

PROVISIONAL CRUISE REPORT

VESSEL: MV WESSEX EXPLORER (Wessex Water Authority)

CRUISE PERIOD: 15-20 March 1981

PERSONNEL:

Dr A D Heathershaw (Senior Scientist)	15-20 March
Mrs D J Corns	15-17 and 19-20 March
Mr A A Read	15-17 March
Mr P M Hooper	15-17 March
Mr D N Langhorne	18-20 March
Mr E J Moore (Diving Officer)	18-20 March
Mr B M Norman	18-20 March
Mr A J Marks	18-20 March
Mr P Bird	18-20 March

OBJECTIVES:

In connection with a study of the mobility of sea-bed gravels in the W Solent area (DOE Commission, Project No S26) to carry out the following:

(a) routine sediment sampling at various locations (see attached copy of Admiralty Chart L(DI) 2040) to establish possible relationships between bedforms and gravel characteristics;

(b) at selected sites to carry out comparisons of Shipek grab samples and those obtained by divers.

PROCEDURE AND METHODS:

Following echo sounding and sidescan sonar observations of gravel wave bedforms in the W Solent in January 1981, routine sediment sampling was carried out in the survey area using a Shipek grab operated from a gantry on the stern of the 'Wessex Explorer'. Position fixing was accomplished using a Decca Trisponder system with units set up on the end of Yarmouth Pier and the Royal Lymington Yacht Club staging at the entrance to the Lymington River. The receiver on the boat was mounted within approximately 1.5 m of the gantry.

At selected sites comparisons were made between samples collected by divers and those obtained with the Shipek grab. For this work the ship was anchored about 1 hour before slack water. Five closely spaced grab samples were then taken and a sinker and marker buoy dropped in the immediate vicinity of these samples. The ship then weighed anchor and on the slack water sediment samples were collected by divers swimming down a rope to the sinker weight. At each site a total of five diver samples were collected with a small plastic scoop and each sample placed in a plastic bag before being brought to the surface. The scoop volume was similar to that of the Shipek grab although the scoop gave greater penetration into the sediments.

EQUIPMENT PERFORMANCE:

All sediment sampling and position fixing equipment operated satisfactorily although in some cases several attempts were needed to obtain a good sample with the Shipek grab. No difficulty was experienced with the diving operations or with any of the diving equipment.

RESULTS:

A total of 167 sediment samples were obtained in the survey area of which 17 were collected by divers. Initial results suggest that there may be some correlation between sediment size and bedforms with coarse gravel deposits being associated with large bedforms and smaller to medium size gravels being found on the smaller gravel waves.

The diver samples showed very clearly that the sea-bed in this area was armoured by a layer of gravel overlying a more erodable fine to coarse sand substrate. In general the diver samples showed a much higher proportion of fine sediments than the grab samples although the latter, presumably taking a surface skim, probably gave a reasonable sample of the gravel size particles on the bed.

Both grab and diver samples demonstrated the importance of organic growths on the sediments which in some cases cemented the gravel particles on the surface together thereby increasing its armouring potential. The organic growths appear to be restricted to an area of short wavelength bedforms.

ITINERARY:

Sunday 15 March Travel to Lyminster. Set up equipment on 'Wessex Explorer'.

Monday 16 March Sailed 0800. Set up Trisponder units on Yarmouth Pier and Lyminster Yacht Club staging. Commenced sediment sampling. Berthed Lyminster 1800.

Tuesday 17 March Sailed 0830. Continued sediment sampling. Berthed Lyminster 1600.

Wednesday, 18 March Unloaded sediment samples. Set up diving equipment. Sailed 1215 for diver and grab sampling stations. Berthed Lyminster 1715.

Thursday 19 March Sailed 0800. Steering gear failure on ship. Proceeded to Cowes for repairs. Sailed Cowes 1200 for Yarmouth Roads and continued diver and grab sampling programme. Berthed Lyminster 1800.

Friday 20 March Sailed 0810. Continued diver and grab sampling. Removed Trisponder units from Yarmouth Pier and Lymington Yacht Club staging. Returned Lymington 1230. Unloaded equipment and samples and returned to Taunton.

PREPARED BY:

A D Heathershaw

(A D HEATHERSHAW)

APPROVED BY:

K R Dyer

(K R DYER)

DATE:

24 MARCH 1981

