DEPARTMENT OF AGRICULTURE [NI]
FISHERIES RESEARCH LABORATORY

CRUISE REPORT - LF/20/89

EQUIPMENT TRIALS 17-19 MAY 1989

PERSONNEL

R.P. Briggs PSO [SIC]
J.A.D. Peel TASO
E. Maclaine Scanmar Agent

OBJECTIVES

1. To test the new net drum which has recently been installed aboard RV Lough Foyle.

2. To carry out sea trials on Scanmar net monitoring system.

3. To test the new Bongo plankton net.

NARRATIVE

RV Lough Foyle departed from Belfast at 22.20 on Wednesday 17 May steaming south to 53.5°N 5.3°W (Figure 1), where 4 hauls of 2-3 hours duration were made using a new midwater net fitted with Scanmar net monitoring system. The ship proceeded north during the night of 18 May and 4 plankton tows using the new Bongo net were made off Donaghadee, commencing at 06.00 hrs . During these tows a range of warp lengths were used along with the Scanmar depth sensor in order to relate depth to warp length. Plankton samples were preserved and the ship returned to Belfast, docking at 12 noon on Friday 19 May.

RESULTS

Net Drum
The new net drum successfully hauled the midwater fishing gear at all stations trawled, despite severe twisting of the net on one occasion.

Scanmar system
Continuous data were obtained on the position shape and speed of the trawling gear together with details of water temperature from the sensors located on the net. Although tow 4 was aborted due to misalignment of the trawl doors mean Scanmar readings for tows 1-3 are given in table 1. Catches (Table 2), consisted mostly of gadoids, clupeoids (mainly sprat) and ghost shrimps (Pasiphaea sivado). It was noted that in tow 2 which had a net clearance of 30M

haddock were more predominent than cod, while in tow 3 over the same ground, where the bottom clearance of the net was reduced to 2m, cod were more abundant. This observation reflects the different distribution of these two species and is an example of how Scanmar can be used for species directed fishing, demonstrating how useful this equipment should be as a research tool.

Bongo net trials

The Bongo net was rigged from the starboard trawl warp and deployed over the stern of the vessel. Although the trawl warp was heavy for this task maximum lift was ensured by attaching a small buoy and restricting use of the "height fin" to the most distal holes . This gear, which was fitted with a 500µ net was towed at a constant speed of 4 knots as recommended by the manufacturers. Using the Scanmar depth sensor it was found that constant depths could be sustained for a range of warp lengths. Figure 2 illustrates a positive correlation between warp length and depth. Preliminary microscopic examination of catches from the 4 x 30 minute tows showed them to consist, in order of abundance:- copepods, decapod larvae, arrowworms (mainly Sagitta), ctenophores and fish larvae. Filtration rates were calculated from a small flow meter attached at the mouth of the net.

R.P. Briggs, SIC
19 May 1989

TABLE 1

Mean Scannar readings Tows 1-3

	Tow 1	Tow 2	Tow 3
Depth of headline	76m	108m	84.3m
Net drum	12m	11.6m	10.4m
Net Clearance	32m	30m	2m
Door Separation	55m	59m	56.6m
Temperature	8.5°C	8.8°C	8.6°C
Speed	4.5kn	4.1kn	4.1kn
Warp Length	200m	275m	250m

Table 2

Catches (kg) tows 1-4

	Tow 1	Tow 2	Tow 3	Tow 4
Cod	6.9	29.6	71.0	
Hake	-	1.7	-	
Whiting	-	76.5	3.7	.5
Haddock	1.4	48.5	-	
Saithe	-	5.1	13.0	
N. Pout	-	1.6	-	
Plaice	-	2.2	-	
Dabs	-	40.6	0.5	
Sole	-	-	0.5	
Spurdog	2.0	5.0	-	
Clupeoids	-	53.2	-	
Gurnards	1.0	-	-	
Ghost Shrimps and Clupeoid mixture	80.0	5.0	280.0	

ABORTED TOW

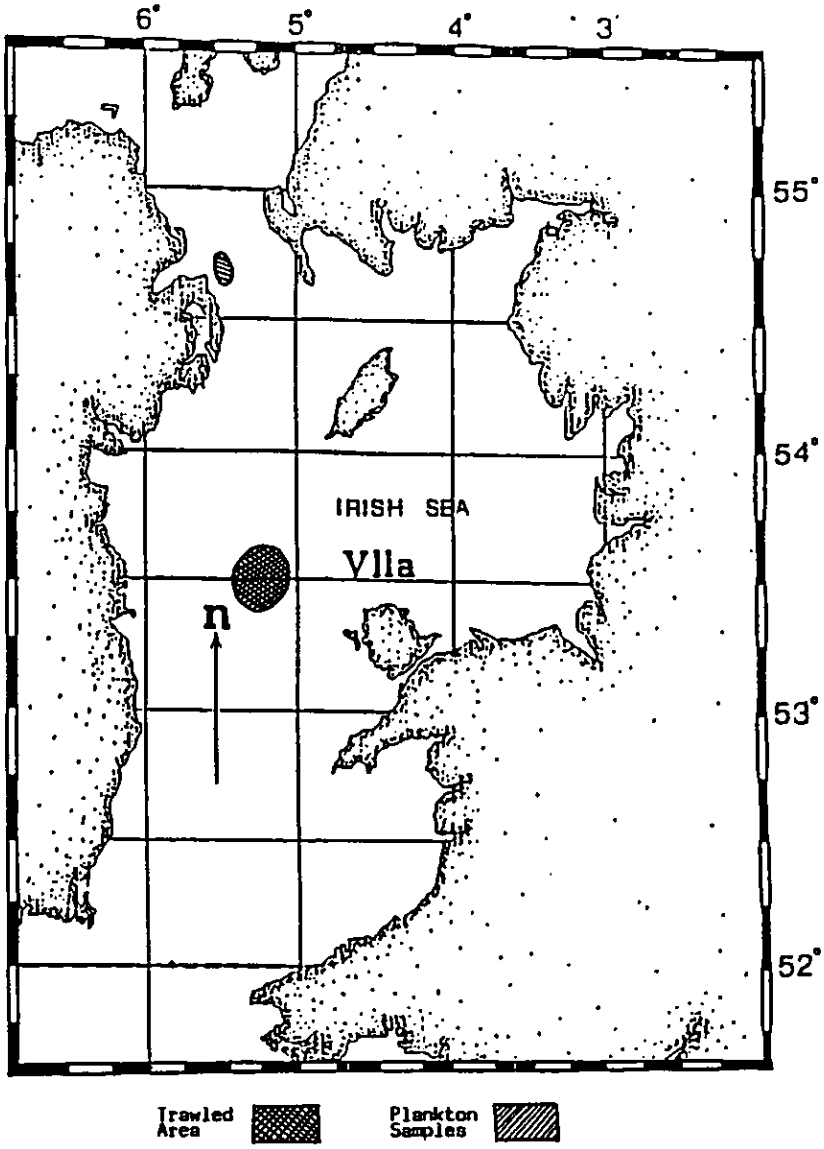

FIGURE 2

RELATIONSHIP BETWEEN WARP LENGTH AND DEPTH OF BONGO NET AT A CONSTANT TOWING SPEED OF 4 KNOTS