

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

1994 RESEARCH VESSEL

REPORT : RV CORYSTES : CRUISE 15

STAFF:

- J M Rees (SIC)
- N D Pearson
- J W Read
- N J Faber
- P B Murray (UC)
- M Mason (UC)
- J Humphery (POL)
- J A Taylor (UEA)

DURATION:

15 - 21 December

LOCALITY:

Holderness Coast, North Sea

AIMS:

1. To recover the Tetrapod, Quadrapod and STABLE from off the Holderness Coast (AE0207A0).
2. To recover a line of 4 Minipods Perpendicular to the Holderness Coast (AE0207A0).
3. To conduct a survey of the Holderness coast and Humber area with the Sidescan, ADCP and Roxann (AE0207A0).
4. To deploy a Minipod for a six week deployment on Race Bank, North Norfolk (AE0298D0).

NARRATIVE (all times are GMT):

RV Corystes sailed on the 1930 tide on the 15th and proceeded to the Holderness Coast.

During the morning of the 16th the northern guard buoy and Quadrapod were recovered. The mooring line of the Quadrapod showed signs of damage from local shipping. No mooring line from the Tetrapod was present. The acoustic release on the Tetrapod was woken up successfully but did not release when commanded. A variety of distance and bearings were tried but without success. During the afternoon STABLE II (Sediment Transport And Boundary Layer Equipment) and its guard spar

buoy were recovered. The spar buoy was cut in two and showed large propeller marks. The outer two Minipods (E and D) and guard buoys were then recovered.

A further two Minipods (C and B) and guard buoys were recovered at first light on the 17th. Large sediment samples were then obtained at the 3 Minipod, STABLE and Quadrapod sites for calibration of the various suspended load sensors.

The remaining grab site was undertaken on the morning of the 18th followed by TV stations at the grab sites. An extensive survey of the Tetrapod site using the Simrad SM600 sonar and the transponder on the Tetrapod was conducted in the afternoon as the timer pop-up marker failed to operate. A dahn with a heavy anchor was used to mark the Tetrapod position for the divers. A POL (Proudman Oceanographic Laboratory) meteorological buoy was found to be upside down and was flipped into its correct orientation.

As the weather forecast for the following day did not look promising the divers cancelled for the following day. RV Corystes sailed overnight to Race Bank.

At first light Corystes moved onto Race Bank and deployed an up-rated Minipod (with 4 Syringes) and two guard buoys at $53^{\circ} 15.960' N$, $00^{\circ} 47.560' E$ for a 30 day deployment (recovery by Cirolana 1/95). Range trials using the SM600 sonar, the MORS acoustic release and Sextant were undertaken.

RV Corystes then sailed north to the Tetrapod site. After making contact with the divers on the 20th an hour before slack tide, the diving boat surveyed the area around the Tetrapod dahn and located it a few metres away from the anchor of the dahn. The divers proceeded down the line, searched but failed to find the Tetrapod. The dive boat then snagged the Tetrapod with an anchor and line but divers could not go down again due to the strong tide (near Springs). The line was left on the surface and a recovery by Corystes was attempted but became unsnagged. The northern guard buoy was then replaced before leaving the site.

Divers will attempt to shackle a recovery line into the Tetrapod on the slack tide of the 21st or 22nd.

RV Corystes then sailed for Lowestoft and docked on the 1030 tide on the 21 st December.

RESULTS:

1. Tetrapod was not recovered due to loss of the surface markers, failure of backup acoustic release and failure of the timed pop up marker. Quadrapod was recovered from a 60 day deployment. Roll and pitch sensors show that the Quadrapod turned over after only 12 days causing one of the legs to be bent. Measurements of significant wave height, Hsig (Fig 1.) indicate little wave activity at this time. Along with the loss of two of the surface buffs these factors suggest that the Quadrapod was dragged by a ship. The conditional Hsig of 250 cm was exceeded 3 times prior to the Quadrapod falling over and during these foreground events, 2 banks of syringes were fired. All 14 samples were successfully collected. Three of the electronic compartments flooded. The Booner tube collected three suspended sediment samples which will be used for

grain size analysis and possibly (when combined with the Minipod Booner tube samples) calibration of the MOBS.

The stainless steel components on both the Booner tubes and the Syringe Samplers were subject to severe crevice corrosion.

STABLE II was recovered without damage. The frame and instrument tubes were covered in a fine layer of sediment which was difficult to wash off. Some corrosion-damage was evident to stainless steel securing-screws and to one of the end-caps - this behaviour has been noted before in East-coast waters. The apparatus was otherwise in very good condition. The damage to the spar-buoy meant that the rig and mooring were recovered from the rig-marker buoy end; this demonstrates the value of two recovery options.

The Tetrapod and STABLE sites appear to be on a route between Spurn Point and Flamborough Head regularly used by shipping.

