Natural Environment Research Council

Institute of Oceanographic Sciences
Crossway, Taunton, Somerset. TA1 2DW

PROVISIONAL CRUISE REPORT

VESSEL: Reul na Maidne

OWNER: D B MacLeod
Oiteag Na Mara
Bruernish
Barra
Outer Hebrides
Scotland

Tel: North Bay (08715) 384

LOCATION: All Waverider sites to west of South Uist, Hebrides, Scotland.

CRUISE PERIOD: 0900 on 1 August 1981 to 1130 on 2 August 1981.

PERSONNEL:

J D Humphery	HSO	Senior Scientist
R Gleason	HSO	
B M Norman	ASO	

OBJECTIVES: To recover Waverider buoys and moorings if possible, from the Deepwater, Offshore and Inshore III positions to the West of South Uist. To deploy three replacement Waveriders on new moorings in the same positions. To perform an echo sounder survey between and around the Inshore positions I and II, as time and conditions permit.

PROCEDURES AND METHODS: Met D B Macleod at his home to collect 1 ton of anchor chain left there after the previous visit. Drove to Castlebay jetty, met the other crew on the Reul na Maidne at 0900. Tide was high, loaded the smaller equipment by hand; used the jilson to load the Waveriders and other heavy gear. Reeled 75 m x 13 mm wire for offshore mooring recovery onto starboard winch-drum, with 115 kg grapnel shackled to end. Reeled 75 m x 13 mm wire for offshore mooring deployment onto port winch-drum, with 1 ton of anchor chain shackled to end on chain strop. Sailed for deepwater site at approximately 1030, via Sound of Vatersay.

Arrived at deepwater site at approximately 1400. Waverider (deployed 11.8.80) appeared in good condition, but had lost rubber fender. Lifted buoy onto deck using jilson, recovered rubbercord by hand, and 200 m of rope using winch. Recovered anchor and chain by "stopping off", and using jilson.

New deepwater mooring had been prepared on the port side-deck while steaming to site. Anchor and chain were paid out on the 200 m rope and lowered to the bottom on the winch; (anchor could be deployed first as the mooring is approximately twice as long as the water depth). Some tension was maintained to pull the chain out straight and then the buoy was lowered over the side by hand. Position, depth and time were noted.

PROCEDURE AND METHODS: (Contd)

While steaming to the offshore site, the new offshore mooring was made up and laid out on deck. Came alongside offshore Waverider - appeared in good condition (deployed 25.4.81). Recovered buoy on jilson and rubbercord by hand. Marked rope with A4 Polyform buoy, and unshackled rope from rubbercord and allowed it to drop free. Paid out 75 m recovery wire and grapnel, and approximately 150 m trawl warp, while steaming round marker. Stopped the ship and hauled on the winch - grapnel caught riser chain at first attempt - lifted sub-surface float onto deck with jilson. Recovered chain and anchor by stopping off and using jilson.

Lowered replacement offshore buoy over side by hand, paid out rubbercord and rope. Dropped sub-surface float over side and paid out riser chain, ensuring that mooring did not twist. Lowered anchor weight to bottom on 75 m wire; when weight on bottom, moved clear and cut wire, allowing it to drop free. Noted depth, position and time. Steamed for Inshore III position, making up inshore mooring on deck.

Arrived alongside inshore buoy, which was in good condition (deployed 1.3.81). Recovered buoy and rubbercord on deck using jilson and winch. Hooked buoyant chain from the water using the jilson, and recovered the 50 m length by stopping off and using the jilson.

Lowered replacement buoy over side by hand, paid out rubbercord. Paid out buoyant chain, allowing it to fall free. Lowered anchor to bottom on a long bight in 18 mm rope, pulling the end free and recovering the rope when anchor on bottom. Noted position, depth and time.

Colour (negative) photographs of interesting biological growth on all buoys and moorings were taken immediately after recovery, for use by SMBA, Dunstaffnage.

Proceeded to Inshore II position. Commenced echo sounder survey of area between and around Inshore II and Inshore I positions. Conditions good. Engine speed - 700 rpm.

Proceeded to Castlebay via Sound of Sandray, arriving alongside 0130 on 2 August.

Rendezvous with D B MacLeod and crew at the Reul na Maidne at Castlebay at 0900, taking advantage of the high tide. Unloaded the light equipment by hand, used the jilson for the heavy gear and the buoys. Loaded van. Took some items of heavy gear to D B MacLeod's home for his retention until the next deployment (1 ton anchor clump, chain and 2 x 112 lb fisherman's anchors).

