

Indexed *HA* 06  
R1/3

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Charter Vessel "Aries" BCK126

## REPORT

19 May - 6 June 1986

### Personnel

J Main	SSO	On board
G Sangster	HSO	On board
F Cruickshank	PTO	19-20 May
E Coroon	Craftsman	19-20 May

### Objective

To establish at what height Pandalus borealis pass into the trawl at various times of the day on the Fladen grounds.

### Narrative

Diving was conducted during the first 2 days off Cullen to confirm that the sampling nets were in the right positions relative to the shrimp trawl. Sampling nets were set in the mouth of the trawl at 4 heights, one at the seabed, one just above the headline, one just below the headline and one midway between the 3.5 m headline and the seabed. The rigid aperture of the sampling nets was 1 m wide x  $\frac{1}{2}$  m high, the material of the net was the same as the trawl (35 mm mesh) and the bag was 3 metres long. A small mesh cover was fitted over the end of the sampling nets to retain the smaller Pandalus.

To confirm our findings in shallow water on short towing warp the trawl was towed in deep water (140 m) fitted with a headline height monitor. Additional floats were required to maintain the correct 3.5 m headline height with the sampling nets in position.

Very poor weather conditions made it impossible to work on the Fladen grounds, so deep water (270-300 m) off Fraserburgh was fished.

With the bad weather continuing and having to handle both the trawl and sampling nets over the broad side a technique had to be developed to stop tangling of the sampling bags and damage to the light trawl netting. This was established and the sub-samples of Pandalus montagui showed that none were caught above the headline, some were caught just below the headline but most were in middle and bottom level in the mouth of the trawl. No differences were seen in the distribution between the hours of 0500 and 1900 hours. Light levels at this depth (153-159 m) were in the range 0.019 to 0.014 Lux.

"Aries" sailed to the Fladen grounds on 1 June where Pandalus borealis were found in quantity, samples were caught at all 3 levels in the mouth of the net with notable numbers in the sampling net attached above the headline.

The samples showed that the shrimp remain close to the bottom in the mouth of the trawl during the daytime and are found further off the bottom as the light level diminished. Large numbers were still sampled in the middle and upper levels at night after the commercial fleet had stopped fishing. The evening (dusk) haul showed

the greatest quantity of shrimp above the headline but still not so great as the quantity just below it. At the Fladen ground the light level at the fishing depth of 148-159 m during the day was 0.09 Lux and when hauling at 2300 hours 0.000025 Lux.

### Results

The results are now being analysed in detail.

J Main  
16 July 9186

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