

Provisional: Not to be quoted without reference to the writer

R.V. CORELLA

Report for Cruise 5/1967

Staff:

- R. B. Mitson
- G. P. Fox
- C. R. Hood
- B. K. Clarke
- G. C. Goddard (Birmingham University)
- J. G. Cattley (Part-time)

Duration:

7-14 September 1967

Aims:

1. To carry out tests of the Acoustic Arch System with ground and mid-water trawls in the Whitby or Silver Pit areas.
2. To carry out tests of Birmingham University equipment for telemetry.
3. Trawl winches: To test Lebus spooling gear and brakes under trawling conditions.

CORELLA sailed at 1130 hrs on the 7th. The ground trawl was shot at 1900 hrs near Smiths Knoll after several attempts when the starboard door had twisted. Five fathom bridles were fitted which cured this difficulty. Weather conditions were perfect and during the night the ship proceeded northwards to the Outer Silver Pit. The trawl was shot at 0700 hrs with no instruments attached. Two herring, two baskets of mixed fish and a basket of Nephrops were caught. Whilst the Acoustic Arch system was being rigged on the headline, a vertical lowering of the Birmingham University equipment was successfully carried out.

During the next haul, good seabed signals were obtained from two of the Arch units with some indication of fish echoes. The other units gave variable signals and appeared to be out of alignment. A number of hauls were made with the equipment during the day and evening. One or two mixed baskets of fish were caught on each haul with varying numbers of Nephrops.

Early on the 9th the gear was shot with an Acoustic Link fitted to the headline. The receiving transducer was tried in various positions around the ship but no signals were received. On hauling it was found that the case had been damaged, evidently during shooting, as water at considerable pressure was released when the case was opened.

Further hauls were made with the Arch System when different positions of the units were tried with little improvement in the variability of signal. Noise levels became rather high as the trawl gear settled on the bottom and went down again when hauling commenced.

A further vertical lowering of the Birmingham University transmitter was carried out to a depth of 40 metres so that the received signals could be photographed.

The last two trawl hauls on the 9th showed good signals from the trawl footrope when nearing the seabed. During the night and morning of the 10th changeover was made to the 4 panel midwater trawl in Bridlington Bay. After this a search was made for midwater traces and a practice haul made at dusk. Because of the large numbers of jellyfish near the surface the trawl was hauled after a short time.

Fish traces had been located in the early hours of the 11th in Skate Hole but some difficulties were experienced with the Acoustic Arch units when they were switched on ready for shooting later in the morning. During shooting damage to the cable of one unit occurred and this unit was removed from the headline. The trawl skimmed the sea bed and was hauled after $\frac{3}{4}$ hour. Sixteen baskets of herring and two baskets of sprats were caught. Whilst these fish were being cleared, the small boat was lowered and took the Birmingham University transmitter some distance away from the ship to enable some horizontal propagation measurements to be made.

A further trawl haul was made on the 11th September. Fish were seen entering the net by the echoes from the Acoustic Arch units. Six baskets of sprats and one each of herring and mackerel were caught.

On the 12th the trawl was shot early and towed for $2\frac{1}{2}$ hours. In all 36 shoals were seen on the paper record of the Acoustic Arch system. On hauling, large numbers of sprats were seen swimming through the meshes. Five baskets remained in the cod end. A sample of sprats was preserved for Dr. Johnson. Further propagation tests with Birmingham University equipment were carried out using the small boat. A hydrophone was lowered from the boat and the transmitter hung over the side of CORELLA. Signals ceased after the transmitter case leaked.

When the trawl was shot again on the evening of the 12th the cod end was left open because of the number of large fish shoals in the area. These were counted as they passed under the headline. Many live sprats were in the meshes on hauling.

Tests were carried out on the underwater television and divers lights at a depth of 50 metres and also in the surface. Full power was used for a 45 minute period and no sign of leaks detected.

An echo survey grid was arranged and continued until midday on the 13th when course was set for Gorleston to pick up Mr. Cattley. On the way noise measurements were made with a hydrophone streamed alongside the ship. Mr. Cattley was on board by 1945 hrs. Tests were carried out on the cable winch only as it was considered that no further experience could be gained with the trawl winch in view of the still excellent weather conditions.

Tests carried out on the trawl winch showed that under the perfect weather conditions which existed for the whole of the cruise, spooling of the warps was satisfactory. This was with the hand reeving gear in position but not attended, and with marks woven into the warps to indicate length. The brakes held at all times although pressure varied.

Trials of the cable winch showed that the bypass valve operated satisfactorily to limit torque. Inertia of the drum is so great that only very strong cables can be used so that the torque limiting feature is largely invalidated.

A separate report gives greater detail of the winches and electrical system.

CORELLA docked at 0715 hrs on 14th September.

R. B. Mitson

27.9.67.

Seen in draft:

W. Craig
C. Snowling
A. J. Lee

Distribution:

Dr. Cole
Mr. Lee
Captain Aldiss
Dr. Cushing
Mr. Burd
Mr. Hill
Mr. Garrod
Mr. Bolster
Mr. Cattley
Mr. Corlett
Dr. Harden Jones
Mr. Margetts
Mr. Trout
Mr. Iles
Mr. Holden
Dr. Jamieson
Dr. Purdom
Mr. Bridger
Mr. Mitson
Mr. Tungate
Mr. Williams
Mr. Wood
Mr. Adams
Mr. Mills
Mr. Kay
General Lab.
Lab. Registry
Library (2)
Mr. Whiting
Mr. Simpson
Dr. Reynolds
Chief Inspector
All District Inspectors
Fisheries Registry
Captain Craig
Mr. Revell
Skipper Snowling
British Trawlers' Fed. Ltd.
Mr. Buchanan Wollaston
Mr. Baird, D.A.F.S.
Director, Dublin
Mr. Glover
Hydrographic Department
Dr. Lucas
Director, N.I.O.
Dr. Peachey
Mr. Shelbourne
White Fish Authority
Director, IJmuiden

Mr. Fox
Mr. Hood
Mr. Clarke
Mr. Goddard