VESSEL: M.T. REUL NA MAIDNE

OWNER: D.B. MACLEOD,
Oiteag na Mara,
Bruernish,
North Bay,
Barra,
Outer Hebrides,
SCOTLAND.

CRUISE PERIOD: 0700 hrs 10 August 1980 - 1200 11 August 1980

PERSONNEL:

J.D. Humphery	H.S.O. Senior Scientist
J.A. Crabb	S.S.O.
B.M. Norman	A.S.O.

ITINERARY: Sunday 10 August

Started loading equipment 0700 BST.
Deployed Super offshore (S.O.S.) Waverider 1344 BST.
Echo Sounder survey to offshore (O.S.) Waverider, 1417 to 1610 BST.
Recovered old offshore (O.S.) Waverider approximately 1630 BST.
Deployed new O.S. Waverider 1705 BST.
Echo Sounder survey to North of O.S. Waverider, 1712 to 1816 BST.
Recovered old inshore (I.S.) Waverider at 2000 BST approximately.
Deployed new I.S. Waverider at 2013 BST.
Echo Sounder survey I.S. Waverider to O.S. Waverider, and to 10 Km South of O.S. Waverider between 2021 and 2210 BST.

Arrived Castlebay 0145 on 11.8.80.

OBJECTIVES: To deploy three Waverider buoys to the West of South Uist; two of them to continue the series of measurements started in 1976, the third being in a new location some 31 km offshore. To perform echo sounder surveys between the three buoy positions, and 10 km to North and South of the offshore location. To recover the old inshore and offshore Waveriders.

PROCEDURE AND METHODS: The equipment was first loaded onto the Notre Dame; however a voltage regulator fault meant that the Decca Navigator and other equipment would not work. The Waverider equipment was thus transferred to the Reul Na Maidne: and departure from Castlebay delayed until 1100 BST approximately. Sailed for super-offshore location via Sound of Vatersay, arrived on site approximately 1330 BST.

An echo sounder survey was performed to ensure that flat bottom conditions prevailed at the proposed site. No bottom irregularities observed. Lowered S.O.S. anchor on 205 m rope mooring; when anchor on bottom, lowered Waverider over stern by hand. Many metres of rope noted on surface. (Note: No current observed).

Steamed to position some 2 N. miles West of S.O.S. position. Commenced echo-sounder run past S.O.S. position, to a point just East of offshore Waverider .. location. Marked echo-sounder chart with event marker every 5 minutes; noted Decca Navigator positions and time.

On arrival at offshore Waverider location, recovered old Waverider and mooring to just below the sub-surface float. Lowered new Waverider over stern by hand, paid out upper part of mooring. Rolled new sub-surface float over side, paid out riser chain. Ensured that all mooring components were free of kinks etc. Lowered anchor clump to bottom on pre-prepared steel cable from trawl winch; when clump on bottom moved away from mooring andcut cable.

A course due North (Magnetic) was set, and a echo sounder survey performed to a point some 10 km North of the offshore Waverider position, then steamed to inshore Waverider position.

Recovered the old inshore Waverider with some difficultly. The rubbercord was hauled in using the rubber power-block at the stern, but the anchor chain had to be recovered using the jilson and rope stoppers. Recovery took perhaps 45 minutes. Meon anchor was fouled by the chain. There was evidence that someone had tried to recover the mooring; rope was tied to the lower end of the rubbercord.

Lowered the new inshore Waverider over the stern by hand, paid out mooring. Lowered anchor to bottom on rope bight while steaming slowly ahead. Recovered rope.

Set course for offshore Waverider position, performing echo-sounder survey. Passed to Southeast of offshore Waverider and headed due South (magnetic) for approximately 10 km. Finished survey at 2210 BST, headed for Castlebay via Sound of Pabbay, arriving alongside at 0145 on Monday 11 August.

Equipment was off loaded alongside at Castlebay 0845-1200 on 11 August 1980 in moderate rain.

WEATHER: On departure Castlebay weather was dull with moderate visibility; wind ESE force 3, dropping. While at the S.O.S.position wind force 1-2 Southerly, visibility decreasing:at the O.S. position, wind 0-1, visibility 100-200 metres with fog patches. At inshore position,

wind Southerly 0-2 increasing, visibility 400-500 m. During last survey and voyage home, wind Southerly 2-4. Note: warnings of gales "soon" and "imminent" were in operation throughout the cruise period but did not arrive until some 8 hours after our return. Detailed weather forecasts from London Weather Centre and Benbecula were obtained before sailing.

SEA: Although wind and local sea were from South throughout cruise period, a long swell was coming in from approximately WNW (presumably from Atlantic depression moving in (which caused the gales later)). Swell was very low at S.O.S. position and only a little more noticable at the O.S. position. However, between, the end of the Northern survey and the inshore Waverider site, the shoaling bottom produced a marked increase in swell height to 3-4 metres, but still very long, (200-300 m). The swell was noticable throughout the last survey to the offshore Waverider position and to the South.

