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FRV *Alba na Mara*

Cruise 0509A

REPORT

02 - 06 April 2009

Loading: Fraserburgh, 16 March 2009
Unloading: Fraserburgh, 6 April 2009

Personnel

C Hall	(SIC)
J Hunter	
N Collie	
M Burns	
P Copland	2 April
J Dunn	3 April
M Geldart	3 April

Out-turn days per project:

FRELI1 - 5 days

Equipment

RCTV towed TV vehicle
RoxAnn
Umbilical cable 600m
"Sentinel" spar buoy & hydrographic "U"-mooring
Demountable net-drum winch
Transducer/instrument pole
Trawl BT158 & Morgere doors
DMIKT Plankton sampler
OCEAN Plankton sampler
Seabird Rosette Water Sampler SBE32

Objectives

1) To develop deployment and recovery procedures for a variety of instrumented platforms and environmental sensors, including the towed TV (RCTV), Dual Methot (DMIKT) and OCEAN plankton samplers, the CTD water sampler SBE32/911 and the port-side transducer/instrument pole.

2) To deploy and recover a "U"-mooring incorporating a Sentinel buoy and chain anchors.

3) To calibrate the RoxAnn system.

4) To develop procedures to attach, deploy and recover instruments on trawl doors and nets.

5) To develop and test software drivers for external instrumentation connected to the DAVIS-SHIP data acquisition system.

Narrative

Scientific equipment (DMIKT, transducer pole, deck-mounted net-drum, BT158 and Morgere doors) were transported to Fraserburgh on 16 March. Staff joined *Alba na Mara* during the morning of 2 April, when the DMIKT frame and one net were rigged, and the RoxAnn system installed and tested. The vessel sailed early in the afternoon to an area west of Fraserburgh where there were known hard and soft sea-bed types. The RoxAnn system was calibrated and training given to staff to record and verify sediment data.

The DMIKT plankton sampler was deployed from the central trawl wire over the stern rail. Repeated deployments and immediate recoveries were made to confirm the procedure, and then the frame was stowed. It was noted that the tow wire fouled the new CTD winch, to which a protective guard was temporarily fitted.

A T-count hanging block was suspended from the port-side crane to accommodate the new 6mm CTD wire, which was shown to be accurately metered by the block. The potential for un-even spooling on the winch barrel was noted and may be avoided by swinging the crane head fore and aft.

Alba na Mara returned to Fraserburgh during the evening to drop-off P. Copland. On Friday 3 April the DMIKT was off-loaded and further equipment loaded on board. G Slesser and D Lichtman attended for harbour deployment of the Seabird rosette water sampler. The power-supply controller was successfully connected to the sampler via the cored electric cable. Unfortunately the cored-wire winch could not be correctly aligned with the hanging block on the port-side crane, due to pipe-work fouling the ship's casing. Deployment over the stern is a previously proven alternative. The trial was stopped and the sampler off-loaded.

J Dunn and M Geldart joined the vessel to deploy a Sentinel buoy and "U"-mooring, the wire for which was loaded onto the deck-mounted net-drum. *Alba na Mara* sailed to an area in 40m of water and a procedure for launch and recovery was developed.
The port-side transducer pole was deployed with a logging accelerometer attached to the base. The vessel steamed at a variety of speeds to determine the degree of vibration in the pole with and without fore and aft stays. The centre rotating bracket was found to be corroded and required some effort to render it serviceable.

Alba na Mara returned to Fraserburgh that evening to drop-off J. Dunn and M Geldart. then sailed on Saturday 4 April to commence gear instrument trials. Weak-link assemblies were fitted ahead of and behind the trawl doors, which altered the warp attachment. However, a successful dummy run with no instruments proved that the arrangement did not unduly affect shooting or hauling the gear. Several tows were carried out to test fitting and removal of load-cells and a ground-gear accelerometer. Finally a test simulating the breakage of a weak-link proved that the gear was still recoverable, though additional tie-offs for gear components had to be introduced. Part of the process involved working above head-height as the net dropped from the net-drum. In future this operation should be carried out at deck-level by stopping-off the net.

The OCEAN plankton sampler was deployed, towed and recovered, using the central winch. Further trials of the net-collecting system on the OCEAN sampler were carried out in the deep waters of the Southern Trench, in preparation for cruises later in 2009. The 20mm centre wire is larger than would normally be used for this size of sampler, and the winch controls – which were not designed to be used while towing the sampler - may be difficult to operate for repeated deployments. A 12mm wire on the deck-mounted net-drum may be a more practical alternative.

The RCTV was then connected to the 600m umbilical cable and launch and recovery procedures established. Repeated tows were made to test the TV winch controls and the spooling gear set-up parameters. Data from the Sodena scientific navigation plotter in the dry-lab were recorded for integration with the DAVIS-SHIP data acquisition system, and the Galleon GPS RF synchroniser was successfully tested.

Procedures for the deployment and recovery of all the test equipment will be documented and made available for future cruises

Alba na Mara returned to Fraserburgh during the afternoon of 5 April, then equipment was offloaded on 6 April 2009 and staff returned to Aberdeen

Seen in draft
A Nicol

C Hall
7 April 2009.