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

1972 RESEARCH VESSEL PROGRAMME

REPORT: R V CLIONE: CRUISE 16

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

STAFF: F R Harden Jones
A R Margetts
A Jones
B K Clarke
B F Riches
G G Urquhart (Aberdeen)

DURATION:

Left Lowestoft 0900 h 5 December
Arrived Lowestoft 0800 h 20 December
All times are Greenwich mean time

LOCALITY: Southern North Sea

AIM: To determine the efficiency of CORELLA's Granton trawl for catching plaice fitted with acoustic transponding tags by extending the series of experiments carried out on CLIONE 9, 13/71; 13, 14, and 15/72.

NARRATIVE:

The plans for the cruise were modified as CORELLA's first objective was to try to recover JONSIS buoys B and C (SW Dogger and Clay Deep) and no joint work would be possible until the buoy work was carried out. CLIONE left Lowestoft at 0917 h 5 December and as the weather was very bad, steamed to Harwich rather than IJmuiden. CLIONE arrived at Harwich at 1900 h and as no berth was available sheltered at Parkeston Quay anchorage. There was no improvement in the weather during the next day but a berth was available at 2130 h. The sonar dome was fitted during the night 6/7 December, CLIONE returning to the anchorage at 0730 7 December. The weather moderated during the morning and CLIONE left the anchorage at 1434 h and steamed to the Shipwash-Gabbard area. Here a plaice, fitted with an acoustic tag and a magnet, was released at 1842 h and tracked until 2100 h 8 December. A second plaice was released off Southwold at 0942 h 9 December and tracked until 0640 h 10 December. CORELLA had now completed her work with the hydrographic buoys and both ships met in the Smiths Knoll area to start the acoustic tag/gear work. A plaice was released at 1130 h, but a fault in the azimuth training system of the sector scanner developed at 1400 h as CORELLA was making the first attack on this fish. A preliminary inspection confirmed that the transducer could not be steered in azimuth and it was clear that a proper assessment of the position could not be made at sea. So while CORELLA went to catch live plaice for laboratory work, CLIONE steamed to IJmuiden and entered harbour at 0645 h 11 December. The sonar dome was removed and CLIONE left the deep water berth to tie up alongside the cement quay at 0940 h.

From 11-13 December Mr Clarke, assisted by Mr Riches and the ships' engineers, carried out the repairs to the azimuth training system. Systematic investigation located the trouble in the hydraulic motor which was found to have a fractured piston shaft. Replacement of the motor involved extensive and difficult work in stripping, both of hydraulic and waterproof connections, and some machining on a lathe. Satisfactory deck trials were carried out late in the afternoon of 12 December, and a sea trial beyond IJmuiden breakwater was carried out the next day. During the period CLIONE was in IJmuiden gale force winds persisted over

the greater part of the North Sea and this major breakdown only lost us half a working day. Conditions moderated during the night of 13/14 December. The sonar dome was fitted and CLIONE left IJmuiden at 1140 h 14 December. The weather, although improved, was still unsettled, and the ship steamed to the Smith's Knoll area to resume work with CORELLA the following day. During the morning of 14 December a Lightning aircraft ditched at a reported position a few miles northwest of the working area. CLIONE searched for the wreck from 2200 h until 0115 h 15 December without success. After steaming to the working area, a plaice was released at 0530 h and work with CORELLA continued until 1600 h. The weather now appeared to be more settled and it was decided to steam to the more suitable grounds off Texel. But at 1700 h CLIONE received a second reported position of the Lightning aircraft and changed course towards the south end of the Well Bank. A second survey was carried out between rigs 27C and 27D from 2000-2320 h. CLIONE then set off for the Texel grounds where work with CORELLA continued from 0800 h 16 December until 1115 h 19 December. The weather was good for the last four working days. CLIONE left the working area at 1135 h 19 December and steamed to IJmuiden where the sonar dome was removed. CLIONE left IJmuiden at 1940 h and returned to Lowestoft to tie up at 0800 h 20 December.

Results

1 Efficiency of the Granton trawl: Eleven plaice were released for this study. We were unable to attack 3 of these fish. Twenty five attacks were made on the remaining 8 fish, five of which were caught. The present cruise is the sixth on this project and the results to date may be summarised as follows. There have been 173 attacks, and in 90 of these the fish lay between the doors. Of these 90 attacks, 38 resulted in the capture of a plaice. In 50 attacks when the fish was between the doors and the wing ends, 13 plaice were caught; in 40 attacks when the fish was in the path of net, 25 plaice were caught. The results may be tabulated as follows.

Position of fish	Number of attacks	Successful attacks	Efficiency
Between doors	90	38	42%
Between doors and wind ends	50	13	26%
In path of net	40	25	63%

In interpreting these results it must be remembered that the trawl was not fitted with a door-to-door tickler, and this chain is thought to increase the efficiency of the gear by about 40-60%

2 Other activities

a Tracking plaice: Two plaice were tracked (for 26 h and 21 h) during the period when CORELLA was recovering the hydrographic buoys. Both fish were fitted with small disc magnets. One fish, released in the Shipwash-Gabbard area, moved south; the other fish, released near Southwold, moved north. In both fish the pattern of movement in relation to the tidal streams appeared to be similar to that previously shown by fish not carrying magnets.

b Detection of seine net ropes: In order to assess the prospects of viewing a Danish seine in action, two standard types of seine rope - manila and polythene - were streamed from CORELLA and examined with the sector scanner. Neither of the ropes could be detected in midwater at ranges greater than 80 m.

c Lightning aircraft: No wreckage was detected within the immediate area of the first reported position (53°02'00"N, 02°30'01"E). The second reported position was given as lying between 110° Mag and 100° Mag 1.5 nm to 2.5 nm from rig 27C. Small unidentified targets were detected within this areaat bearings 284°T and 286°T, 1.32 nm from rig 27D. A more substantial target (about 2-3 m high) was detected at a position bearing 95°T 1.5 to 1.6 n miles from rig 27C. The co-ordinates of this target were 53°01'25"N, 02°18'00"E. This target appeared to be near a gas pipe. A study of a detailed chart of the area should help in its identification.

Reliability of equipment

Apart from the azimuth steering mechanism, there were no other failures. All the acoustic tags worked well. The sonar dome (new this cruise) was in good condition on removal in IJmuiden and has now been used for 443 miles.

SEEIN IN DRAFT: J E B (Master)
A H B (Fishing skipper)

A J L

F R Harden Jones
29 December 1972

DISTRIBUTION:

Basic List
Dr Harden Jones
Mr Margetts
Dr A Jones
Mr B K Clarke
Mr Riches
Mr Urquhart (Aberdeen)