POSITIONS: The Decca position, depths and times of all Waverider deployments was noted. (Note: Depths have been corrected for mid-tide depths in the position list).

During the surveys, the echo-sounder chart was marked with the event marker every 5 minutes and the Decca positions and time noted.

During the North-South surveys from the offshore Waverider position, course offsets would have been cuased by tidal-currents; these were not corrected because no position plotting was possible during the surveys.

EQUIPMENT PERFORMANCE: Waveriders were energised and sealed on deck, and emissions checked with absorbtion wavemeter. All moorings were simply assembled on deck, all major components having been prepared at IOS (T) prior to departure. All IOS equipment worked satisfactorily. On-board equipment used included Decca Navigator MK 21, Furuno Radar, Furuno Echo Sounder, fish loop. All equipment worked well.

Prepared by: J D HUMPHERY

Approved by: A P SALKIELD

Date: 24-9-80.

Waverider Positions on 10 August 1980

Super Offshore (S.O.S.) Waverider

Decca	Green	D	30.10
	Purple	A	73.94
Time	1344 BST		
Depth	97.6 m mid-tide		

Offshore Waverider

Decca	Green	D	32.40
	Purple	A	58.85
Time	1705 BST		
Depth	51.0 m mid-tide		

Inshore Waverider

Decca	Green	D	37.20
	Purple	A	53.60
Time	2013 BST		
Depth	26 m mid-tide		

Low tide approx 1400 BST

High tide approx 2000 BST

Depth of transducer approx 2.5 m

Echo Sounder Survey. West of South Uist, Hebrides, 10 August 1980.

Echo Sounder - Furuno

Decca Navigator MK 21

Station List

Run I S.O.S. to O.S. position

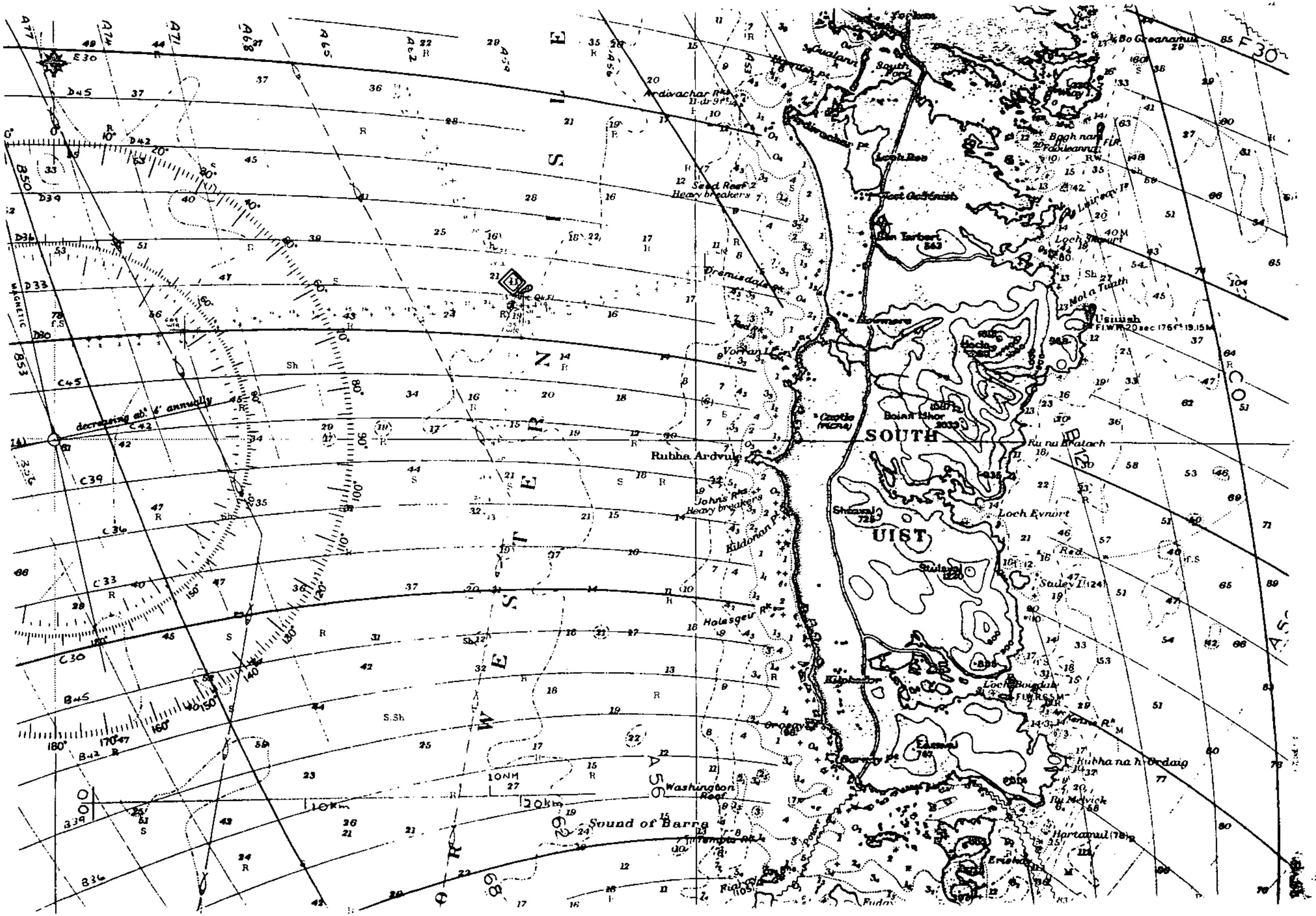
Fix	Time BST	Ships Head, °magnetic	Green	Purple	Comments
1	1417	095	C 47.90	A 79.10	SOL
2	1420	094	C 47.90	A 78.50	
3	1425	096	C 47.95	A 77.45	
4	1430	098	C 47.90	A 76.40	
5	1435	097	C 47.85	A 75.30	
6	1440	093	C 47.98	A 74.18	
-	1442	Super-offshore Waverider passing to port.			
7	1445	093	D 30.14	A 73.20	
8	1450	093	D 30.28	A 72.16	
9	1455	094	D 30.43	A 71.10	
10	1500	096	D 30.62	A 70.05	
11	1505	094	D 30.82	A 69.10	
12	1510	096	D 30.96	A 68.20	
13	1515	098	D 30.97	A 67.26	
14	1520	100	D 30.99	A 66.42	
15	1525	097	D 31.10	A 65.64	
16	1530	100	D 31.14	A 64.78	
17	1535	100	D 31.15	A 63.91	
18	1540	095	D 31.16	A 63.10	
19	1545	095	D 31.37	A 62.32	
20	1550	090	D 31.66	A 61.50	
21	1555	096	D 31.90	A 60.70	
22	1600	097	D 32.16	A 59.96	
23	1605	096	D 32.41	A 59.26	
-	1606	Offshore Waverider passing 70 m to starboard.			
24	1610	102	D 32.48	A 58.48	EOL

