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## CRUISE REPORT

FRV "EXPLORER"

12 May - 1 June 1977

## OBJECTIVES

- PART I
1. To determine the horizontal variability of salinity, temperature, chlorophyll and zooplankton by continuous measurement along a line from Rattray Head to Fladen. Two hydrographic stations will be worked to determine vertical distribution.
  2. To determine the horizontal variability of salinity, temperature and chlorophyll only, on the journey from Fladen to Lerwick.
- PART II
1. To conduct instrumented engineering trials of a trawl designed for the blue whiting fishery and to evaluate handling procedures for four panel pelagic trawls with long cod-ends on a side trawler.
  2. To study the dynamic characteristics of large four panel pelagic trawls in deep water using long warp lengths.

## NARRATIVE

Due to delays in recruiting a full complement of crew, "Explorer" did not sail until the evening of 17 May. Part I of the cruise was therefore cancelled and passage was made for deep water west of Shetland. Instrumented engineering trials of the blue whiting trawl commenced on 19 May and continued until the evening of 29 May with a mid cruise break in Lerwick on 21 May to exchange staff. After calibration of the ship's log over the measured mile off Aberdeen "Explorer" docked on the morning of 31 May.

## RESULTS

Twenty-two hauls were made at warp lengths varying from 200 to 600 fathoms.

The blue whiting trawl performed well and the gear configuration for several different rig combinations was monitored. The comprehensive set of instrumentation maintained a high success rate although a satisfactory solution for warp tension measurement at the ship has yet to be found. There were no major handling problems with the trawl which sustained minimal damage even during a two hour tow in contact with the sea bed. The use of the power block significantly reduced handling times and the hydraulic system was found to be simple to operate.

Measurements were made of the dynamic response of the trawl when warp length and speed were increased and decreased during towing. Analysis of these measurements will allow calibration of trawl position for given speed and warp length and will indicate the action to be taken to achieve a given depth in the shortest time. Information was also obtained on the sensitivity of the gear to relatively small differences between the lengths of the two warps.

R S T Ferro  
29 September 1977

Seen in draft:- J W Gillon