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CRUISE REPORT

F.R.S. "M A R A"

13th November-17th December, 1958.

Gear Testing with Instruments

The first day was spent making some exploratory tests on a method of measuring the distance between otterboards by means of mounting echosounder transducers on them and leading the cable back to the ship. The method was only a stop gap one, but worth a day's trial. On the second day an attempt was made to echosound over the top of the Wing trawl using the motor coble as the auxiliary and to measure the distance between the wing tips of the net, to which buoys were attached on long lines, by timing the coble's run between them at its logged speed. This attempt failed to give any dependable results, the main difficulty being that "Mara" can tow nearly as fast as the coble can go, so that the coble's manoeuvres with respect to the net were far too slow.

The following week measurements of the drag spread and speed of the otter trawl were started in Aberdeen Bay. On the 19th the weather became too bad for instrument work in the bay and a shift was made to the Moray Firth where there was some shelter. Here the measurements were continued and finished on the 20th after working for a 14 hour stretch. This was done to enable Mr. Mowat to return to the laboratory early on the 21st to make final adjustments to the instruments he was transferring from "Mara" to "Explorer". Records have now been obtained over a range of engine settings, giving the drag spread and speed of her ordinary otter trawl as well as the large and small wing trawls. Measurements were fully instrumented on a recording basis.

Navigational Instruments

Because the weather was bad passage to the North Minch was made through the Caledonian Canal, Stornoway being reached on the morning of the 27th with the weather set fair again. That day was spent searching for an isolated rock in the middle of the Minch. The trace of this rock had appeared on the old "Explorer's" echosounder five years ago, rising like a sugar loaf from the surrounding seabed. The fix was only approximate based on course and steaming time. The search was now made using Decca Navigator and track plotter. No more than two minutes after we had given up the search and were returning to Stornoway the trace of the rock appeared on both sounders and an accurate fix was obtained. This will be most useful in any future experiments on precision fishing.

Comparative Fishing

On the 28th fishing was started with the large and small Wing trawls along the 30 fm. line from Tolsta Head northwards. There were plenty herring in the Minch and here we had hoped to get them. Less than a dozen herring were caught but there were good whitefish on these grounds mostly big fish, cod, haddock and whiting. A fair catch was made. Unfortunately, the ground was too rough for the light gear and it was apparent that we might not be able to carry on for a week although the mending required after one day was not really serious.

The foreign herring trawlers which had been working the previous week had departed. The few Dutch herring trawlers remaining were klondyking out of Stornoway.

For the whole of the week ending 6th December the large and small Wing Trawls with larger and smaller otterboards were fished against each other at the same engine power. The location was now the 70 fathom stretch  $4\frac{1}{2}$  miles S. by W. of Tiumpan Head. Fishing here was neither good nor thoroughly bad but fairly steady. The fish were mostly big and the species varied. These nets have now been fished against each other in three areas, Fladen Ground, Farnes Deeps and now North Minch. At the moment it is sufficient to say that, with the possible exception of herring catching, the smaller and faster gear was not outfished.

On the 8th December a comparison between otter trawls with different mesh sizes in their forward parts was started. The codends had cowlene covers attached but the size of the fish of commercial species was on the whole so big that little information on codend selection was forthcoming. The two nets compared were identical except that one had  $5\frac{1}{2}$ " mesh in wings and square while the other had these parts in 11" mesh of double the twine diameter. This doubling of the twine diameter was done in order to keep the fishing shape of the two nets much the same. It was soon apparent that the otter trawls were making a different selection of the fish population from the light wing trawls which had been deliberately kept rather "floaty". The difference in catching rate between the two otter trawls was less marked than might have been supposed except for small fish such as G. esmarkie. It was therefore decided to seek grounds with a white fish population of smaller average size, the intention being to return to the East Coast. Before leaving, however, it was felt desirable to have a few hauls in Broad Bay with its rather different fish stock particularly its plaice stock. On the first haul in Broad Bay the net was split requiring an afternoon's mending; at the same time the weather broke.

The vessel was weather bound in Stornoway for two days until 13th December when passage was again set for the canal since weather on the N. and E. coasts continued to be severe. At this juncture one of the propeller blades struck something becoming slightly bent at the tip with a consequent reduction in speed of  $1\frac{1}{2}$  knots. This effectively was the end of the trip. On reaching Inverness on the 17th the vessel was put on the slip to have the blade straightened.

W. DICKSON  
16th January, 1959.