

*Substantive*

R1/7 In Confidence - Not to be quoted without reference to the Laboratory

JA  
6aMR78

FRV MARA  
Cruise 6a/78  
REPORT  
23 May - 16 June 1978

Personnel	J Main	HSO (In charge)
	G I Sangster	SO
	A MacDonald	PTOIII
	A J Tough	PTOIV
	P Barkel	PTOIV
	T Howell	SO May 28 to June 2
	E Wright	ASO 4 to 16 June

### Objective

To measure the dimensions of sand clouds generated by different types of trawl boards and their relationship to trawl bridles.

### Procedure

The whole of the programme was carried out working daily from Buckie in the Spey Bay test area.

Only 3 of the 18 days were lost during the cruise due to bad weather which made it unsuitable for diving. The water clarity was poor during the whole exercise due to the heavy N'ly swell at the beginning of the cruise making it necessary to adapt the newly perfected underwater techniques.

During the 7 June the MARA docked early to allow the P&TO staff from the Laboratory to be interviewed by Staff Inspector from London.

### Results

The information collected during the cruise from television video tape, direct measurements and gear measuring instruments is now being analysed in detail.

The sand cloud geometry of the flat and cambered boards was measured in detail and the Vee and polyvalent boards to a lesser extent. Mapping of the sand cloud from high vertical views was impossible due to poor water clarity and the spread of the sand cloud was measured by a line stretched from marked points on the spreading wire to both edges of the sand cloud using the TUVII. The angles of the boards and spreading wire were measured in relation to the direction of tow from carefully made vertical views recorded using a television camera and video tape. The height of the sand cloud was measured using a depth gauge and the vehicle TUVII to move from point to point.

From the observations the shape of the sand cloud generated by each board was mapped out and for each board appeared to be consistent from haul to haul with the cloud being symmetrical at the wing ends. Details of the shapes of the four sand clouds generated by the 4 boards will be analysed and compared and related to the gear geometry.

J MAIN  
4 July 1978

Seen in draft: W T Mair