

In Confidence - Not to be quoted without prior reference to Laboratory

FRV 'Goldseeker' Cruise 10/81  
Report  
31 August - 18 September 1981

Objectives

1. To perform engineering and net design studies on a 100 HP version of the Marine Laboratory semi pelagic trawl both in midwater and on the seabed.
2. To conduct a primary study on the design of a new experimental trawl to investigate design methods for allowing a higher proportion of immature fish to escape undamaged from the trawl.
3. To obtain video film of gears towed by commercial vessels if suitable opportunities arise during the cruise.

Narrative

Week 1. "Goldseeker" was loaded in Buckie on Monday 31 August. The whole day was spent setting up the RCTV and trawl gear instrumentation equipment and rigging the semi pelagic trawl gear with suberkub doors. For the four remaining days of the week seven instrumented and TV tows were conducted in the "Bellans", "South Deeps" and "Blackhill Lossie Tow", areas of the Moray Firth. The last tow of the week used vee doors on the semi pelagic trawl.

On Friday the semi pelagic trawl was changed to the BT 124R in preparation for week 2.

Week 2. Design experiments were conducted in this week on square and hexagonal mesh codends. Mainly TV, with some instrument, tows were carried out on the 7th, 8th and 9th but bad weather stopped trawling activities on the 10th and 11th. There were seven hauls for the three days worked.

Week 3. Monday and Tuesday of this week were a continuation of the codend design experiments of week 2. On Tuesday evening the BT 124R was changed to a two panel clean ground hexagonal mesh trawl. On Wednesday and Thursday, TV and instrument tows were conducted with the hexagonal trawl. There were twelve hauls for the week. Friday was spent unloading "Goldseeker".

Results

(a) 100 HP Marine Laboratory semi Pelagic Trawl

Full TV coverage of the net both in midwater and on the bottom using suberkub doors and on the bottom with vee doors was obtained. The video film of the net indicated a good design and no alterations were necessary. The engineering data is being analysed and a full report on the performance of the trawl will be published later.

(b) Experimental codend designs

Diamond, hexagonal and square mesh configurations were tested with a view to allowing the codend and extension meshes to stay more open thus allowing a higher escape rate of immature and undersize fish. It was immediately obvious from the TV data that a well designed square mesh codend would probably allow a higher rate of young fish escape. Since the "Goldseeker" tests three commercial square mesh codend trials have been very successful. All three boats experienced a big reduction of small fish retained and a very big improvement in the quality of fish caught. A report on the "Goldseeker" design tests and the subsequent commercial trials will be published shortly.

(c) Hexagonal mesh tests

Engineering and design data was obtained for comparisons to be made with conventional net designs. The data is being analysed in the Laboratory.

(d) There were no opportunities to film gears towed by commercial vessels in the areas worked.

J H B Robertson  
~~8 January 1982~~

Seen in draft W B Reid