MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, NR33 OHT ENGLAND

1988 RESEARCH VESSEL PROGRAMME

REPORT : RV CIROLANA : CRUISE 3

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

STAFF : P O Johnson
D J Symonds
S Flatman
Mrs M J Boon
J Dann
D W Palmer
S Warnes
Mrs J Loveday
Mrs A Sutcliffe

DURATION : 1-28 March

LOCALITY : Western English Channel; Celtic Sea; North Biscay

AIMS:

1. To carry out a ground fish trawl survey in the above sea areas extending offshore to the shelf edge.

2. To biologically sample demersal and pelagic fish.

3. To sample pelagic shoals, with particular reference to mackerel.

NARRATIVE:

(TIMES G.M.T)

CIROLANA left Lowestoft at 1930h on 1 March and made a good passage to a position 50'30'N 12°00'W where sufficiently deep water was available to stream new trawl warps and tighten them on their drums. This operation was carried out in the early hours of 4 March, following which the first three shelf edge trawl stations were carried out later that day off south west Ireland. The wind was initially a fresh northerly with moderate swell, but over the next few days the weather gradually improved and good progress was made working the shelf edge stations. 16 were completed by 7 March, but on 8 March the port winch barrel clutch broke down during shooting and although a temporary repair was made it failed again under test. The survey was then terminated and course set for Falmouth at 0915h, where CIROLANA docked at 0830h on 9 March for winch repairs. These were completed late on 11 March, and departure from Falmouth was made at 0910h the following morning. A trawl haul was made to test the winch at a station just south of the Eddystone later that morning. This proved satisfactory and course was set to resume the shelf edge stations. A further 8 were completed on 13-14 March, but then the weather rapidly deteriorated with up to storm force SW'ly winds on the 15th March. This resulted in the vessel dodging until later on the 16 March when work was able to resume. The weather remained generally unsettled with uncomfortable swell conditions and fresh SW-W winds over the following week (17-24 March). In this period the stations covering the Celtic Sea and south west approaches were completed.

The weather again deteriorated later on the 24 March, with a severe W'ly gale and heavy swell, which resulted in further dodging in the vicinity of the shelf edge west of Ushant on 25-26 March.

At this time the 4th engineer (R Head) had unfortunately developed a severe

infection, and we were advised by radio doctor that he should receive hospital treatment as soon as possible. The survey was thus finally terminated and course set for Mounts Bay where the patient was taken off by pilot vessel at around 2000h on 26 March. Course was then set for a return to Lowestoft where CIROLANA docked at 1815h on 28 March.

RESULTS:

AIM 1 : A total of 50 valid trawl hauls were completed within an area bounded by 48°00'-52°30'N and 04°20'W-11°45'W, extending to the shelf edge (maximum depth fished around 270m). See attached station chart.

Periods of bad weather and the winch breakdown resulted in a loss of 8 of the originally planned stations in the southern French section of the survey area.

A Portugese High Headline trawl was used on all stations, and a transducer check showed a central headline height of 6.5 metres. The gear was fitted with rubber bobbins, tickler chain and codend shrimp mesh liner, and towed with Polyvalent trawl doors.

AIM 2 : All species caught were weighed and measured (with sub-samples taken where necessary) and otoliths taken from a selected range of species (see table below).

CIROLANA CRUISE 3/88 NUMBERS OF OTOLITHS BY ICES AREA

| | AREA | | | | | |
|---|---|---|---|---|---|---|
| SPECIES | 107E | 107F | 107G | 107H | 107J | TOTAL |
| Plaice | 10 | 4 | 10 | 2 | 8 | 34 |
| Megrim | 9 | 4 | 25 | 39 | 68 | 145 |
| 4 Spot Megrim | 0 | 0 | 0 | 0 | 29 | 29 |
| Lemon Sole | 2 | 10 | 9 | 21 | 11 | 53 |
| Witch | 0 | 4 | 1 | 0 | 7 | 12 |
| Cod | 3 | 10 | 5 | 3 | 10 | 31 |
| Whiting | 27 | 28 | 25 | 0 | 0 | 80 |
| Hake | 21 | 23 | 29 | 59 | 121 | 253 |
| Pollack | 1 | 1 | 0 | 2 | 29 | 33 |
| Ling | 0 | 1 | 2 | 5 | 0 | 8 |
| Monks | 0 | 2 | 6 | 3 | 6 | 17 |
| Waf | 0 | 0 | 4 | 5 | 9 | 18 |
| Mackerel | 400 | 0 | 1 | 290 | 768 | 1459 |
| Pilchard | 84 | 0 | 0 | 0 | 0 | 84 |
| | 557 | 87 | 117 | 429 | 1066 | 2256 |

Station logs, catch and length data were keyed into a computer system using Groundfish Survey Database programs, & preliminary summary outputs were produced.

Horse Mackerel and mackerel combined accounted for 90.6% by weight of the total cruise catch (horse mackerel 21.1 tonnes and mackerel 15.9 tonnes) with maximum individual catches in the range 4-5 tonnes. Of the remaining species boarfish accounted for 3.4% (1.4 tonnes) with saithe, hake, sprat, blue whiting, megrim, pollack, poor cod, whiting and spurdogs accounting for only 4.5% (1.84 tonnes) between them.

Mackerel were intensively biolgically sampled with, in addition to routine stock assessement material, the collection of ovaries for fecundity studies (M Greer-Walker and S Coello University of North Wales, Bangor), blood samples (P Witthames), stomach content analysis, with some preserved in formalin, also livers in formalin (S Coello).

It was evident that compared with the December 1987 survey there was now a large influx of maturing mackerel (mainly 32-35cm length range) building up in their spawning area along the shelf edge. 1-group mackerel (1987 year class), mainly 18-21cm in length, were also strongly in evidence in the deeper water zone near the shelf edge.

The larger horse mackerel showed a broadly similar distribution pattern to that of the larger mackerel.

1-group hake were generally thinly scattered over the relatively shallow water stations, whilst larger hake were more in evidence towards the deeper water.

Hake eyeballs and otoliths were collected for age studies.

AIM 3 : Time did not permit searching for and directed fishing on pelagic shoals. However, in the areas where horse mackerel were taken in abundance a clearly defined echo-layer was generally in evidence close to the sea bed on the colour sounder display. In some areas this continued over several miles, particularly around the 200 metre depth contour when running along the shelf edge.

MISCELLANEOUS:

1. Specimen fish samples were deep frozen for use in fish identification courses (P Johnson and G Howlett).

2. Long rough dab samples were preserved for an overseas research student (D Harding).

3. Boxes of sprat and small gadoids were deep frozen for use in laboratory fish feeding experiments (P Bromley).

GEAR DAMAGE:

The following gear was lost or damaged during the cruise:-

1 x 20' rubber bobbins
1 x 25 bridle
1 PHHT iron bobbin
1 x 48' chain
1 x 20' ground rope
1 PHHT net with serious irreparable damage (excluding lengthening piece and cod end)

P O Johnson (SIC)
21 April 1988

SEEN IN DRAFT M J Willcock Master
R Graham Fishing Skipper

INITIALLED D J G

DISTRIBUTION
Basic List+
Staff on cruise

# CIROLANA 3/88 VALID PHHT HAULS

SHOWING :
STATION POSITION
STATION NUMBER
COASTLINE