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Charter Vessel *Challenge II*

Cruise 1302H

## REPORT

26 August to 6 September 2002

### Ports

Loading: Peterhead  
Unloading: Peterhead

### Personnel

E Jones (in charge)  
R Kynoch  
P Barkel

### Objectives

To assess the effect on juvenile gadoid fish escapes of:

1. Altering visible contrast of square mesh panel netting against surrounding net.
2. Using smaller, multiple panels instead of a single panel.

Both TV observation methods and selectivity experiments will be used.

**Out-turn costs per Project:** 12 days MFO6q

### Narrative

Staff joined MFV *Challenge II* at Peterhead on Monday 26 August 2002 and spent the day rigging fishing gear and RCTV equipment. The vessel sailed at 0930 hours on 27 August to the Buchan Ness fishing grounds east of Peterhead. Preliminary tows were carried out with the RCTV to make observations of the square mesh panel and establish camera attachment techniques. Difficulty was experienced with the camera frames and a lighter frame had to be designed and built by the ship's engineer. However, it was found to be impractical to use cameras on every selectivity haul. Between Friday 30 August and Thursday 5 September *Challenge II* remained on the Buchan Deeps and Klondyke Bank fishing grounds (57°38.5'-57°20.5'N and 1°20.3'-1°35.6'W) in water depths of between 70-100 m. A total of 20 selectivity tows and seven video observation hauls were achieved. Of these 14 and six tows respectively were considered valid. During this time *Challenge II* returned to berth overnight in Peterhead on a number of occasions to allow collection of materials to make up the camera frame, avoid bad weather and to land marketable fish. On the evening of Thursday 5 September, the vessel returned to Peterhead harbour. Equipment was offloaded on the morning of Friday 6 September and staff returned to Aberdeen.

## Results

Selectivity data was collected for haddock in all hauls and whiting when they were caught in sufficient numbers. The twin trawl method was used, in which two identical whitefish trawls were towed by the one vessel. One net sampled the population of fish available on the ground using a 40 mm small mesh cod-end for which a scientific derogation had been obtained. The other net had one of three experimental panels attached to a 40 mm small mesh cod-end. This enabled the selective properties of different panels to be compared independently of cod-end selectivity. Three different panel configurations tested were:

1. 3 m long, 25 open bars across, white 90 mm square mesh netting.
2. 3 m long, 25 open bars across, black 90 mm square mesh netting.
3. Same as panel 1 but with a middle section, 1 m long, of 110 mm, diamond mesh.

All square mesh sections were constructed from 90 mm knotless polypropylene twine and diamond mesh sections from 110 mm, 5 mm double green polypropylene twine. All panels were positioned 6-9 m from the cod-end. Between 4-5 valid hauls were achieved with each test case. Detailed statistical analysis will be carried out in the Laboratory using a method developed specifically for panel selectivity.

For video observations, a 3 m long panel, made from a section of black and a section of white square mesh netting, each 3 m long and 12½ open bars across joined together longitudinally. Video footage obtained of fish escaping from the panel will be analysed by an Aberdeen University honours student to detect any preference for escape through the black or white netting.

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E Jones  
18 October 2002