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Industrial Development Unit

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TRIALS WITH PELAGIC PAIR TRAWL TOWED BY ROSE OF SHARON/KILRAVOCK FROM NEWLYN USING I.D.U. NETSOUNDER/HAND WINCH

1. OBJECTIVE

The objective of this trial was to obtain measurements of the vertical mouth opening and the depth of water under the headline with various warp lengths and speeds. It was also useful in assessing the suitability of the I.D.U. netsounder and hand winch for future gear trials with inshore vessels.

2. VESSELS AND GEAR

The trials were carried out aboard the 20m pair trawlers ROSE OF SHARON and KILRAVOCK with shaft house powers of 320 hp and 200 hp respectively towing an APELDORNE 19 x 19m pair trawl. Full details of ROSE OF SHARON are given in Appendix I and the mid-water pair trawl in Appendix II.

3. METHOD OF HANDLING THE GEAR

The trawl was handled in the conventional manner over the stern as on the Scottish midwater pair trawlers.

4. NARRATIVE

1. Background

There is a need to have information relating to the performance of different types of gear with various types and sizes of vessel. This trial was therefore a preliminary to evaluate the suitability of our netsounder/hand winch for this work and also to obtain information useful to both ourselves and the vessel's skipper, regarding the performance of a pair trawl.

2. Trials

The first part of the trial took place during the latter half of February, however after a certain number of readings had been obtained it was discovered that extensive net damage had occured and the rest of the trial had to be postponed until a later date.

The next convenient date to complete the trial was March 15th. It was decided to go out and complete the trials in the early afternoon before the boats proceeded on with their normal nights fishing (the Cornish Pilchard Fishery being a night only fishery).

A suitable area about five miles outside Falmouth harbour where there was fairly level ground with depths of between 34-39 fathoms, was chosen. The weather throughout was variable force 1 + 2, with a low swell running.

Measurements were taken at the following warp lengths 50, 70, 90, 120, 140 and 160 fathoms, at each warp length the engine was set at the following revs 700, 750, 780, 850 and 900. The readings taken were of the trawl mouth opening, depth of water, depth of water under headline and ships speed. For details of the results see Table 1.

The gear was shot without difficulty with the transducer attached to the headline. The parafil rope and the wooden bobbin ensured that there was no weight taken by the cable or the transducer.

3. Trials Results

The results obtained indicate clearly the alterations in trawl mouth opening and the position of the trawl in the water at different speeds and warp lengths. The readings obtained are fairly consistant with what we should expect with this gear. However this exercise was very useful to the skipper in that he had a much more accurate idea of the position of his trawl in the water and its relationship to the fish echoes that he detects on his echo sounder.

5. COMMENTS

This trial indicated that the portable hand winch/netsounder was an extremely useful piece of equipment for a limited trial of this type. The main problem in using it, is obtaining a good lead for the cable so that it does not foul the warps or any other part of the gear. The main criticism is that the drum cannot contain sufficient length of cable for anything but a very limited trial.

6. FURTHER WORK

There is no definite further work of this type planned but it is intended to take measurements of different gears around the coast, on inshore vessels.

Circulation:

R.B., N.M.K., P.J.H., E.A., H.McD., M.H., [illegible], J.T., Library, File.

TABLE 1

Warp Length	Depth	Water Under Headline	Mouth Opening	Speed	R.P.M.	Remarks
FATHOMS	FATHOMS	FATHOMS	FATHOMS	KNOTS		
50	34.5	33.0	6	3.75	900	
"	34.0	32.5	6.5	4.5	910	
"	34.0	32.0	6.75	4.0	850	
"	34.0	32.0	7.5	3.5	780	
"	34.0	31.5	8.0	3.0	750	
"	34.0	31.5	8.5	3.0	700	
70	34.0	28.0	8.0	2.8	700	
"	34.0	29.0	7.0	3.0	750	
"	34.0	31.0	7.0	3.2	780	
"	34.0	32.0	6.75	3.5	850	
"	34.0	32.0	6.0	3.8	910	
	Trials postponed at this piunt owing to net damage.					
90	33.5	23.0	8.75	2.9	700	Course
"	34.0	25.0	8.0	3.3	750	E.S.E.
"	34.0	27.0	7.5	3.6	780	Tide Slack
"	34.0	27.5	7.0	4.0	850	
"	34.0	28.5	6.25	4.2	900	
	Cable parted between bobbin and transducer, gear hauled and cable spliced.					
120	36.0	22.0	7.5	3.0	700	
"	36.0	23.0	7.0	3.2	750	
"	36.0	26.0	6.8	3.2	780	
"	36.0	29.0	5.5	3.3	850	
"	36.0	30.0	6.2	3.3	900	
140	37.0	23.0	8.0	2.5	700	
"	37.0	23.0	7.5	2.6	750	
"	37.0	23.0	7.0	2.8	780	
"	37.0	25.0	6.8	3.2	850	
"	38.5	27.0	6.0	3.4	900	
160	39.0	20.0	7.0	2.4	700	
"	38.0	22.0	7.0	2.5	750	
"	38.0	24.0	7.0	2.5	780	
"	38.0	27.0	6.0	3.4	850	

APPENDIX I.

DESCRIPTION OF VESSEL MACHINERY & EQUIPMENT

Vessel:	ROSE OF SHARON
Registration No:	F.R. 23.
Home Port:	Newlyn - Inshore side fisher with cruiser stern.
Owner:	E. Stevens, Velnoweth, Cathew Way, St. Ives, Cornwall. St. Ives 5876.
Skipper:	D. Stevens.
Builder:	J. & G. Forbes, Sandhaven 1969.
Dimensions:	L.O.A. 19.8m. L.B.P. 18.0m. Beam 6.1m. Moulded Depth 3.65m. Draft F 2.3m. A 2.9m.
Fishroom:	Capacity 70.75m^3. Depth 3.05m. Insulation Onazote 50mm.
Main Engine:	Kelvin T.S.8 delivering 345 bhp at 1000 rev/min. Propulsion power 320 shp Propellor - Brunton 4 bladed pitch 1.32m. Steering gear Tenfjord H.76.
Main Winch:	Maestra Seine/Trawl hydraulicly driven by Dowty Dowmatic pump. Winch Capacity 650 fm: 5/16" wire.
Electronic Equipment:	Decca Navigator Mk12 Decca Radar 212 Simrad Skipper Echo Sounder

APPENDIX II

DESCRIPTION OF GEAR
TWO BOAT MIDWATER TRAWL

Net:	Appledoorne 19 x 19 pair trawl overall length 44 fathoms.
Headrope:	19 fathoms $2\frac{1}{4}$" wire braided 7 x 5" sausage floats.
Groundrope:	$2\frac{1}{2}$" wire combination rope, no weights or bobbins attached.
Weights:	95 lb weight at each wing end. 350 lb weight on each bridle.
Bridles:	$2\frac{1}{2}$" wire combination rope. Upper bridle 172' long. Lower bridle 123' long.
Warps:	1 5/16" wire left handed lay.