2. The line of Minipods perpendicular to the Holderness Coast was recovered. Initial results show that all 4 Minipod operated for approximately 5 weeks until the hard disks of their loggers were full. One of the Minipods (Deployment 100 at Position E) was either dragged or fell over during the deployment as shown in Fig 2.
3. No Sidescan, ADCP or Roxann surveys were undertaken due to weather and time constraints.
4. A Minipod with 4 Syringes and 2 guard buoys were successfully deployed on Race Bank.

J M Rees, SIC
21 December 1994

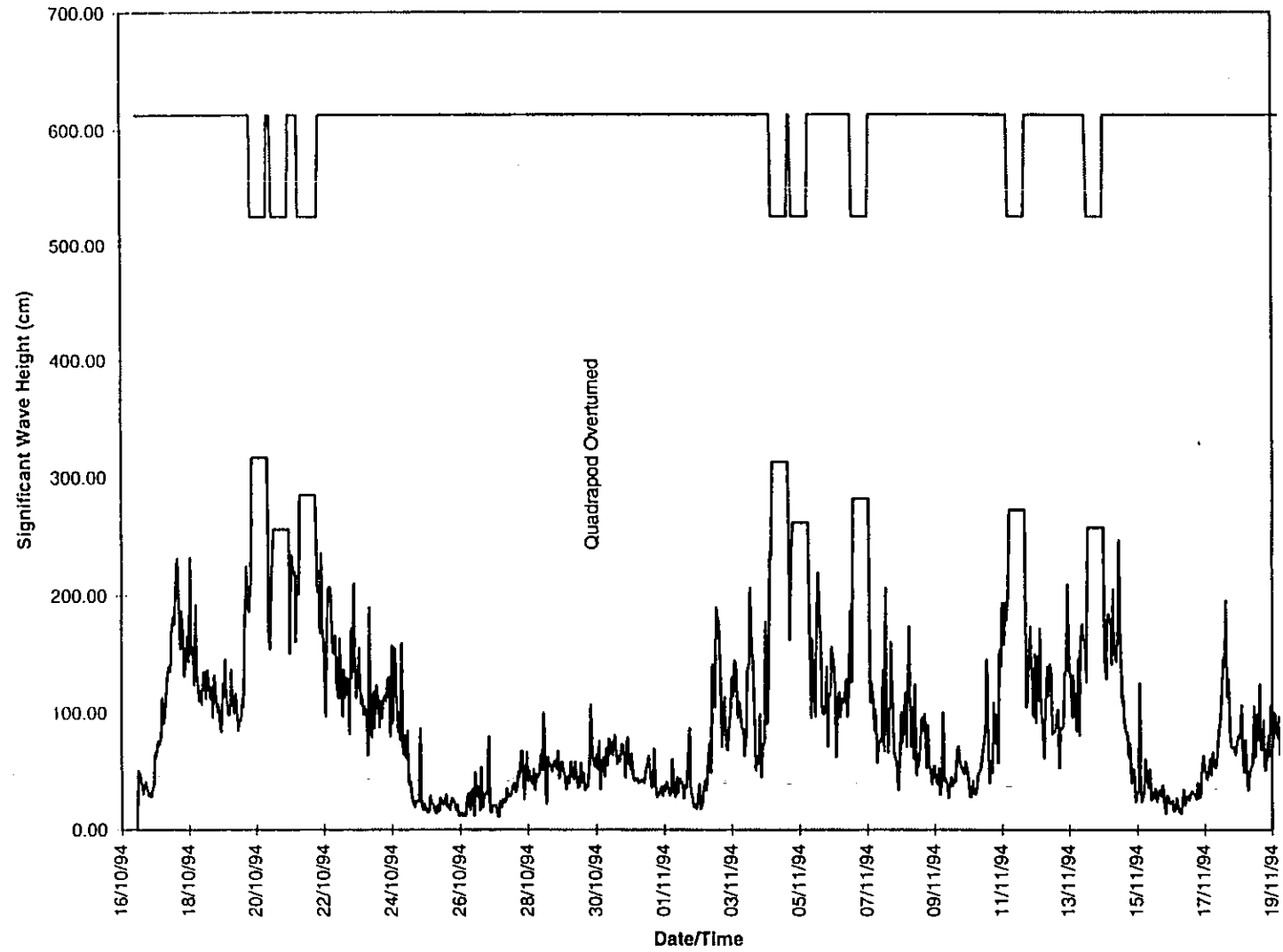
SEEN IN DRAFT

INITIALLED: JH JEP

DISTRIBUTION:

Basic List +
Staff Members
RR Dickson
George Traves

Time Series of Significant Wave Height for Quadrapod Deployment Showing Adaptive Sampling Periods.
Courtesy of Bullard Labs Univ. Cambridge



Minipod 100 - Pos E - Tidal Variations

