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

1973 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 1(a)

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

STAFF

R B Mitson
D Harding
R C Bannister
H R Stewardson
R Babb
) 2 January - 9 January (Birmingham University)
C R Hood
N D Pearson
A J Burridge

D W Mummery
L J Tong (New Zealand)
C T Macer
E G Shreeve
P Winslade
S Lockwood
) 9-11 January

DURATION

Left Grimsby 1600 h 2 January

Arrived Plymouth 0900 h 11 January

All times Greenwich Mean Time

LOCALITY

Western English Channel

AIMS

1. To calibrate 30 and 100 kHz echo survey and counting systems;

2. To carry out deep water trials with the 100 kHz towed narrow beam system;

3. To test the equipment for the Lake Rudolph Project;

4. To make experimental surveys of any suitable fish concentrations.

NARRATIVE

CIROLANA left Grimsby at 1600 h 2 January and set a southerly course for a passage to the Western English Channel. A short stop was made on 3 January to test equipment in the sea after which the vessel carried on to anchor in Plymouth Sound for acoustic calibration at 0800 h 4 January. This work continued until 0900 h 5 January when the anchor was weighed and CIROLANA moved into Lyme Bay to carry out an echo survey starting off Dawlish at 1350 h and working south.

With the survey complete the anchor was dropped in Tor Bay so that calibration could be continued. An increasing easterly wind prevented completion of this work so on 6 January a further echo survey was carried out in Lyme Bay, after which the Granton trawl was shot for a 30 minute tow.

CIROLANA then returned to Plymouth Sound surveying on the way. Calibration continued on 7 January until 1830 h when the vessel moved off to start a survey grid in the direction of the Eddystone. Different sets of survey equipment were used for the outward and return grids. When this was complete a course was set westwards. During the morning of 8 January the 100 kHz towed transducer was lowered but problems with the receiving transducer delayed work in the deep water. An echo survey was started which led to the midwater trawl being shot between the Eddystone and West Rutts at 1940 h. It was hauled at 2039 h but not finally on board until 2315 h because of the quantity of catch; even then the net had to be cut open to reduce the weight.

After this the 100 kH z towed transducer was used with good results until 0230 h 9 January. Attempts to catch mackerel with feathers were successful so with a hundred or so fish in good condition, CIROLANA returned to Plymouth Sound for fish target calibration. Messrs Harding, Bannister, Stewardson and Babb left and Messrs Macer, Winslade, Shreeve and Lockwood came on board. Difficulties with the equipment calibration were found to be the result of a transducer fault which could not be immediately rectified. On 10 January echo survey was again started over the area where the midwater trawl catch had been made. Efforts to catch some mackerel from the rather compact shoals failed. After dark the midwater trawl was shot on single fish echo traces. Two short tows were made south of the Eddystone the last being completed at 2130 h after which CIROLANA proceeded to Plymouth for the changeover of staff on 11 January.

RESULTS

Aim 1: The calibration of each system was checked a number of times. Close agreement with the 1972 test figures was obtained for source level measurements, but difficulty was experienced with the transducer reception calibrations and these must be further investigated.

Aim 2: Trials with the 100 kHz towed narrow beam system were limited to a maximum depth of 120 m since the receiving system could not be repaired in time for deeper water work. Results were good and this system appears to have good fish detection potential.

Aim 3: A considerable amount of time was devoted to the equipment for the Lake Rudolph Project. Checks and modifications were carried out in consultation with the manufacturers, but the equipment is so insensitive that it cannot be used at present.

Aim 4: Several echo surveys were carried out whilst measurements were made of the received signals using different techniques. Detailed results have yet to be worked up.

MISCELLANEOUS RESULTS

1. The experimental warp length measuring head was fitted and observed. It worked well on all hauls;

2. A hull mounted transducer was used with the acoustic link and gave good results;

3. Samples of fish were measured and frozen for Messrs Bolster and Winslade;

4. Mr Babb was able to make recordings at 10 kHz and 100 kHz for his work.

R B Mitson
18 January 1973

SEEN IN DRAFT GWH

INITIALLED AJL

DISTRIBUTION

Basic List
R B Mitson
D Harding
R C Bannister
H R Stewardson
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N D Pearson
A J Burridge
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E G Shreeve
P Winslade
S Lockwood