

R1/6

Not to be cited without prior reference to the Marine Laboratory, Aberdeen

FRV *Clupea*

Cruise 0396C

## REPORT

21 February - 7 March 1996

### Personnel

M R Robertson	HSO	21 February - 7 March (in charge)
E Pinn	Res Asst	21 February - 7 March
P Copland	HSO	21-27 February
I Garioch	Res Asst	21 February - 7 March

**Gear:** RoxAnn, Day Grab, Agassiz Trawl, Thermosalinograph, Fluorometer.

### Objectives

1. To undertake a RoxAnn survey from Cape Wrath to Barra Head. On the completion of this work, the vessel will return to specific areas in the Minch and repeat the survey.
2. To record surface temperature, salinity and fluorometric data from the survey area.
3. To ground-truth the acoustic data and to collect grab and Agassiz trawl samples from the sedimentary zones defined by RoxAnn.

**Out-turn days:** 16 days BKE1

### Narrative

*Clupea* sailed from Fraserburgh at 1230 hours on Wednesday 21 February and made for the Minch. On rounding Duncansby Head, the weather deteriorated rapidly and the vessel headed for Scrabster dropping anchor at 2130 hours. *Clupea* remained at anchor all the following day.

At 0830 hours on the morning of 23 February, conditions had improved sufficiently to allow the vessel to sail for Cape Wrath and the Minches. However, on rounding the Cape, strong SW gales and a heavy swell forced the vessel to shelter off Kinlochbervie, dropping anchor at 1615 hours. Later that evening *Clupea* moved to the pier to allow a crew member to return home. The vessel remained tied-up all the following day awaiting an improvement in the weather and on a replacement cook. *Clupea* sailed at 1100 hours on Sunday 25 February and arrived on station at 1200 hours ready to commence the acoustic survey and to collect salinity, temperature, nutrient and fluorometry data from throughout the Minch.

Work continued, 24 hours a day, until 1700 hours on Friday 1 March when *Clupea* made for Kyle of Lochalsh, arriving there at 2030 hours.

On the morning of 3 March, the vessel sailed at 0800 hours and returned to the positions off Rhum. Data logging commenced at 1100 hours and continued until 1830 hours when *Clupea* headed for Loch Skipport, South Uist, dropping anchor for the night.

The next day, *Clupea* again returned to the sampling grid and worked until 2000 hours when the vessel made for Lochmaddy, North Uist, dropping anchor at 2145 hours.

Finally, on the morning of 5 March, *Clupea* sailed for the transect positions in the North Minch. All work was completed by 2045 hours and the vessel sailed for Fraserburgh arriving there at 1500 hours on 6 March.

## Results

1. 1,000 miles of RoxAnn E1, E2 and depth data were logged from throughout the North Minch, Little Minch and the Sea of the Hebrides (see Fig. 1). This information was used to produce 3D images of the Minch showing sediment distributions overlaid on surface plots of the local bathymetry. Further analysis will be completed later. The data will also be used to design the TV and Grab surveys to be carried out during *Clupea* cruise 0696C.
2. A total of 390 nutrient and 39 chlorophyll samples were collected along with continuous temperature, salinity and fluorometric recording. These samples and data will be analysed later in the Laboratory.

M R Robertson  
25 April 1996

Seen in draft: A Simpson

Figure 1

