IN CONFIDENCE Not to be quoted without reference to the laboratory

CRUISE REPORT

FRV CLUPEA

27 September - 22 October 1976

PERSONNEL	Dr P A M Stewart	PSO	(In charge)
	Mr G M Cameron	SSO	(part time)
	Mr A MacDonald	PTOIV	" "
	Mr P J Copland	ASO	
	Mr E Low	Vac Stud	(part time)

OBJECTIVES

1) To test a prototype electrified otter trawl.
2) To continue comparative fishing trials for flat fish using the 9 m electrified beam trawl.

NARRATIVE

Gear was loaded in Buckie on 23 September, as the cruise commenced on the Aberdeen September holiday weekend. Activities during the first fortnight were severely limited by bad weather. To complete the first objective the programme was altered and 'Clupea' spent the second fortnight in the Moray Firth. Prawn trawling was conducted in the area from Lossiemouth west to the Forres Hole. Divers inspected the otter trawl, rigged with the electrical equipment, in Burghead Bay. The beam trawl was used on 18 October for Nephrops and during the last week of the cruise for flat fish. Trawling for flat fish took place in Burghead Bay and off Gardenstown. All weekends were spent in Buckie and the cruise finished in Aberdeen on 22 October.

RESULTS

1) The tests of the prototype electrified prawn trawl were more encouraging than anticipated. A pulse generator in a cylindrical steel housing was mounted on the aft side of a V door and supplied with power via a cable from the ship. A large electrode array was rigged from a warp attached to the sweeps just aft of the doors. The array consisted of ten 5 m long electrodes, 1.5 m apart, connected in a series - parallel arrangement. The pulse generator supplied the electrodes via a pair of heavy copper cables. Inspection of the gear by divers revealed that the attachment of this equipment had no observable effect on the performance of the gear.

Catches with this gear varied between 2 and 4 baskets of Nephrops for each 2 to 3 hour haul; the best haul being 4 baskets in 40 mins. There was no observable difference between the catches made with and without electric ticklers. The most vulnerable part of the electrical system appeared to be the electrode cables from the pulse generator to the array. The equipment was handled with considerable care during the trials and consequently suffered only minor mechanical damage. The pulse generator and electrode array design proved satisfactory but require certain improvements. The electrical output of the pulse generator was limited by the power handling capacity of the transmission cable indicating that the size of an effective electrode array is limited by the size of cable which can be conveniently handled.

2) The single day experiment using the beam trawl to fish for Nephrops proved inconclusive due to low catch rates. A more intense stimulus was used than in the previous Nephrops comparative fishing experiments in an attempt to obtain clearer information.

3) Weather conditions restricted flat fish trawling during the fourth week to grounds on the south shore of the Moray Firth. Catch rates were low and persistent difficulties were experienced with the electrical equipment thus limiting the amount of useful new data obtained. The apparatus problems appear to have arisen from the ageing of certain pieces of electrical equipment.

Peter A M Stewart
28 October 1976

Seen in draft A Mair