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MV *Boy John* INS 110

Charter Cruise 0499H

REPORT

25 February - 5 March 2000

Ports

Loading: Peterhead
Unloading: Peterhead

Personnel

N Graham (In charge)
S McKay
G I Sangster
R Kynoch

Fishing Gear

Vessels twin trawl prawn rig (70 mm) fitted with selection grids and two tier codends. Scanmar instrumentation.

Objectives

1. To determine species and size selectivity of a hinged rigid selection grid.
2. To assess the practical suitability of selection grids for use in the *Nephrops* fishery.

Out-turn costs per project: C627-10 days

Narrative

Staff joined the vessel in Peterhead on 25 February at 0930 hours. To achieve objective 1, a grid was to be fitted into a small mesh codend arrangement (40 mm) on one of the trawls, the other being fitted with large mesh codends (70 and 100 mm) and another identical grid. To ensure that both grids were operating at similar angles, Scanmar grid sensors were due to be fitted to both grids, but failure of a supplier to provide equipment forced postponement of these selectivity experiments. It was decided to bring forward the catch comparison trials which were scheduled for later in the year. The objective of the catch comparison exercise was to compare the commercial 70 mm codend with the double codend rig and grid.

The vessel sailed for the Fladens during the afternoon. The following days were severely hampered by bad weather (force 7-9) during which the vessel dodged. With a poor forecast, it was decided to move grounds and operate in the inner Moray Firth. The vessel dodged during 27 February and after one fishing tow on the morning of 28 February the vessel steamed to

Macduff for shelter. Fishing commenced on 1 March, but poor weather prevented any fishing between 3-5 March, when the cruise was terminated at Peterhead.

Results

The first two hauls were used to assess the grid angle. As the average reading for the first haul of ~20 degrees was deemed to be too shallow, the grid was re-rigged and the angle proved to be steeper for the second haul, although highly variable (~40-60 degrees). However, it became apparent on both these hauls that the lower hinged portion of the grid was not functioning correctly, greatly reducing the effectiveness of the grid. It was decided that for the duration of the trials the grid should be made rigid. For this purpose two steel bars were attached down either side of the grid. The first fishing haul with the reinforced grid showed that the grid was operating at only 35 degrees, therefore only overall weights of each species were recorded. However, the separation observed was poor in comparison to the results obtained on a previous *Clupea* cruise. Several hauls were considered void due to the grid face being blocked with general debris such as oil drums and discarded netting.

The presence of fish and prawns in the extension and at the face of the grid indicated that problems were occurring with the rigging arrangement. It is likely that, with the build up of the catch in the codends, the grid fitting was being distorted.

In order to assess this, a mini-TV camera was inserted in the net facing the grid. Two hours of video tape were taken, but the picture was obscured by sand and mud clouds. The video did provide two interesting observations. First, the top sheet of netting was seen gradually to lower, resulting in a greatly reduced area available for the passage of fish into the upper 100 mm codend. Second, large numbers of fish were seen swimming in front of the grid with little effort; the tail beat frequencies appeared to be low, even for the smaller individuals. This is probably due to very low water flow through the system, probably exacerbated by the reduced opening to the upper codend.

In order to overcome the problem with the upper sheet, a rigid frame was attached to the upper part of the grid to ensure that the upper codend remained open. Some of the previous hauls were invalidated due to the steel bars bending so two sections of aluminum angle iron were marlin hitched down either edge of the grid. Only one further valid haul was obtained as a range of debris and fouled gear prevented any data being obtained.

It is apparent that further development work is required to develop a grid system which can be wrapped onto net drums and travel through powerblocks.

N Graham
28 April 2000