

VESSEL: R.R.S. John Murray

CRUISE PERIOD: 24 June - 7 July 1980

PERSONNEL: D N Langhorne SSO (Senior Scientist)
A P Salkield SSO (24 - 26 June)
A J Marks SSO
E J Moore PTO III
J D Humphery HSO
P M Hooper HSO
N Dillon ASO
B Norman ASO

ITINERARY: 24 June 1400 Sailed from Barry. On passage.
25 June 0900 Anchored in Falmouth Bay for trials with underwater camera system and comparative trials with IOS(T) (Tecmatic TC 125) and AUWE (low light) underwater T.V. systems.
1815 Sailed for Weymouth Bay.
26 June 0730 Arrived off Weymouth. Landed A Marks to return camera flash unit to UMEL. P Hooper, N Dillon and B Norman joined ship. Collected T.V. lighting system from AUWE Portland.
1030 - 1830 Seismic survey off Adamant Shoal and East Shambles Bank areas (equipment: ORE Pinger, Hunttec ED10 Boomer, 500 joules Sparker, EG and G Sonar, Simrad Echosounder. Position fixing by Navigational Decca).
1930 Anchored in Weymouth Bay. Landed A P Salkield. A J Marks rejoined the ship.
27 June 0800 - 1300 Underwater T.V. Sonar and Grab sample evaluation of sediment grain size in areas off Adamant Shoal and Shambles Bank.
1300 Sailed for area 5 miles to South of Anvil Point to evaluate gravel areas.
1945 Anchored off Poole
28 June 0600 Off Dolphin Sands for grab sampling. Attempts abandoned because of sea conditions (Wind force 6 - 7 south-westerly). Proceeded to the West Solent.
0830 - 1250 Seismic survey in West Solent.
1330 - 1515 Grab sampling.
1600 - 2230 Deployed current meter, underwater camera system and T.V.
29 June 0811 Recovered current meter system. Sailed for Dolphin Sands.
0940 - 1300 Seismic survey around Dolphin Sands.
1320 - 1400 Grab sampling
1420 Anchored to South of Bank and deployed current meter, underwater camera and T.V.
2320 Recovered cameras. Sailed for East Solent.

- 30 June 0750 - 1140 Seismic survey in Nab to Hayling Bay area.
 1245 - 1310 Grab sampling.
 1340 - 2145 Deployed current meters (U₁₀₀ and mid depth) and camera systems.
- 1 July 0900 - 1430 Seismic survey in Nab - Selsey Bill area (Wind force 6 North-westerly)
 1500 - 1730 On passage to West Solent.
 1800 - 2400 Deployed current meters and camera systems in West Solent gravel area.
- 2 July 0730 Land P M Hooper at Yarmouth.
 0820 Recovered current meter.
 1037 Deployed current meter on North side of West Solent channel.
 1100 - 1630 Grab sampling in West Solent.
 1830 Recovered current meter on South side of channel to clear weed.
 1920 - 2130 Deployed camera systems.
- 3 July 0800 Recovered 2 current meters. Sailed for Hayling Bay area.
 1120 - 1700 Diving inspection of dredger suction hole in gravel area.
 1750 Anchored off Bembridge Ledge.
- 4 July 0750 Sailed from Bembridge Ledge.
 0940 - 1740 Seismic and sonar survey between Selsey Bill and off Brighton.
 1830 - 2000 Deployed current meters and camera system in dredging area off Brighton.
- 5 July 0800 - 1100 Deployed camera systems in dredging area.
 1130 Recovered current meter. Sailed for East Solent.
 1500 DNL, EJM, AJM and JDH landed at Portsmouth by contract launch. ND and BN sailed on passage for Barry.
- 6 July On passage.
 2400 Arrived Barry.

OBJECTIVE:

To evaluate known gravel areas in the English Channel for their suitability for detailed studies of gravel mobility under tidal flow and surface wave conditions.

PROCEDURE AND METHOD:

- a) Bathymetric and seismic surveys to determine the extent and thickness of gravel deposits.
- b) Sea bed sampling to determine the sediment grain size and also, ground truth interpretation of sonar records.
- c) Underwater T.V., time lapse photography and self-recording current meters to make preliminary studies of gravel mobility and threshold velocities of movement.

EQUIPMENT AND PERFORMANCE:

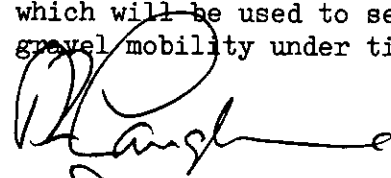
- a) Underwater photography (UMEL Camera system).
 During the equipment trials on 25 June the flash unit failed due to ingress of water. The unit was returned to UMEL and a replacement obtained.

- b) Sub-bottom profiling:
 - i) Huntac ED 10 Boomer - poor records due to excessive ship's noise.
 - ii) ORE Pinger - reasonable records obtained in surface layers only.
 - iii) 500 Joule Sparker - good penetration (up to 60mm) obtained, but with poor resolution.
- c) EG and G Sidescan Sonar - good.
- d) Underwater T.V.
 - i) AUWE system - good
 - ii) IOS (T) (TEC 125) - good when no sediment was moving, but it rapidly lost resolution once sediment started to move.
- e) Flow measurement: 2 Anderaa self-recording current meters. The instruments proved to be reliable but were inhibited by weed fouling.
- f) Sediment sampling - The Shipek grab proved to be effective for sampling gravel.

RESULTS:

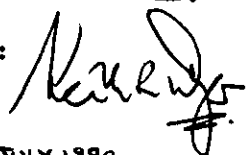
The existence and potential mobility of gravel was evaluated in the following areas:
 Weymouth Bay (Adamant Shoal and Shambles Bank) off Anvil Point, Dolphin Sands, West Solent, Nab to Hayling Island area, Selsey Bill to Brighton area. Comprehensive data was obtained which will be used to select areas for detailed studies of gravel mobility under tide and wave conditions.

PREPARED BY:



D N LANGHORNE

APPROVED BY:



K R DYER

DATE: 15 JULY 1980