IOS FIELD EXPERIMENT REPORT

VESSEL USED: Launch 'Sandpebbler' and inflatable

LOCATION OF WORK: Morte Bay, Woolacombe, N Devon

PERIOD: 25 February - 2 March 1983

PERSONNEL:

A P Carr (Principal Scientist)	) Field party
M W L Blackley	) and
J Codd	) survey
P J Hardcastle	) Instrumentation
G P Le Good	) Engineers
E J Moore (Coxswain)	) Boat
B Wainwright	) Party
B Norman	Inflatable
A J Marks	) Diving
L Whitlock (Wormley)	) Team
D Joyce	Lorry

OBJECTIVES: The programme was designed to deploy such additional measuring and recording equipment as are necessary for the first fieldwork phase of the Wave Set-up project (S36). This involved

a) further cables from the existing hut in the dunes, down the dune face and thence under the beach surface to -
   i) a pair of Druck pore water pressure transducers at approximately 180m seawards of the dune face and arranged approximately 85m N and S of the existing array.
   ii) 2 transducers (1 Digiquartz + 1 IOS/FM) mounted on low profile tripod rigs some 700m seawards of the dune face (some 200m seawards of LWMST)
b) substitution of the existing 180m Druck transducer by a Digiquartz absolute transducer.
c) removal of the upper (30m and 80m) Druck transducers, the cables of which had been damaged, probably by people with metal detectors. (To be replaced in due course)
d) installation of new logging equipment in the dune hut.
e) carry out routine topographic survey, and determine height and position of rigs, marker buoys and beach transducers using trisponder, EDM and Ni025 level

PROCEDURE AND METHODS:

The launch Sandpebbler was based in the harbour, Ilfracombe. All methods were standard and do not require explanation apart from the deployment of the cables. The 2 x 1000m (nominal) armoured cable was wound on drums placed on the platform of the lorry, the tripods being attached at the free ends of the cables. On 26 February the tripods were placed in the back of the Land Rover and the latter vehicle driven 750m along the beach, distances predetermined by the EDM. Cable was then sawn through, the tripod taken to near low water mark and the remainder of the cable, except for 50m required for the route up the dune face as far as the recording hut, arranged in bights up and down the beach. Divers carried the tripod through the breaker zone to the inflatable and ultimately to the launch. The launch then took up the slack in the cable and deployed the rig at the nominal position (Rig 1 with Digiquartz transducer)

The procedure was repeated but with rapidly worsening conditions and rising tide no attempt could be made to position the second rig (IOS/FM transducer) accurately.

It was not possible to continue the offshore work until 1 March. However on 27 February the remaining transverse cable was installed and the transducers and necessary connections made to it. The defective Druck transducers at 30m and 80m were exhumed by means of the JCB which had been used to bury all cables within the beach at a depth of $\sim$ 0.5m.

On 28 February the logging equipment was installed in the hut and the monthly routine survey carried out. The shore party returned to IOS(T) except APC.

Conditions improved on 1 March and it became possible to re-commence positioning the nearshore rigs. Both were found buried up to about 10cm from the tripod apex. Since Rig 1 was in approximately the designated position it was decided to leave this rig and concentrate attention onto Rig 2. By attaching a line to Rig 2 and 'worrying' it with the inflatable it eventually proved possible to free it from the sea bed and to site it close to the nominal coordinates.

Although the Rangemaster system had been taken as a means of spacing the rigs the requisite distance apart it was not necessary to use it. Conditions were such that the EDM could easily pick up the target prism held above the rig and the spacing between rigs rapidly be resolved and adjusted to the optimum feasible.

Coordinates for the rigs and a marker buoy were computed using both the Trisponder microwave system and the EDM.

Apart from the inflatable (collected 3 March) all remaining personnel and equipment returned to IOS(T) on 2 March.

EQUIPMENT PERFORMANCE:

There were no problems with any of the equipment.

RESULTS:

a) The nearshore rigs were deployed satisfactorily.
b) The transverse line of transducers was installed. Because the cable length proved to be less than specified the spacing of the transducers in this line ended up at approximately 2 x 85m apart rather than the 2 x 100m planned.
c) The logging equipment showed that both offshore rigs and 2 of the 180m line were operating satisfactorily when left. However, it was decided not to log any data until the whole network was completed.
d) All survey work was completed except for absolute calibrations on the nearshore rig transducers.

