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Charter Fishing Vessel *Challenge II* (UL33)

Cruise 0500H

REPORT

4-21 August 2000

Ports**Loading:** Fraserburgh**Unloading:** Peterhead**Personnel****FRS Staff**

R J Kynoch (In charge)
 P J Barkel
 G N Graham (7-21 August)
 E G Jones (7-13 August)
 M J Burns (13-21 August)

7 August only

J Home Robertson Deputy Minister for Rural Affairs
 A Brown SERAD
 P Johnston Photographer/Journalist
 R S T Ferro FRS

Objectives

1. To determine the effect of the position of a 90 mm square mesh top panel on the selectivity of a 100 mm diamond mesh cod-end attached to a commercial whitefish trawl as part of an EU funded Study Contract.
2. To measure the selectivity of the same cod-end with no square mesh panel.
3. To collect, as time allows, video film of the gear and fish reactions to it using the remote controlled television vehicle (RCTV).

Narrative

Messrs Kynoch and Barkel travelled to Fraserburgh with the fishing gear and RCTV equipment on 4 August and loaded the equipment aboard *Challenge II*. Staff then rigged the RCTV and fishing gear aboard the vessel during the 4-5 August. Three different 90 mm square mesh top panel configurations were rigged (Fig. 1). The vessel sailed on 6 August to a suitable area nearby Fraserburgh where the RCTV cable was made ready and system tests were carried out, the vessel return to Fraserburgh that evening. The remaining staff and Minister's party joined the vessel on the morning of 7 August after which the vessel sailed to fishing grounds 15 miles NE of Fraserburgh. One observation haul was made using the RCTV to assess the rigging of the square mesh panel in position 1, the vessel then returned to Fraserburgh where the Minister's party disembarked.

During the evening of 7 August the vessel sailed to fishing grounds east of Peterhead. Selectivity trials were thereafter carried out with the experimental cod-ends attached to the starboard trawl and a small mesh cod-end attached to the port trawl. During the cruise the selectivity of the square mesh top panel rigged in the three different positions, Figure 1, were measured. The selectivity of a 100 mm diamond mesh cod-end without a square mesh panel was also measured for comparison. Underwater observations of the fishing gear were made using the RCTV on four hauls during the cruise.

The cruise ended at Peterhead on 21 August and staff and equipment returned to Aberdeen.

Results

There were sufficient quantities of haddock and juvenile whiting on the grounds for every haul but there were insufficient whiting above 100% retention length (>31 cm) and very few cod. Thirty-two of the 36 hauls were considered valid.

Observations were made on two of the square mesh panel configurations (positions 1 and 2). Both configurations were found to be satisfactory with no distortion or twisting to the panel or the surrounding diamond mesh netting observed. Poor visibility at towing depth required artificial light to be used during the observations and therefore no conclusions can be drawn about fish behaviour to the square mesh panels.

The mean selection parameters for each cod-end configuration are given in Table 1. Preliminary analysis shows that inserting a square mesh panel with the leading edge 12 m or 9 m from the cod-line will give a small but significant increase in the probability of escape for smaller fish however, by inserting the panel directly into the cod-end there is a greater increase in the escape of smaller fish. A full statistical analysis will be carried out in the Laboratory.

R J Kynoch
18 December 2000

Table 1

Description	Number of valid hauls	Haddock	
		L50	SR
100 mm cod-end	9	23.9	5.5
Position 1: 12 m from cod-line	8	25.7	5.8
Position 2: 9 m from cod-line	6	25.6	4.8
Position 3: 6 m from cod-line	9	28.2	5.5

**Figure 1: Position of the 3m square mesh panel for each test case.
(distance measured from the codline)**