Run II O.S. position, due North (magnetic), for 10 km approximately

Fix	Time BST	Ships Head °magnetic	Green	Purple	Comments
25	1712	000	D 32.36	A 58.92	Passing o/s W/R
26	1715	003	D 32.82	A 59.02	
27	1720	005	D 34.00	A 59.23	
28	1725	005	D 35.14	A 59.48	
29	1730	000	D 36.26	A 59.74	
30	1735	000	D 37.42	A 59.96	
31	1740	000	D 38.54	A 60.27	
32	1745	000	D 39.68	A 60.59	
33	1750	000	D 40.82	A 60.88	
34	1755	000	D 41.94	A 61.10	
35	1800	007	D 43.10	A 61.37	
36	1805	003	D 44.28	A 61.63	
37	1810	008	D 45.44	A 61.87	
38	1815	005	D 46.62	A 62.10	
39	1816	002	D 47.00	A 62.16	EOL

Run III Inshore Waverider position to offshore position then 10 km to South (magnetic) of offshore buoy.

Fix	Time BST	Ships Head °magnetic	Green	Purple	Comments
1	2021	Turning to 265	D 37.12	A 53.62	SOL
2	2025	264	D 36.60	A 54.00	
3	2030	262	D 36.00	A 54.34	
4	2035	263	D 35.44	A 54.78	
5	2040	265	D 34.88	A 55.32	
6	2045	258	D 34.30	A 55.82	
7	2050	264	D 33.70	A 56.28	
8	2055	268	D 33.12	A 56.85	
9	2100	280	D 32.72	A 57.40	
10	2105	282	D 32.42	A 58.06	
11	2110	300	D 32.24	A 58.78	
	2111	offshore Waverider passing 100 m to starboard.			
	2112	Changing course to 180° magnetic.			
	2113	Steadied onto new course.			
12	2115	180	D 31.38	A 59.08	
13	2120	182	D 30.02	A 59.14	
14	2125	180	C 46.72	A 59.28	
15	2130	182	C 45.44	A 59.58	
16	2135	180	C 44.16	A 59.84	
17	2140	180	C 42.86	A 59.98	
18	2145	178	C 41.62	A 60.12	
19	2150	180	C 40.40	A 60.46	
20	2155	180	C 39.14	A 60.82	
21	2200	180	C 37.94	A 61.02	
22	2205	180	C 36.68	A 61.24	
23	2210	180	C 35.42	A 61.56	EOL



SOUTH
UIST
Rubha Ardvule
Sound of Barra
Washington Reef
Loch Eynort
Usinish
Rubha na h-Ordaig
Ardivachar Pt.
Seed Reef
Heavy breakers
John's Rk.
Kildonan Pt.
Holasgeir Rk.
Bo Greanamul
Hartamul
Eriskay
decreasing ab. 4' annually
MAGNETIC
10NM
10km
20km