ITINERARY:

Not applicable

STATION LIST:

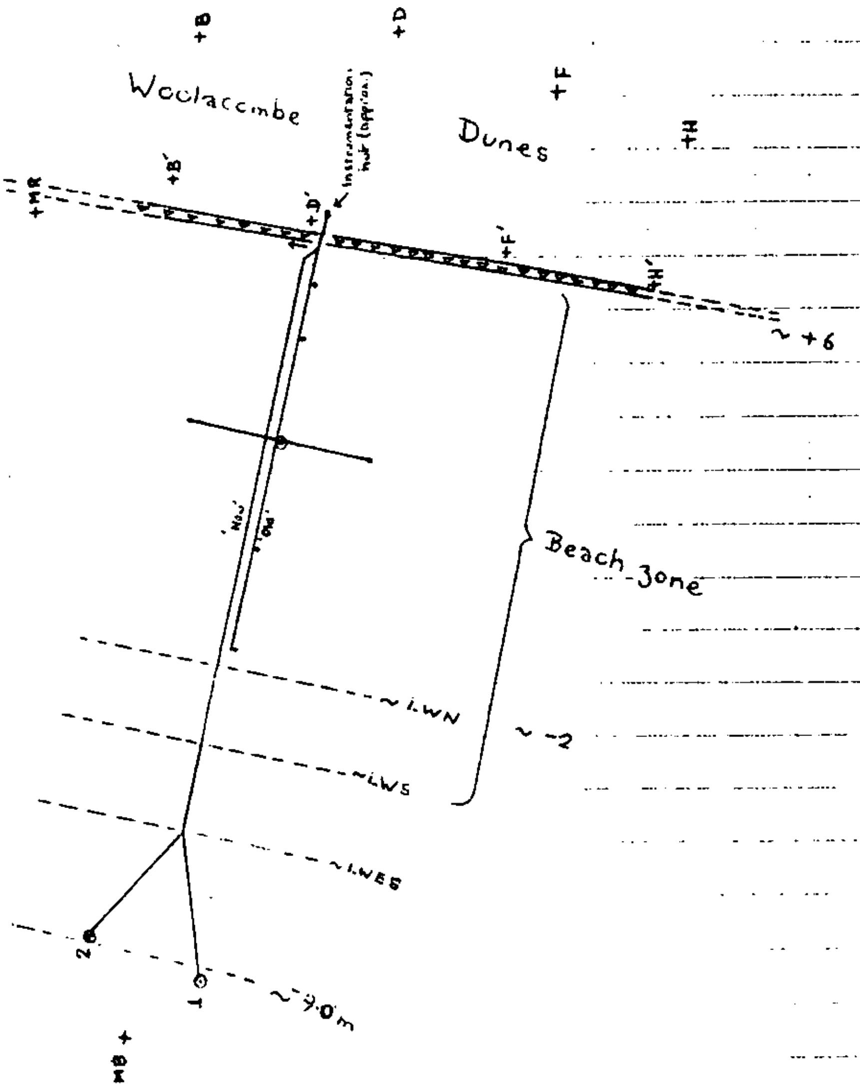
The deployed positions are as follows:

		National Grid	Latitude	Longitude
Marker Buoy	East	(2)44774	51° 09' 54"N	4° 13' 09"W
	North	(1)43042		
Tripod Rig 1	East	(2)44826	51° 09' 52"N	4° 13' 07"W
	North	(1)42971		
Tripod Rig 2	East	(2)44867	51° 09' 55"N	4° 13' 05"W
	North	(1)43075		

REPORT PREPARED BY	A P Carr
APPROVED BY	K R Dyer
DATE	8 March 1983

Woolacombe Instrumentation

Deployment



← Line of posts

MR = Mill Rocks Δ + BM (inner pipe CL)

