R1/12 AMM

In Confidence - Not to be quoted without reference to the Laboratory 4SR82

FRV "Scotia"

Cruise 4/82 Part I

REPORT

14-22 April 1982

Personnel		
	S T Forbes	SSO (In charge)
	M J D Mowat	SSO
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	A K Naha	SO
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Objectives

1 To test a dual beam echo-sounder for fish target strength assessment
2 To obtain in situ target strength measurements for blue whiting.

Narrative

"Scotia" sailed from Aberdeen on 14 April and proceeded to anchor in Loch Eribol the following morning to allow the dual beam system to be set up and tested with a standard target. The work was not completed by dusk, and as Captain Gillon was not satisfied with the anchorage in the prevailing weather, "Scotia" moved overnight to a better position in Broad Bay where the tests were completed on the following day.

It had been intended to start the in situ measurements at about 60°N and 6°W where blue whiting had been found during the previous cruise, but from Broad Bay it was more convenient to proceed to the area west of St Kilda where strong blue whiting traces were in fact found. Satisfactory acoustic data were obtained by stopping the ship and deploying the transducer at a depth of about 350 metres, using both the ship's netsounder cables for signal handling and load bearing. A sample trawl haul was made in the same area, resulting in a large catch of blue whiting from which excellent size distribution data were obtained.

The cruise was then continued northward along the edge of the continental shelf, and further acoustic measurements were made at appropriate locations. Unfortunately, no further fish samples were obtained due to damage to both nets which could not be repaired in a reasonable time. It is possible that on one occasion the net gave way under an excessive weight of fish, as the cod-end was completely missing on recovery and no snags of any sort were seen on the net-sounder trace.

Finally, "Scotia" proceeded to anchor in Inganess Bay to allow performance meansurements to be made on the newly installed Simrad EK400 scientific echo-sounder system.

Observations

The dual beam technique requires two signal links to the transducer. The use of two netsounder cables does work, but the signal quality is degraded by the length of cable involved, and handling is difficult. On one occasion, the transducer frame was damaged by collision with the ship's side. Fortunately the ship's engineers repaired the damage in a very willing and competent manner, and little time was lost. Some time was lost however, in making repairs to the cables, some of which were necessitated by previous repairs having been improperly carried out. It was noted that the run of the Elac cable is such that damage is caused every time it is used by contact with a sharp edged sheave mounting, and this will be seen to.

Sinclair T Forbes

26 May 1982

Seen in draft: J W Gillon