WEATHER:

A good weather forecast (NW-NE 3) was obtained from Prestwick meteorological office on the evening of 31 July. The 1 August dawned fair, wind N, 2. During the day, wind was very variable, N-SW, generally force 2, but increasing force 3 during occasional

showers. Sea was slight (50 cm max) with a low underlying swell ($\sim$ 70 cm max) which decreased to virtually nothing during the day. Ship motion while surveying was probably less than .5 m.

EQUIPMENT PERFORMANCE: The Waveriders had been prepared and tested prior to leaving IOS(T). They were energised and sealed on deck before going out of the Sound of Vatersay, and emission tested with an absorption wavemeter. Moorings were made up and flaked out on deck from components brought from IOS(T).

The Furuno radar, Decca navigator and Furuno echo sounder on board the Reul na Maidne all worked well, as did all deck equipment.

ITINERARY:

1.8.81	0830	Collect chain anchor from D B MacLeod.
	0900	Rendezvous with Reul na Maidne at Castlebay.
	1030	Sailed for Deepwater site via Sound of Vatersay.
	1400	Alongside Deepwater Waverider - recovered buoy.
	1415	Deployed replacement Deepwater Waverider.
	1550	Alongside Offshore Waverider - recovered buoy.
	1648	Deployed replacement Offshore Waverider.
	1724	Alongside Inshore III Waverider - recovered buoy.
	1759	Deployed replacement Inshore III Waverider.
	1828	Start of survey near Inshore II position.
	2144	End of survey. Sailed for Castlebay.
2.8.81	0130	Arrived Castlebay.
	0900	Rendezvous with Reul na Maidne at Castlebay.
	1130	Finished offloading equipment. Departed Castlebay.

POSITIONS: Deepwater Buoy deployed:

Waverider No:	67043
Decca chain:	8E/MP (Hebridean)
Green:	D 30.06
Purple:	A 73.90
Depth:	100.3 m mid-tide approx.
Time:	14.15 BST

Offshore Buoy deployed:

Waverider No:	67214
Decca chain:	8E/MP (Hebridean)
Green:	D 32.32
Purple:	A 58.80
Depth:	47.6 m mid-tide approx.
Time:	1648 BST

Inshore III Buoy deployed:

Waverider No:	67213
Decca chain:	8E/MP (Hebridean)
Green:	D 31.44
Purple:	A 53.40
Depth:	25.0 m mid-tide approx.
Time:	1759 BST

Please see over for survey listings.

PREPARED BY: J D HUMPHERY

APPROVED BY: A P SALKIELD

DATE: 21.8.81.

ECHO SOUNDER SURVEY REUL NA MAIDNE 1.8.81

Furuno echo sounder

Decca Navigator Mk 21

Decca chain 8E/MP (Hebridean)

Station List:

Fix	Time BST	Green	Purple	Ship's Head ° magnetic	Comments
1	1828	D36.84	A53.84	088	
2	1832	D37.18	A53.56	092	
3	1834	D37.49	A53.28	092	
4	1836	D37.75	A53.08	090	
5	1839	D38.00	A53.00	085	
6	1841	D38.25	A52.92	088	
7	1842	D38.50	A52.84	090	
8	1844	D38.75	A52.76	085	
9	1846	D39.00	A52.67	085	
10	1847	D39.25	A52.55	090	
11	1849	D39.50	A52.41	082	
12	1851	D39.75	A52.30	083	
13	1852	D40.00	A52.15	088	
14	1856	D40.00	A52.22	287	
15	1900	D40.00	A52.50	306	
16	1903	D40.02	A52.75	305	
17	1907	D39.99	A53.00	305	
18	1914	D38.96	A53.25	092	
19	1918	D38.93	A53.00	107	
20	1922	D39.02	A52.75	112	
21	1925	D38.94	A52.50	112	
22	1929	D39.00	A52.24	108	
23	1935	D38.02	A52.38	303	
24	1937	D38.03	A52.50	310	
25	1942	D38.06	A52.75	304	
26	1947	D38.03	A53.00	307	

