

R1/6

In Confidence - Not to be quoted without prior reference to the Laboratory

FRV "Clupea"
Cruise 11/85

11CB85 MB

18 September - 8 October 1985

REPORT

Personnel

R S T Ferro	SSO
A MacDonald	PTO III
J T M Hunter	PTO IV
R D Galbraith	HSO 18 - 25 September
C D Hall	HSO 25 September - 2 October
J Grant	Craftsman 2 - 8 October
A Strickland	SFIA 18 September - 2 October
N Ward	SFIA 2 - 8 October

Objective

To optimise the rigging of each of 3 sizes of vee and flat doors and measure the performance of the gear in this condition. To investigate the effect of different water depths on gear performance.

Narrative

Fishing gear and instrumentation were loaded and rigged on 18 September and the warps were replaced.

"Clupea" worked either deep or shallow water tows from 19 September to 7 October, except 22 and 23 September and 6 October when the day's work was curtailed by poor weather. Half landings were taken on 25 September and 2 October. A total of 36 tows were made.

Results

Comprehensive sets of measurements were made on each of the 3 sets of vee doors. Several tows were required to optimise the performance by changing the positions of the towing points and lengths of backstrops. In the time available, only one set of flat doors could be tested.

a) Vee doors

The efficiency of the doors was improved by reducing the angle of attack. However, the more efficient configuration caused greater instability when shooting, particularly when the top backstrop was lengthened to make the door stand "upright" when towing. It was necessary to strike a balance between efficiency and ease of shooting. The problems of stability on shooting were greater in shallow than in deep water.

b) Flat Doors

The towing brackets of the flat doors F33 and F34 were found to be wrongly positioned. After correction the door at the forward gallows was still difficult to shoot in shallow water (30m). The upper backstrop was shortened and measurements made in deep and shallow water so that the precise orientation of the door while shooting could be compared to determine the cause of the instability.

c) Measurements

During each haul wire tensions were measured ahead and aft of the doors and at the wing-ends. Door and net spread and headline height were recorded. Two propeller speed logs were attached to the headline and gave agreement usually well within 0.05 knots. The depth and the angles of heel and pitch of the port door were recorded. Measurements of angle of attack proved to be difficult. The flag attached to the top of the leading edge of the door was vulnerable. It was also suspected that the flow over the door affected the direction in which the flag was pointing in some cases.

R S T Ferro

30 October 1985