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

FRV "CLUPEA"
CRUISE 7/83
REPORT

R1/6 /JR

14 July to 3 August 1983

7CR83

Objectives

1. To observe and compare the reactions of fish to both rockhoppers and bobbins ground gears.
2. To record the ground gear noise of both bobbins and rockhoppers.
3. Radio-caesium monitoring, sample off Buckie for Lowestoft Laboratory.

Narrative

The scientific staff joined the "Clupea" at 1300 hours on the 14 July. Due to work still being carried out on the hydraulic system for the RCTV winch the ship was delayed from sailing to the Outer Hebrides until 1900 hours on the 16 July.

On passage a short stop was made to take fresh water at Scrabster before continuing in strong northerly winds to Sandy Bay, Tolsta arriving at 1900 hrs.

Work commenced at 0700 hours on the 18 July and was only broken for the two rest day periods on 20 and 27 July. On the 28th with south-westerly gales forecast the "Clupea" sailed for the Copinsay grounds off Orkney but due to the gales increasing to severe the ship berthed at Kirkwall at 0230 hours on the 29th and remained there until 0800 hours on the 30 July. The opportunity was taken whilst in Kirkwall to land the RCTV for a repair to damage which was sustained whilst working on hard ground off Tolsta Head. Whilst this repair was being carried out the divers underwater vehicle was towed at various speeds up to 5 knots alongside the trawl on the RCTV tow cable using the new winch in Deer Sound. This technique proved to be most satisfactory.

The remaining two days was worked off Copinsay, Start Pt and Aukerry. Fish proved to be very scarce on these grounds.

On 2 October the net was shot 8 miles off Duncansby and towed south. Fish were still scarce but good observations were made of haddock and whiting reacting to the trawl gear.

A water sample for Radio-caesium monitoring for Lowestoft Laboratory was collected before arriving at Buckie at 1830 hours.

Results

On North Sea Trawl BT130C rigs, rockhoppers and bobbins in a variety of combinations were measured and observations video taped. The sounds that these gears produce were also recorded at various positions from the ground gear on the trawl forward to 10 metres ahead of the trawl boards.

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Towing/a sandy bottom it was noticeable that the steel bobbins at the wing ends were the most dominant noise source over the whole area. With these steel bobbins removed it was noticeable that as the transducer was moved forward from the trawl the noise from the ship became the most dominant at the area between and forward of the trawl boards.

The newly developed control system for the RCTV worked well and good video tape was recorded of fish behaviour reactions to these gears working in deeper water. These observations confirm the reaction of fish in the shallow water observations made previously. Species observed were haddock, whiting, cod, mackerel, plaice and large numbers of sandeels. Great quantities of haddock (12 - 15 cms) were also observed and recorded on video and still camera passing back and rising over the footrope into the trawl and from these observations it appears that they could quite successfully be separated off using the two level trawl.

J Hain

6 September 1983

Seen in draft: G Geddes,