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RV CORELLA

Report for Cruise 12/1969

Part (a)

Staff:

Duration: 1600 hours 8 July-  
0830 hours 14 July.

- J. Bridger
- B Mumford
- B Riches
- D Jenkins (Visitor)

Aims

1. To measure the effect of various rigs of tickler chains on the otter board spread and wing-end spread of a C3 trawl and also of a Granton trawl over a range of speeds.
2. To obtain samples of dabs for Mr C Lee.
3. To note the occurrence of dead or moribund fish and to bring samples to the laboratory for further examination.

Narrative

CORELLA left Lowestoft at 1615 hours 8 July and steamed to the middle shoal of the Silver Pit. Having fixed the otter board spread and wing-end spread transducers to the C3 trawl, the gear, without ticklers, was shot for the first time at 1140 hours 9 July. A further 3 hauls were made that day, one without ticklers and 2 with a door tickler. On 10 July 2 further hauls were made, one with a door and dan lono ticklers and the other with door, dan lono and mid-wing ticklers. This completed the work on the C3 trawl and so it was taken off and the Granton trawl on 7 fm bridles and 9 ft legs put on.

One haul was made with this gear that night but no useful measurements were obtained due to water getting into the underwater switching gear. Having dried the equipment out overnight a further haul was made early on 11 July with the same result. Again the equipment was dried out, resealed and shot away again. A rather weak wing echo was received but nothing from the door transducer and on hauling it was found that the equipment had once again flooded.

While the switching gear was being dried out a simple Y junction box with one arm blanked off was used to try to obtain a good wing echo but this faded within minutes of shooting due to water entering the box.

On 12 July yet another junction box wrapped with rubber tape was used but again this leaked after a few minutes. Next the original Y box, now dried out, was used again, and again failed. Hand-made rubber gaskets were then fitted as well as a thick coating of rubber tape but this too failed. Meanwhile the switching gear had been dismantled, baked dry and then araldite was poured around all the suspect joints and baked hard overnight.

On 13 July, having checked all cables and joints, the cables and switching box were refitted to the trawl having first wrapped all joints in rubber tape. On shooting it again filled with water within a few minutes. The box was again dried out, one suspect cable replaced and the gear shot away for the ninth time.

A door echo was obtained for some 20 minutes and then faded. On hauling the switching gear was again found to be full of water.

Since all the underwater junction and switching boxes had now failed, 3 of the 6 transducer cables rendered unserviceable due to damage, and virtually the whole stock of rubber tape exhausted, the cruise was then terminated and the ship docked at Lowestoft at 0830 hours 14 July.

## Results

### Aim 1

1. Despite the repeated electrical faults outlined above some results were obtained. Even on fairly muddy ground the tickler chains did not drastically reduce either the board spread or the wing-end spread of the C3 trawl. This confirms earlier results on fine sand and catchy ground.

2. The Granton trawl proved very little more difficult to tow than the C3 despite a somewhat greater board and wing-end spread. Warp load records, of which there are many, speeds over the ground and through the water and the few partially successful spread measurements will need to be analyzed before definite values can be given.

3. The catch rate of the Granton seemed to be above that of the C3, viz

C3: 5 hauls,  $19\frac{1}{2}$  baskets in  $9\frac{1}{4}$  hours = 2.15 per hour

Granton: 9 hauls,  $36\frac{3}{4}$  baskets in  $11\frac{1}{3}$  hours = 3.0 per hour

All 14 hauls were made on the same ground using the Decca track plotter. The bulk of the catches consisted of haddock, whiting and cod but adequate quantities of plaice, dabs, Nephrops and benthos were taken with the Granton. If anything the proportion of flatfish in the catch was higher with the Granton than with the C3.

4. The extra 14 ft of groundrope on the Granton trawl necessitates an extra heave with the auxiliary wires, and the longer belly and batings a heave with the gilson but otherwise the Granton trawl presents no handling problems.

### Aim 2

All the dabs from 3 hauls were deep frozen for Mr C Lee.

### Aim 3

No dead or moribund fish were taken in the 14 hauls, close to the gas bubble in the Silver Pit.

J P Bridger

### Part (b)

#### Staff:

Duration: 16-22 July

A R Margetts  
B Mumford  
B Riches  
D J Leahy ) Birmingham  
G C Goddard) University

### Aims

1. To measure the working shape of both the 800 mesh and 1200 mesh Engel trawls.

2. If suitable shoals are available, to practice aimed fishing.
3. To enable Birmingham University staff to carry out experiments with acoustic apparatus.

Narrative

CORELLA left Lowestoft 1100 hours 16 July and started the pelagic trawl measuring programme off the River Tyne on the morning of 17 June. Two days were spent in the Tyne-Farne Deeps area using the 800 mesh trawl towed on various lengths of warp over a range of speeds from 2.0 to 4.0 knots. Net gape, spread and depth, otter board spread, and warp loading were measured. Advantage was taken of the lull of St Abbs during bad weather on the night of 18 July and morning of 19 July to change trawls. The 1200 mesh trawl net on small otter boards was used for a comparable series of tows at Farne Deeps on 20 and 21 July. Throughout the acoustic multi-transducer apparatus performed very satisfactorily. Complete series of measurements were obtained for both trawls.

The Birmingham University programme of underwater acoustic experiments (acoustic telometer) was completed, the trials being made either simultaneously or alternately with our measurements.

Substantial midwater echo traces were seen off Longstone on 19 July but in a very brief attempt at aimed fishing there on the morning of 21 July, suitable shoals were not again encountered. Sprats were fairly abundant in surface waters. During the measurement tows, sprats, mackerel, gurnards, whiting, haddock and spurdogs had been caught.

CORELLA berthed at Lowestoft, 1400 hours, 22 July.

A R Margetts  
24 July 1969

Seen in draft: W Craig, C Snowling

Initialled: D H C

Distribution: Basic list, plus the following:-

J P Bridger  
B Mumford  
B Riches  
A R Margetts  
D J Leahy     } Birmingham  
G C Goddard   } University