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IN CONFIDENCE: NOT TO BE QUOTED WITHOUT REFERENCE TO THE LABORATORY

CRUISE REPORT

FRV "MARA"

25 March - 19 April 1974

OBJECTIVES:

1. To test the modified White Sea Trawl by instrumentation and direct observation by divers.
2. To measure the main net parameters of a three-bridle trawl with varying wire rigs.
3. To observe and instrument a Nephrops trawl.

NARRATIVE:

The "Mara" operated from Buckie for the duration of the cruise working the Lossiemouth/SpeyBay area in 10 fathoms of water.

Only one day was lost due to adverse weather conditions and in all 31 trawl hauls were completed with the various gears used.

It was unfortunate that the cruise followed on a period of strong easterly gales which left a sedimentation in the water column restricting the usefulness of photography.

The instruments in the main functioned satisfactorily and apart from a fault which occurred in the Elliot load cell during the cruise and discrepancies which are apparent between the readings obtained by the Japanese and British speed logs, a useful set of results have been obtained.

RESULTS:

The modifications which were incorporated in the White Sea Trawl following the previous trial have considerably improved the shape of the net by relieving the areas of stress in the upper panel. Although the headline height, is satisfactory at around 12' - 14', the lateral spread continues to be below desirable levels. Mesh measurements taken across the square show these to have an average opening of 15% (approximately by half) which should adequately allow wing-end spreads of 35' - 40'. There are no obvious indications at present of why there should be a discrepancy from the designed spread of the net.

The White Sea Trawl was also fished in semi-pelagic mode using the Briedfjord wire rig. From a gear handling point of view this system proved easy to operate and completely eliminated the problem of the spreading wires becoming twisted up. The effect on the net geometry, of varying the distance in front of the trawl board of the top bridle take off point was studied. With the semi-pelagic rig headline height of up to 20' and groundrope wing-end spreads of 38' were recorded.

Work with the three bridle trawl was abandoned when on the second haul the net was damaged beyond repair.

The 16 fathom prawn trawl was instrumented and observed by the diving team. From a preliminary analysis of the results average readings of the following parameters were obtained at a towing speed of $2\frac{1}{2}$ knots. Total tension at ship 0.6 tons. Wing-end height 1'; headline height 3.5'; spread across the wing-ends 45'.

Analyses of the combined results from both cruises are now well in hand and a comprehensive report will be produced.

A CORRIGALL

5 June 1974