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

CRUISE REPORT

FRV Mara

5 - 30 April 1976

Personnel:

S T R de Silva	HSO	(in charge)
M Marsh	SO	
W R Leys	PTO IV	
Miss M V Moodie	SO	(pt) (5-16 April)
Dr A Reid	SO	(pt) (19 - 30 April)

Diving and TV Support: J Main, G Sangster, R Priestley, J Roberston, A Tough plus W Gray (on call)

Objectives

1. To experiment with techniques for using low intensity TV systems on Pelagic trawls.

2. To observe performance and tailoring of the Delagic trawl on and off the bottom.

3. To determine the engineering characteristics of the 200 HP Delagic trawl and to evaluate and compare its performance using Suberkrub type and various other semi-pelagic doors.

4. To further evaluate the performance of the MK1 M and Grad 1m nets.

Narrative

The gear instruments and diving equipment were loaded on board in Buckie on the morning of 5 April and the Delagic trawl was rigged on the same day. Bad weather prevented sailing on the 6th, but trials began in Spey Bay on the 7 and continued (with a weekend break) until Friday 16 April.

During the week 19 - 23 April, the programme was modified to allow shooting of "at sea" sequences for the new laboratory film, Mara and Clupea working together for the most part. The recently delivered underwater low intensity TV camera system was installed during this period. In the limited time available for gear work various methods were tried in deploying the TV system with and without the divers' sledge.

Gear trials and further tests of the low intensity TV system were continued during the final week beginning 27 April.

Results

Techniques for deploying and using the low intensity TV system from the Mara

were developed, although maximum benefits from this equipment were not obtained due to late delivery of the system, but the full potential of the system was amply demonstrated.

Persistent poor visibility initially restricted diver observation of the gear, but instrumented hauls were carried out to determine the engineering characteristics of the experimental gears. The turbidity of the water later decreased and the gear was observed and recorded by divers using still and cine film.

Tests with Japanese type boards of approximately the same area as the intended suberkrubs showed that the gear was insufficiently spread and that depth control was very poor. Insufficient time was available to experiment further with the rigging of these boards. Various modifications were made to the tailoring of the netting around the footrope, to decrease stress concentrations and to ensure that the netting did not come into contact with the bottom.

The following is a summary of the basic results obtained from the trials using suberkrub type boards.

Gear - 200 HP Delagic

Warp aft - 75 fathoms

Speed knots	2.5	3
Net opening Fathoms	7.0	6.5
Net Depth Fathoms	13	15.5
Net Drag Ton	1.0	1.7
Gear Drag Ton	1.2	2.05

Due to modifications to the cruise programme required for filming work, it was not possible to fulfil part 4) of the objectives.

S T R de Silva
Dr A Reid
16 9 76

Seen in draft - W T Mair