

R1/6

In Confidence: Not to be quoted without prior reference to the Laboratory

FRV 'Clupea'

Cruise 4/83

4CR83

Report

7-27 April 1983

Objectives

1. To develop techniques for measuring netting panel angles and mesh setting angles using the remote controlled television vehicle (RCTV).
2. To develop techniques for measuring the cross-sectional shape of the net using an echosounder mounted on the RCTV.
3. To obtain detailed measurements of the loading and geometry of a pelagic trawl.

Narrative

Fishing gear and equipment were landed in Greenock on 7 April. 'Clupea' then steamed for Kyle of Lochalsh arriving there on 8 April at 5 pm. On 9 April speed log calibrations were carried out in Loch Duich using the Decca trisponder system.

On 10 April the vessel sailed for the Sound of Raasay to begin the main task of the cruise. At the first attempt to deploy the RCTV the clutch on the instrumentation winch failed. The gear was then shot but had to be hauled almost immediately due to an engine defect. 'Clupea' entered Portree harbour where repairs were carried out promptly. The vessel then returned to Kyle of Lochalsh for winch repairs. These were completed on the morning of 12 April and the winch was tested by towing the RCTV astern south of the Crowlin Islands. The clutch failed again and the vessel returned to Kyle.

On instructions from the Marine Superintendent, 'Clupea' steamed to Kirkwall to enable winch repairs to be carried out by the manufacturer. After arrival on the morning of 13 April repairs were carried out on that day and on 14 April. On 15 April the vessel steamed to the Copinsay area for trials. The RCTV and the gear were shot and the vehicle manoeuvred around the gear. Intense electrical interference on the TV screen made handling difficult. The vessel returned to Kirkwall. The clutch had become stiff on the shaft during the trials and further repairs were made during the evening.

'Clupea' left Kirkwall early on 16 April to return to the West Coast. The RCTV was towed astern to test the winch performance off Dounreay. The clutch again broke and the vessel steamed to Stromness. It was decided to put the winch ashore for repair and this was done late on the afternoon of 17 April. The vessel then steamed overnight to the Sound of Raasay. Instrumented trawling was carried out in this area on 18 and 19 April. 'Clupea' steamed to Kyle on 19 April for a half-landing on 20 April.

From 21 to 24 April instrumented hauls were made to obtain performance data on the sampling trawl PT 163. On 25 April 'Clupea' picked up a mooring previously used by the Department in Loch Broom. She then proceeded to an area near the Rubh Re Lighthouse to fish for spawning herring. Few fish marks were seen but a small quantity of ripe herring were caught and transferred to the field station at Loch Ewe. 'Clupea' then sailed for Buckie arriving on 26 April.

Results

Objectives 1 and 2 had to be abandoned because of the winch failure.

Twelve instrumented hauls were made and comprehensive data obtained on the geometry and loading of the trawl (PT 163) using 137 m (75 fathoms) and 274 m (150 fathoms) of warp. 100, 200 and 300 kg wingend weights were used at each warp length in separate hauls.

At 137 m warp length the variation in performance was investigated when the upper rather than the lower towing plate was used at each of the three wingend weights.

Fourteen instruments were used on every haul with an overall success rate of 79%.

The data will be analysed in detail at the Laboratory to determine gear and net drag and other major parameters.

Peter A M Stewart
11 May 1983

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