

R1/6

Not to be cited without prior reference to the Marine Laboratory, Aberdeen

FRV *Clupea*

Cruise 1695C

REPORT

17-20 October 1995

Ports

Loading: Aberdeen

Unloading: Aberdeen

Personnel

A Macdonald	HPTO (in charge)	17-18 October
G Urquhart	PSO (in charge)	19-20 October
J Morrison	PSO	19 October
R Denholm	VMO	17-20 October
M Burns	ASO	19-20 October
M Thom	Sen Craft	17 October
W Leiper	PTO	18 October
C Stewart	Ind Tech	19 October

Fishing Gear

BT 116 *Clupea* wing trawl
 Three metre heavy beam trawl
 Dual-Methot frame trawl
 1.9 metre Methot frame trawl

Objectives

1. Compare the catching performance of a conventional bottom trawl with a commercial beam trawl for common dab.
2. To carry out a variety of engineering trials with the 1.9 m and Dual-Methot samplers.

Out-turn days per project: BGF1:1, IBD1:1, GCI1:2

Narrative

The ship operated from Aberdeen on a day-cruise basis. On 17 and 18 October fishing gear trials were carried out. Three hauls were carried out with BT 116 rigged with rockhoppers on known dab grounds and this was repeated with the beam trawl.

On 19 October tests were conducted on the dual-Methot sampler using instrumentation to measure engineering performance data required for a redesign of the system. Tests were conducted with the frame only (ie no nets), with two nets each half open, and in the normal configuration with one net fully open and one closed. The 1.9 m Methot sampler was also tested with instrumentation to measure its drag and the forces in the towing warp.

The directional properties of the CEDRIC (cod-end diameter recording instrument) transducers were investigated on 20 October by conducting hauls with the instruments in varying orientations. The performance with varying speed was also tested.

Two MINILOG temperature and depth recorders were attached to creels and deployed to test the feasibility of measuring the sinking rate.

Results

It appeared from the limited numbers of fish caught and the limited number of hauls possible that the beam trawl was considerably more efficient. It caught more dabs and significantly more plaice.

The total drag of the Dual-Methot sampler at 4 kt was found to be 860 kgf of which about 200 kgf was due to the frame and its accessories. There was little difference in the total drag between the two net configurations tested. A fuller analysis of the results will provide data for future design work.

At the same speed (4 kt) the total drag of the 1.9 m Methot sampler was found to be 1,125 kgf and during oblique tows at this nominal speed, the maximum wire tension was found to exceed 2,100 kgf. This exceeds the stern gantry's vertical lift rating of 1.5 tonnes SWL and the maximum permissible loading under towing loads needs to be investigated.

The performance of CEDRIC was not significantly affected by varying the relative orientation of the master and slave transducers through 90 degrees at about 2 m separation and there was no noticeable affect on varying the speed between about three and five knots.

The creels containing the MINILOGS fouled an obstruction on the sea-bed on first deployment and were not recovered.

Don Urquhart
11 April 1996