

R1/7

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

FRV "MARA"

CRUISE 1/78

REPORT

23 JAN -- 10 FEB 1978

Personnel (23-27 Jan 1978)

S T R de Silva	HSO
Mrs M V Cameron	SO
J H B Robertson	ASO
C D Hall	ASO

(30 Jan -- 10 Feb 1978)

C S Wardle	PSO
S T R de Silva	HSO
J Main	HSO
C W Shand	SO
G I Sangster	SO
J H B Robertson	ASO
A J Tough	PTO IV

Objectives

- (1) To find out if the 100-200 HP 'Gourock' herring trawl can be improved for sprat trawling.
- (2) To compare the 100 HP delagic gear (specially adapted for sprat fishing) with the Gourock as a sprat sampling net.
- (3) The experiments on selectivity will involve:-
 - (a) approaching groups of fish with the two gear at a variety of speeds.
 - (b) testing the selective properties of 11, 16, 20 and 30 mm cod-end mesh sizes
 - (c) observing all parts of the gear using the towed vehicle and television.

Narrative

"Mara" arrived in Buckie from her refit in Lossiemouth during the late morning of Monday 23rd, when the gear and instrumentation were loaded and rigged on board. The compass was set during the morning of the 24th. A short haul was conducted in the afternoon and "Mara" returned early to Buckie to meet the Marine Superintendents. Gear instrumentation hauls and echosounder sprat searches were conducted during the rest of the week. On Friday "Mara" returned to Buckie in the early afternoon to meet the compass setter.

The TV and diver systems were installed on Monday the 30th but the "Mara" did not sail due to prevailing poor weather conditions. The following day bad weather and poor visibility again excluded diving operations. Nevertheless, "Mara" conducted a sprat echosounder search along and up to Nairn, Cromarty and

Balintore coasts. On the 1st and 2nd February the survey continued and the gear was shot on each of the days to determine the density and type of fish seen on the echosounder. No diving observation was conducted on these days due to the poor water clarity.

"Mara" did not sail on Friday, 3rd February, due to auxiliary engine trouble.

Diving observation trials continued in the following week till Thursday the 9th February. The cruise then ended to allow the hydraulic system on board to be repaired on Friday, 10th February.

Results

A summary of results of the instrumented trials conducted during the first week are given in the following table:-

Parameters		100 HP Delagic	Modified Gourock
Speed	Knots	2.5	2.5
Vertical net opening	Fathoms	5	3
Wing end spread	Fathoms	5	6½
Net depth (on 2 warp plate)	Fathoms	4.8	5
Net depth (on 3 warp plate)	Fathoms	12	-
Total gear drag	Tonnes	0.96	1.06
Gear horsepower	HP	16.5	18

The first week's survey indicated that there were no significant sprat marks within 15 miles radius of Buckie. Reports from the fishery officers stated that there were still 4 commercial trawlers fishing for sprats off Balintore.

During the second week persistent poor weather conditions excluded diving operations. Trawl and echosounder surveys conducted during this week also indicated that there were little or no concentrations of sprats.

Improving weather allowed diving operations during the final week. No sprat behaviour was observed while towing but the new Gourock sprat net was further modified to ensure smooth tailoring and proper fishing. Sprats, and other species were seen to escape through the larger meshes in the fore part of this net when it was static during the hauling operation.

Conclusion

It is recommended that a lazy deckie-choker be used at the fore part of the extension during future trials or surveys. In future, to allow a greater chance of successful observations of behaviour it may be necessary to charter vessels at short notice when there are known to be concentrations of sprats and the weather is good. All of the behavioural objectives were not fulfilled due to the lack of fish concentrations and poor weather but the modified Gourock sprat trawl is now considered a suitable gear for sampling.

S T R de Silva
5 June 1978

Seen in draft: W T Mair