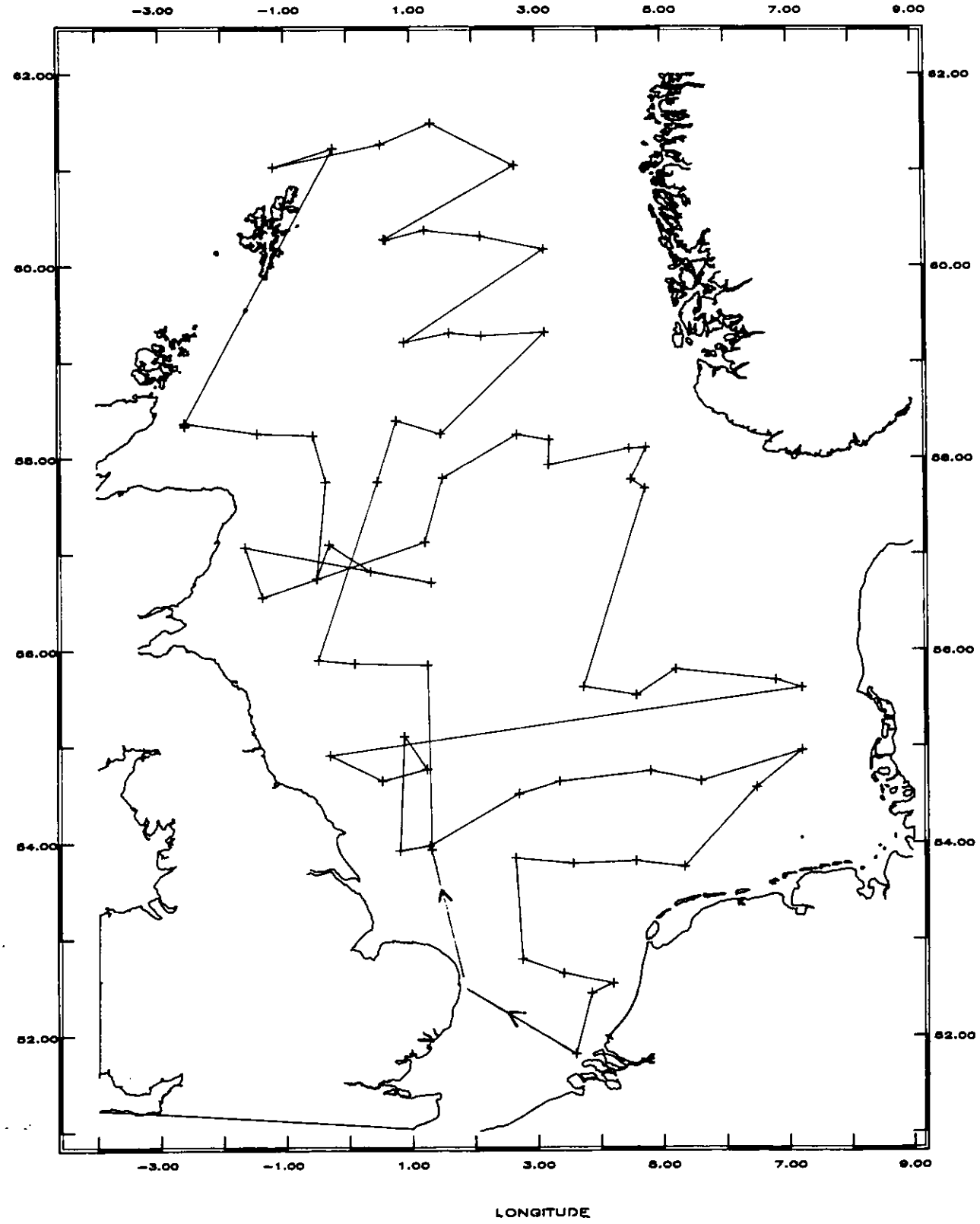
DISTRIBUTION:

Basic List +

P J Bromley (SIC)	B Mumford	A M Watson	P Welsby
A R Child	T Watson	D J Brown	
T W Boon	J Dann	D W James	

CIROLANA CRUISE 9/91

SHOWING :
CRUISE TRACK
STATION POSITION
COASTLINE



CIROLANA CRUISE 9/91 VALID TRAWL HAULS

SHOWING :
STATION POSITION
STATION NUMBER
COASTLINE