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FRV *CLUPEA*

Cruise 0997C

## REPORT

2 - 10 June 1997

**Loading:** Ardrossan, 28-29 May

**Unloading:** Fraserburgh

**Fishing Gear:** PT163

### Personnel

E J Simmonds	PSO
P J Copland	HSO
P Fernandes	RFAU
M Soria	Visitor (ORSTOM)
I Delarue (Miss)	Visitor (University of Paris)

### Objectives

1. To deploy the RESON SEABAT scanning sonar system in a towed body alongside *Clupea* for towing trials.
2. To obtain acoustic data on a number of herring shoals in the vertical aspect from an EK500 echosounder and at the same time in the horizontal attitude from the RESON system.
3. To obtain integration of schools 100 m from the vessel using a portable system deployed from a small boat.
4. To obtain biological samples from observed shoals by trawling.

### General

The fishing gear, heavy equipment and electronic systems was loaded at the end of the preceding cruise in Ardrossan. Staff travelled by laboratory minibus leaving Aberdeen at 0900 hours on Monday 2 June to join *Clupea* at Ardrossan. M Soria was met in Glasgow Airport at 1200 hours and accompanied the minibus to *Clupea* which proceeded to a suitable anchorage to commence calibration of 38 kHz echosounder system at 1500 hours. Following the calibration, trials of the two towed bodies were conducted at a survey speed of 10 Knots.

*Clupea* then proceeded to the area of the Clyde estuary around Arran (Fig. 1) to search for herring shoals. Line transects were then performed in the chosen area to obtain acoustic data. Work was concentrated in a small area where schools were found. The survey tracks were concentrated at the entrance and then at the southern end of Loch Fyne and when the weather deteriorated a more sheltered location in the Kyles of Bute was used. In both locations the vessel proceeded very slowly to allow repeat images to be collected from single schools. A small rubber boat with a portable echosounder system was deployed alongside *Clupea* on

occasion at a distance of 80-100 metres to collect additional shoal information. A single pelagic trawl was carried out to establish species composition of the observed shoals.

All scientists left the vessel at Ardrossan on 8 June, and *Clupea* returned to Fraserburgh for the end of the cruise on 10 June.

## Results

Simultaneous towed body deployment of both EK500 and Reson Seabat performed well and no problems were encountered with the deployment. However, the performance of the Reson Seabat was affected by the close proximity of the hull when directed across the path of the vessel. The transmitted sound beam struck the vessel and was reflected downwards. This formed a second transmit pulse providing a second echo separated by about 1.5 m from the first echos from any school below the vessel. These school shapes for schools under the vessel could not be recorded correctly. This method of deployment had to be abandoned, however, the work continued successfully using the Reson Seabat pointing away from the vessel and the hull transducer for the EK500 sounder. The user selected data capture system worked well with an image rate of about six per minute and by travelling very slowly, a total of 68 schools were successfully recorded with multiple images. All this data was sorted on board and has been put on CD ROM for distribution.

E J Simmonds  
31 December 1997

Seen in draft: A Simpson, OIC