Fix	Time BST	Green	Purple	Ship's Head ° magnetic	Comments
27	1951	D38.06	A53.25	307	
28	1955	D38.10	A53.50	305	
29	1957	D38.14	A53.75	301	Purple lane rolling
30	2004	D37.54	A53.74	114	
31	2007	D37.56	A53.50	103	
32	2009	D37.60	A53.25	107	
33	2013	D37.52	A53.00	117	
34	2016	D37.48	A52.75	111	Purple lane rolling
35	2019	D37.02	A52.75	301	
36	2024	D37.04	A53.00	303	
37	2027	D37.03	A53.25	305	
38	2030	D37.01	A53.50	303	
39	2033	D37.03	A53.75	307	
40	2036	D37.10	A54.00	302	
41	2039	D37.10	A54.25	299	
42	2045	D36.00	A54.20	100	
43	2048	D36.04	A54.00	110	
44	2051	D35.96	A53.75	111	
45	2054	D35.91	A53.50	108	
46	2057	D35.98	A53.25	103	
47	2059	D36.00	A53.00	105	
48	2102	D36.50	A52.80	062	
49	2104	D37.25	A52.74	045	
50	2107	D38.00	A52.75	042	
51	2108	D38.50	A52.75	047	
52	2110	D39.00	A52.70	048	
53	2126	D39.25	A52.75	255	
54	2127	D39.00	A52.80	253	
55	2129	D38.64	A52.90	262	Fix doubtful
56	2131	D38.25	A52.98	262	
57	2134	D37.83	A53.10	267	
58	2136	D37.50	A53.29	279	
59	2139	D37.22	A53.50	276	
60	2141	D37.00	A53.70	282	
61	2144	D36.60	A54.00	276	

Note: No track plot of this survey is included in this report. The survey was of a small area, and no Admiralty chart is of a large enough scale to show the plot clearly.

The survey was performed to provide topographical information to help to explain the large energy disparity between wave measurements taken at the Inshore I and Inshore II locations. The survey showed no major topographical discontinuity which might explain the disparity.

ABRIDGED DETAILS OF HEBRIDES VISIT, AUGUST 1981

Waverider deployments:

Deepwater Site:	Buoy No:	67043
	Calibrated:	7.10.80
	Sensitivity:	1.842 Hz m^{-1}
	Position:	057° 17' 48"N
		007° 53' 54"W
	Decca readings:	Chain 8E/MP (Hebridean)
		Green D 30.06
		Purple A 73.90
	Date:	1.8.81
	Time:	1415 BST
	Depth:	100.3 m mid tide approx.
	Battery volts:	20.4 + 20.4 V in July 1981
	Frequency:	29.725 MHz
	Output meter reading:	8.9
Offshore Site:	Buoy No:	67214
	Calibrated:	27.11.80
	Sensitivity:	1.862 Hz m^{-1}
	Position:	057° 18' 21"N
		007° 38' 09"W
	Decca readings:	Chain 8E/MP (Hebridean)
		Green D 32.32
		Purple A 58.80
	Date:	1.8.81
	Time:	16.48 BST
	Depth:	47.6 m mid tide approx.
	Battery volts:	19.8 + 19.8 on 22.7.81
	Frequency:	29.825 MHz
	Output meter reading:	8.7

Inshore III Site:	Buoy No:	67213
	Calibrated:	23.1.80
	Sensitivity:	1.871 Hz m^{-1}
	Position:	057° 17' 24"N
		007° 29' 09"W
	Decca readings:	Chain 8E/MP (Hebridean)
		Green D 31.44
		Purple A 53.40
	Date:	1.8.81
	Time:	1759 BST
	Depth:	25.0 m mid tide approx.
	Battery volts:	20.5 + 20.3 V on 17.7.81
	Frequency:	26.990 MHz
	Output meter reading:	8.6

Waverider recoveries:

Deepwater Site:	Buoy No:	6851
	Deployed:	10.8.80
Offshore Site:	Buoy No:	67041
	Deployed:	25.4.81
Inshore III Site:	Buoy No:	67201
	Deployed:	1.3.81

Receiving Systems:

	Calibrated:	5.8.81
Deepwater System:	Frequency:	29.725 MHz
	Eddystone receiver:	EC964/7c/458, inventory number 1090
	Microdata logger No:	1036
	Recording channel:	5
	Readings prefixed by:	+
	Unlocked display:	+0000
	Sensitivity:	-64 Hz^{-1}

Offshore System:	Frequency:	29.825 MHz
	Eddystone receiver:	EC964/7c/553, inventory number 1106
	Microdata logger no:	1029
	Recording channel:	6
	Readings prefixed by:	-
	Unlocked display:	-0000
	Sensitivity:	$-64\ Hz^{-1}$
Inshore III System:	Frequency:	26.990 MHz
	Eddystone receiver:	EC964/7c/409, inventory number 999
	Microdata logger no:	1036
	Recording channel:	6
	Readings prefixed by:	-
	Unlocked display:	-0000
	Sensitivity:	$-64\ Hz^{-1}$