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MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1985 RESEARCH VESSEL PROGRAMME

REPORT : RV CIROLANA : CRUISE 4A

(PROVISIONAL: Not to be quoted without prior reference to the author)

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DURATION

8-10 May 1985

LOCALITY

East Coast

AIMS

1. Performance trials of SM600 sonar

2. Training in the use of the sonar

3. Preliminary trials of the multinet discrete layer sampler

NARRATIVE

CIROLANA left Lowestoft at 1100h BST on 8 May. The first few hours were spent in setting up and adjusting the sonar transmitter and making measurements of noise versus speed, then attempting a measurement of acoustic source level. The latter was hampered by the sea state. Work with the multinet proceeded simultaneously with the above and the first launch showed a spectacularly steep dive. Problems with the instrumentation were then investigated. It was found that some of the towing cable cores became open circuit under tension so the tedious job of shortening and reterminating began.

Checks on the sonar were completed by the morning of 9 May so the training course was started. After a session on theory the practical aspects of dome inflation and checking were demonstrated. Wrecks in the area were used to give practice in the use of the equipment in various modes.

Meanwhile the multinet was being used on a non-conducting warp whilst various changes were made to its configuration. During one recovery operation the 'G' link on the tail rope opened and the multinet dropped down the ramp, but only slight damage was suffered. Later the accumulator spring broke bringing the net frame down heavily onto the deck. This breakage was due to a crack which appeared to have been present for some time but was not easily visible.

A further check on the sonar source level was made in very calm conditions and the specified figure was recorded.

Work began early on 10 May with a 50 minute tow of the multi-net sampler and all instrumentation working. Various changes in configuration were tested until work finished at 1330h and CIROLANA docked at 1415h.

RESULTS:

Aim 1 All of the required performance trials of the sonar were completed. On strong targets the cross-talk between beams was excessive and will need further investigation. A target of 10 airfilled floats in midwater could not be positively identified. These factors will not seriously affect the use of the sonar when searching for large targets.

Aim 2 Seven of the ships officers took part in the training which included routine checks but also demonstrated the capabilities of the sonar system.

Aim 3 After the first brief launch when the net dived steeply this could not be repeated for most configurations of hydrofoil angle and towing point positions. The frame showed serious instability, usually turning over and rising to the surface. Further modofications were made and then during a few long tows the nets were operated and the change in depth noted. At 3kts the depth/warp ratio was 1.5:1 and opening and closing the nets made no difference to the depth.

R B Mitson

SEEN IN DRAFT G Sinclair Master
R C Newrick

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