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FRV *Clupea*

Cruise 2093C

REPORT

29 October-16 November 1993

Ports

Loading:	Fraserburgh
Unloading:	Fraserburgh
Half-landing:	Fraserburgh

Personnel

R D Galbraith	SSO (in charge 29 October-8 November)
J H B Robertson	HSO (in charge 8-16 November)
P J Barkel	PTO
N S Collie	PTO

Objectives

Part 1 To investigate the possibilities of whitefish size and species separation using an experimental rigid grid system with 40 mm and 45 mm bar spacings.

To obtain RCTV video recordings of both gear performance and fish reactions to the grid system.

To test a recently developed short range distance measuring device (CEDRIC) under operational conditions.

Part 2 To evaluate the effectiveness of a lower panel rigid grid in releasing juvenile *Nephrops* from a standard commercial prawn trawl.

To obtain RCTV video recordings of both gear performance and *Nephrops* reactions to grid system.

Out-turn Days Per Project

19 days IBD1

Narrative

Staff and equipment joined *Clupea* at Fraserburgh on 29 October when the RCTV system was installed and tested. Work commenced the following day in the Moray Firth area and continued until 3 November when bad weather halted the trials. Both J H B Robertson and N S Collie returned home for family matters. Work recommenced on 4 November. J H B Robertson rejoined ship on 5 November. The half landing was taken in Fraserburgh on 8 November. N S Collie rejoined *Clupea* on 9 November but sailing was postponed due to deteriorating weather conditions. Work began again on 10 November and continued until 16 November when staff and equipment returned to Aberdeen.

Results

A total of 25 hauls was achieved, 15 with the Jackson Rockhopper Trawl (Whitefish grids) and 10 with the Scotnet Prawn Trawl (*Nephrops* grids). Both the RCTV system and self-recording miniature TV cameras were used in natural and artificial light conditions.

1. **Whitefish grids**

The results from nine valid hauls where small haddock and whiting were encountered are listed below. A deep water haul, consisting almost entirely of cod too large to pass through the grid spacings, was successfully filmed using an internal miniature camera positioned just ahead of the combined grids.

Percentage of numbers of fish passing through grid			
Haul No	Grid angle and spacing	Haddock %	Whiting %
170	45° + 40 mm	59	87
172	45° + 40 mm	44	68
173	45° + 40 mm	47	88
174	45° + 40 mm	69	92
176	45° + 40 mm	88	91
177	45° + 40 mm	84	95
178	45° + 40 mm	77	83
179	26° Two grids (40 + 45 mm) combined	80	87
180	26° Two grids (40 + 45 mm) combined	93	64
All Hauls		66	81

2. ***Nephrops* Grids**

Tube shaped aluminium structures of 0.65 and 0.85 m diameter with longitudinal bars 20 and 30 mm apart were observed with the RCTV from the outside and black and white and colour miniature cameras on the inside. The grids, inserted in the trawl extension, had prodders inside to encourage *Nephrops* tail-flicking. This worked well and the addition of baffles to create turbulent and decreased flow through the grid ensured that the tail-flicking *Nephrops* had increased chances of escape through the grid bars. Juvenile haddock and whiting were also observed to escape. Observations were made of escape numbers and behaviour patterns and further analyses of the data are being conducted in the Laboratory to ascertain the effectiveness of the grids compared to ordinary netting in the extension.

3. The short range distance measuring device (CEDRIC) was tested on a Scotnet Prawn Trawl during the trials and gave satisfactory results.

R D Galbraith
J H B Robertson

10 May 1994