B → H = Concrete blocks Δ + BM

B' → H' = Principal seaward posts Δ + BM

• transducers • Druck

⊙ Digiquartz

⊗ IOS/Em

'Old' Original cable run for beach water table

'New' 3/93 Cable for Wave Setup project

▽ Dune face

MB = Marker buoy

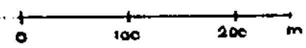
1 + 2 = 'Offshore' rigs

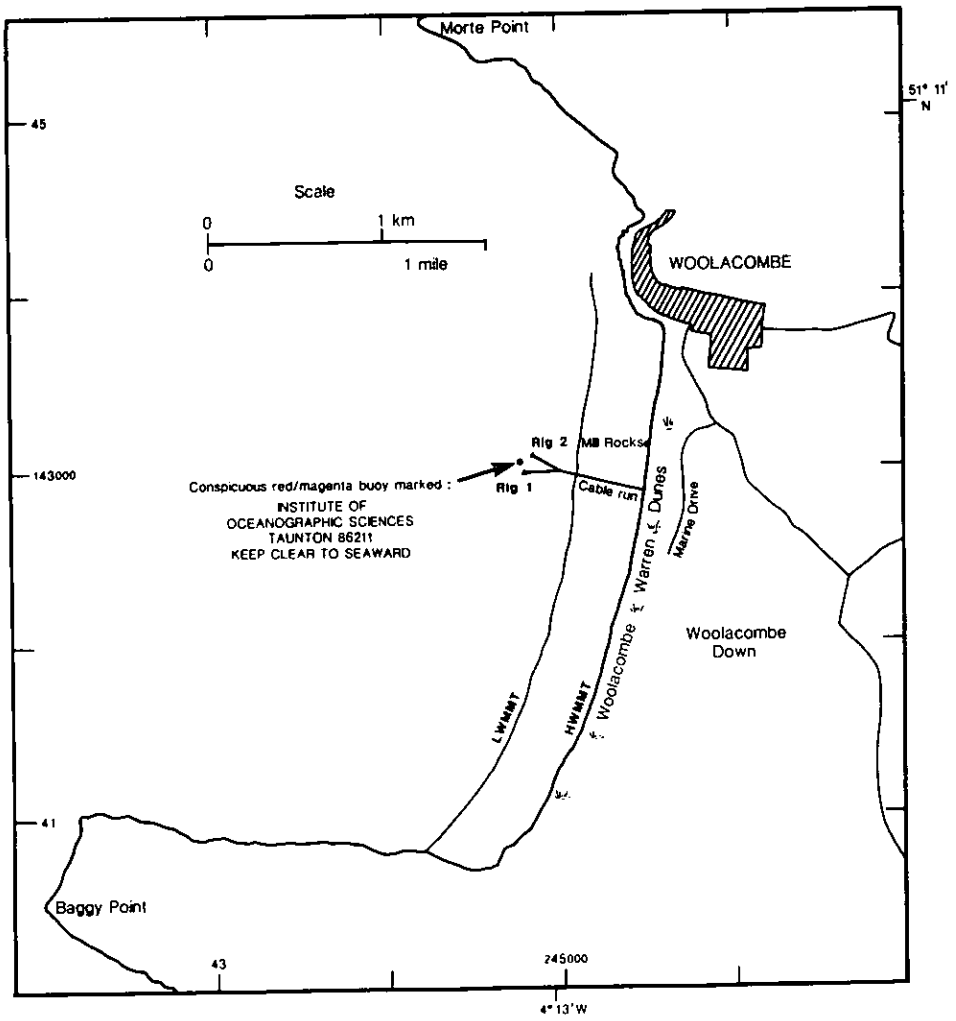
LWES = Low water extreme spring tides

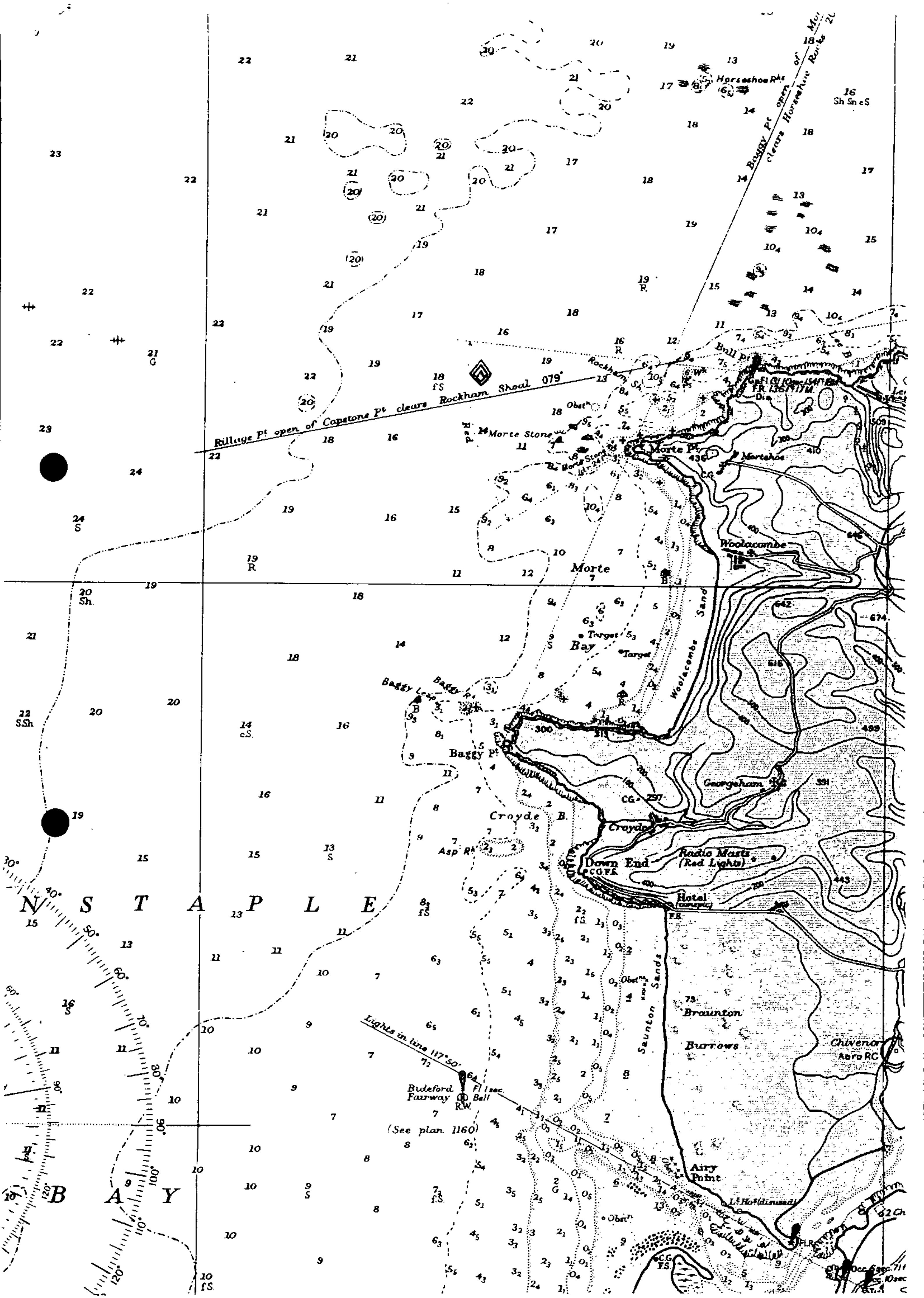
Heights are ground level (m)
not transducer &
relate to O.D.

[O.D is 4.8 m above CD]

Rigs covered by minimum of ~ 4 m SWL




Morte Point
51° 11' N
45
Scale
0
1 km
0
1 mile
WOOLACOMBE
Rig 2
Mill Rocks
143000
Conspicuous red/magenta buoy marked :
Rig 1
Cable run
INSTITUTE OF
OCEANOGRAPHIC SCIENCES
TAUNTON 86211
KEEP CLEAR TO SEAWARD
Marine Drive
Woolacombe & Warren & Dunes
Woolacombe
Down
LWMMT
HWMMT
41
Baggy Point
43
245000
4° 13' W



Horseshoe Rks
Baggy Pt open of Morte clears Horseshoe Rocks
Rillage Pt open of Capstone Pt clears Rockham Shoal 079°
Rockham Sh.
Bull Pt
Morte Stone
Morte Pt
Mortehoe
Woolacombe
Morte
Bay
Target
Woolacombe Sand
Baggy Leap
Baggy Rk
Baggy Pt
Georgeham
Croyde B.
Croyde
Asp Rk
Down End
Radio Masts (Red Lights)
Hotel
Saunton Sands
Braunton
Burrows
Chivenor
Aero RC
Lights in line 117°50'
Bideford Fairway
Fl 1sec. Bell
R.W.
(See plan 1160)
Airy Point
Lt Hot (disused)
B A R N S T A P L E
B A Y