

5689

# BIOLOGICAL OCEANOGRAPHY CRUISE REPORT

S9A  
18/9

CRUISE DATE 11 - 14 September 1994

## PERSONNEL

B Stewart	SSO (SIC 11 - 13 Sept 1994)
C Gibson	SPSO
W Clarke	SSO (SIC 13 - 15 Sept 1994)
P Elliott	SO
G McCullough	Student
J Brown	SSO (MAFF)
L Fernand	SSO (MAFF)
J Read	SSO (MAFF)

## CRUISE OBJECTIVE

- (i) To recover and service moorings/instrumentation located in the northwest Irish sea.
- (ii) To assess the performance of the recently fitted Acoustic Doppler Current Profiling system (ADCP).

## CRUISE NARRATIVE

### Moorings

Monday 12 September 1994

The vessel departed from Belfast at 2200 hrs Sunday 11 September 1994 and sailed overnight to arrive on mooring station 3 (ASRD station 47) in Dundalk Bay at 0645 hrs Monday. The weather was dry with light winds. Work commenced at 0700 hrs with three deployments of the Gulf III. At 0900 hrs the mooring was recovered to the ship deck where a sediment trap was removed and a current meter (MAFF, Lowestoft) was attached to monitor at depth 12 metres. The mooring was redeployed at 1000 hrs at position 53° 43.00 N 06° 04.10 W. Work completed the vessel sailed to mooring station 1 (ASRD station 38) to arrive at 1245 hrs. The mooring was recovered and two sediment traps were removed and replaced by two current meters (MAFF, Lowestoft) to monitor at depths 10 and 80 metres. The mooring was redeployed at position 53° 51.19 N 05° 34.01 W at 1400 hrs. Samples for phytoplankton and nutrient analysis were taken from the ship's clean seawater supply and following three deployments of the Gulf III work was completed at 1530 hrs. The vessel sailed in a south easterly direction to arrive on mooring station 2 at 1705 hrs. The mooring marker buoys could not be located and despite extensive dragging of the bottom for subsurface components of the mooring, nothing was recovered. At 1830 hrs attempts to recover the mooring were abandoned. The vessel then sailed north to arrive on ASRD station 4 in the North Channel at 2345 hrs where three deployments of the Gulf III were performed.

Tuesday 13 September 1994

Work was completed 0115 hrs Tuesday and the vessel drifted overnight in Bangor bay before sailing back to Belfast to dock at 0745 hrs. Four DANI scientists C Gibson, P Elloit, G McCullough and B Stewart disembarked leaving W Clarke as SIC for the recovery and service of the five remaining MAFF moorings. The vessel departed Belfast at 0845 hrs.

### **Acoustic Doppler Current Profiler (ADCP)**

The ADCP system was set up to monitor throughout the entire cruise. Experienced operators Juan Brown and Liam Fernand (MAFF) spent long periods with DANI personnel explaining aspects of operation, interpretation of data and demonstrated methods to optimise data capture. They were satisfied that the system was performing properly and that it was producing meaningful data. This was highlighted during an east-west transect of the frontal region where a 30m upper layer of water was monitored moving counter to a lower layer but in different directions at the frontal extremes. This indicated the presence of a gyre associated with thermal stratification. These observations were supported by temperature and salinity data obtained from the Gulf III deployments which showed a thermocline in the water column with an upper 30 metre layer of water with a temperature 2 °C above that of the lower layer.

### **ACKNOWLEDGEMENTS**

I am grateful to Juan Brown and Liam Fernand (MAFF) for helpful guidance and discussion during our ADCP sessions. Special thanks to John Read (MAFF) for advice and assistance during the mooring operations. Finally the ship's master, officers, engineers, catering staff and crew are thanked for their cooperation during this cruise.



**BM STEWART**

16 September 1994

WORK SCHEDULE

Biological Oceanography Cruise 11 - 16 September 1994

BUOY REF. (See attached notice Notice to Mariners)	GRID REF.	ACTIVITY
1	53° 51.0' N 05° 34.0' W	Service mooring
2	53° 45.0' N 05° 15.0' W	Service mooring & recover mooring
3	53° 44.0' N 06° 04.0' W	Recover mooring
B	54° 38.2' N 05° 22.0' W	Service mooring
G	54° 51.4' N 05° 13.0' W	Service mooring
XX	54° 47.5' N 05° 33.0' W	Service mooring
F	54° 48.7' N 05° 18.0' W	Service mooring
NN	55° 24.0' N 06° 14.0' W	Service mooring

NOTE

- (i) The order in which the moorings can be serviced will be weather dependant.
- (ii) During the cruise it may be necessary for the vessel to periodically return to Belfast to offload accumulated mooring components.