

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD  
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, NR33 0HT, ENGLAND

1994 RESEARCH VESSEL

REPORT : RV CORYSTES : CRUISE 12

STAFF:

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DURATION:

13 October - 20 October

LOCALITY:

Holderness Coast, North Sea

AIMS:

1. To deploy the Tetrapod and Quadrapod off the Holderness coast (AE0207A0).
2. To conduct test deployments of the Minipods (AE0207A0).
3. To deploy a line of 5 Minipods perpendicular to the Holderness Coast (AE0207A0).
4. To conduct a survey of the Holderness and Humber area with the Scanfish, ADCP and Roxann (AE0207A0)
5. To deploy the NERC STABLE (near bed velocity package) on the Holderness Coast.

ADDITIONAL AIM :

- 6a Evaluate Nautronics Acoustic Tracking System (ATS) on Sidescan and Minipod deployments.
- 6b Test prototype Gear marking tag
- 6c Trial the Satcom-C satellite communications system and Argos Radio direction finding system.

NARRATIVE (all times are GMT):

RV Corystes sailed on the 1630 tide on the 13th and proceeded to the Holderness Coast.

During the morning of the 14th a Day Grab and TV survey was carried on a line of stations along the northern line of equipment (see Fig. 1). After anchoring and further TV stations, STABLE and its associated Guard Spar Buoy were deployed.

Early on the 15th, after checking the proposed Tetrapod and Quadrapod site with the TV camera, RV Corystes anchored. The Tetrapod and Quadrapod were then deployed and a Guard Buoy deployed before darkness fell.

A further two Guard Buoys were deployed at first light on the 16th with a Sidescan survey until the early PM. RV Corystes then proceeded to Immingham to load further Gear (5 Minipods and 4 Guard Buoys).

A repeat Day Grab and TV survey along the Southern line was undertaken during the morning of the 17th. Four Minipods were constructed and tested on deck. Two Minipods were then deployed on a test site for further tests overnight. A further Minipod was tested on a wire off the port gantry. An acoustic tracking transponder was attached to the Minipod and used to test the ATS system for range and accuracy whilst drifting away from the mooring. Trials were then performed on the Gear marking tag using the SM600 scanning sonar and Argos RDF with a tethered Argos Buoy.

The two Minipods were recovered during the morning of the 18th, serviced and deployed on positions B and C. Two further Minipods were deployed on positions D and E. During the afternoon one Guard Buoy was laid at B but while deploying the Guard Buoy at C the wire was caught by the Corystes rudder. The top of the mooring was eventually cut away and the rudder freed.

The last three Guard Buoys (C, D and E) were deployed during the morning of the 19th and a Sidescan survey undertaken along the southern line of equipment, finishing at 1500.

RV Corystes then sailed for Lowestoft and docked on the 0930 tide on the 20th October.

## RESULTS:

1. Tetrapod and Quadrapod were deployed at position L ( $53^{\circ} 50.863' N 0^{\circ} 09.562' E$ ) for a 60 day deployment. BASS (Benthic Acoustic Stress Sensor) was installed on the Tetrapod. The Quadrapod consists of 14 syringes for suspended sediments taking samples from 3 heights above the seabed. The sideways looking ABS (Acoustic Backscatter Sensor) exhibited power supply malfunctions in ship lab tests and it was decided not to deploy.
2. The new Minipods were commissioned in a series of trials. Two Minipods were deployed for approximately 12 hours whilst a third was tested on a wire hanging from the ship.
3. Four Minipods were deployed along a line perpendicular to the coast (B, C, D and E). The fifth Minipod was not deployed because i) the proposed position was too shallow for RV Corystes and ii) the Acoustic Release on Minipod Number 5 failed to respond to commands.

4. A Scanfish, ADCP and Roxann survey of the Holderness and Humber region was not conducted because of time constraints and poor weather. However a Sidescan survey of the area was completed and showed the area to be more rocky than expected. Tracks are shown in Fig. 2.
5. The area around the proposed STABLE II (Sediment Transport And Boundary Layer Equipment) site proved to be too rocky and STABLE was deployed on a site further offshore on an area of sands and gravels ( $53^{\circ} 49.432' N 0^{\circ} 06.975' E$ ). It is fitted with sensors to measure tidal and wave induced currents and pressures, and optical and acoustic backscatter sensors to measure suspended sediment concentrations. Rapidly changing phenomena are logged at 8 Hz for 20 minutes every hour and slowly changing phenomena are logged once per minute.
6. The ATS system performed reliably on all deployments and in various sea states from smooth to rough. It was used to track the Camera frame, Sidescan Sonar and a Minipod where maximum range obtained was 3500 metres. The 35 kHz Gear marking tag did not perform to expectation and showed a weak transmission which needs further investigation. The Argos Radio direction finding system locked onto various standard marine transmissions but was unable to lock onto the short bursts received from the Argos buoy. The ship's Satcom-C system received regular updates of Argos positions including those of the test buoy. These and various test messages were sent via Satcom-C to BT at Goonhilly and directly on to the laboratory.

J M Rees, SIC  
20 October 1994

SEEN IN DRAFT: M Willcock

INITIALLED: RRD, RG, SFM

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