CRUISE REPORT

RRS Frederick Russell Cruise 8/85

06-27 September 1985

Participants

D Lewis	RVS	
R Longmoor	MBA	
G Mardell	IOS/MBA	
A New	IOS	(2nd leg only)
R Pingree	IOS/MBA	(Principal Scientist)
K Potter	RVS	
J Smithers	IOS	
I Waddington	IOS	

Aims

To measure the currents on the slope in the vicinity of La Chappelle Bank with a total of six current meter moorings deployed on the 500 m and 1000 m contours. Drogued satellite tracked drifting buoys to be deployed for various periods of time.

To map the surface distribution of temperature, salinity and chlorophyll a using continuous sampling of water pumped while underway.

To follow the propagation of internal tide from the slope by repeated runs with the undulating SeaSoar in a section normal to the shelf break. The surface signature of the internal tides were also monitored by the ships radar.

The cruise reported here represents our contribution to the French exercise ONDINE.

Procedure

Scientific equipment and the RVS computer system were installed at Falmouth during the period 03/09/85 to 06/09/85, and RRS Frederick Russell sailed from Falmouth at 1430 GMT 06/09/85. Later in the evening when over half way to the working area, the ships radar stopped working, and a return to Falmouth for repairs was necessary. The repairs were completed by midday on the 7th and the cruise restarted. The central mooring rig position for rig 093 and 094 was reached in the early hours of 08/09/85 and an echo sounding survey made to choose the best locations. The acoustic

release was wire tested and the rig 093 laid in 505 m of water. This rig consisted of a bottom mounted part with 3 Aanderaa current meters and a vector averaging current meter held up by a sub-surface sphere. The section was to be recovered on a later cruise in November. A second section, to be recovered at the end of this cruise was tethered to the sub-surface sphere and consisted of two VACMs and a thermistor chain suspended beneath a spar buoy, with a satellite tracked buoy also attached to assist in location on recovery. The rig took four hours to deploy, the task being completed at 1100 hours. Rig 094, with a similar configuration, was deployed at the 1000 m contour, finishing at 1931 hours. During the night, the vessel proceeded to rig 096 position, the furthest south east of the moorings. This was laid by 1030 hours 09/09/85 in 500 m of water and consisted of 3 current meters, and was marked by a surface Dahn buoy.

The vessel returned to the position for rig 095, midway between 094 and 096, where the Argos satellite tracked drifting buoy 1816 was deployed with a drogue. Rig 095, with a configuration similar to 096 was laid at 1835 hours 09/09/85, but it was necessary to launch the ships' boat in order to repair damage to the flashing light on the dahn buoy.

Overnight, the vessel proceeded to the most north-easterly position for rig 091, depth surveying for the best locations for rig 092 on the way. Rig 091 was deployed by 0830 hours 10/09/85, it being necessary to launch the boat to attend to the surface dahn buoy. Rig 092, consisting of a bottom mounted part and a surface suspended section was deployed over the three hour period ending 1640 hours 10/09/85.

The SeaSoar was launched and towed for two hours along the slope to start a section from the shelf out into deep water along the line joining 093/094. The section was completed at 0700 hours 11/09/85. The vessel then proceeded to the shelf edge at approx. 9oW, where the CTD wire was tensioned, and ARGOS buoy 1817 deployed. The last two CTD station dips were made near this position in 554 m and 1134 m of water, work being completed by midnight on the 11th. The vessel steamed to rig 093, checking 092 en route, and noting the presence of sand waves on the shelf edge. At 093 the Argos buoy was recovered by the ship's boat to adjust the floatation. During the afternoon CTD dips 3, 4 and 5 were made in about 500 m of water before the Argos buoy was replaced on rig 093 at 1900 hours 12/09/85. A zig-zag course was followed south east along the shelf break during the night before heading to Concarneau, arriving 1130 hours 13/09/85.

At Concarneau A New embarked and the 2nd leg of the cruise commenced 0600 hours 15/09/85, arriving at the working area at 2000 hours. The next 4 days were spent on SeaSoar section along the line 093/094 with two runs out to the ocean and back. The longest run was 250 km, as is seen on the track chart and listed in the station list. Several problems were encountered with the SeaSoar, including cable and loss of control. On one occasion the CTD was replaced. The SeaSoar sections ended at rig 093 and an acoustic check made at 2000 hours 19/09/85. During the night CTD dips 6 and 7 were made in 500 and 1200 m of water before recovering rig 093 in the morning, using the boat to recover the spar buoy section.

While the current meters were being checked and prepared for relaunch, an acoustic check was made on rig 094. The bottom mounted section was relaid as rig 093A at 1537 hours 20/09/85. During the evening Argos buoy 1822 was launched and two shallow CTD dips made.

Overnight, the vessel proceeded to rig 096, and at 0730 hours 12/09/85 the surface dahn buoy was recovered by the use of the boat. The Argos buoy 1816 was located by df radio and recovered at 1300 hours. Rig 095 was searched for and checked acoustically and a section of CTD dips 10 to 15 made across the slope in this region. At one stage the CTD had to be repaired due to a faulty conductivity sensor.

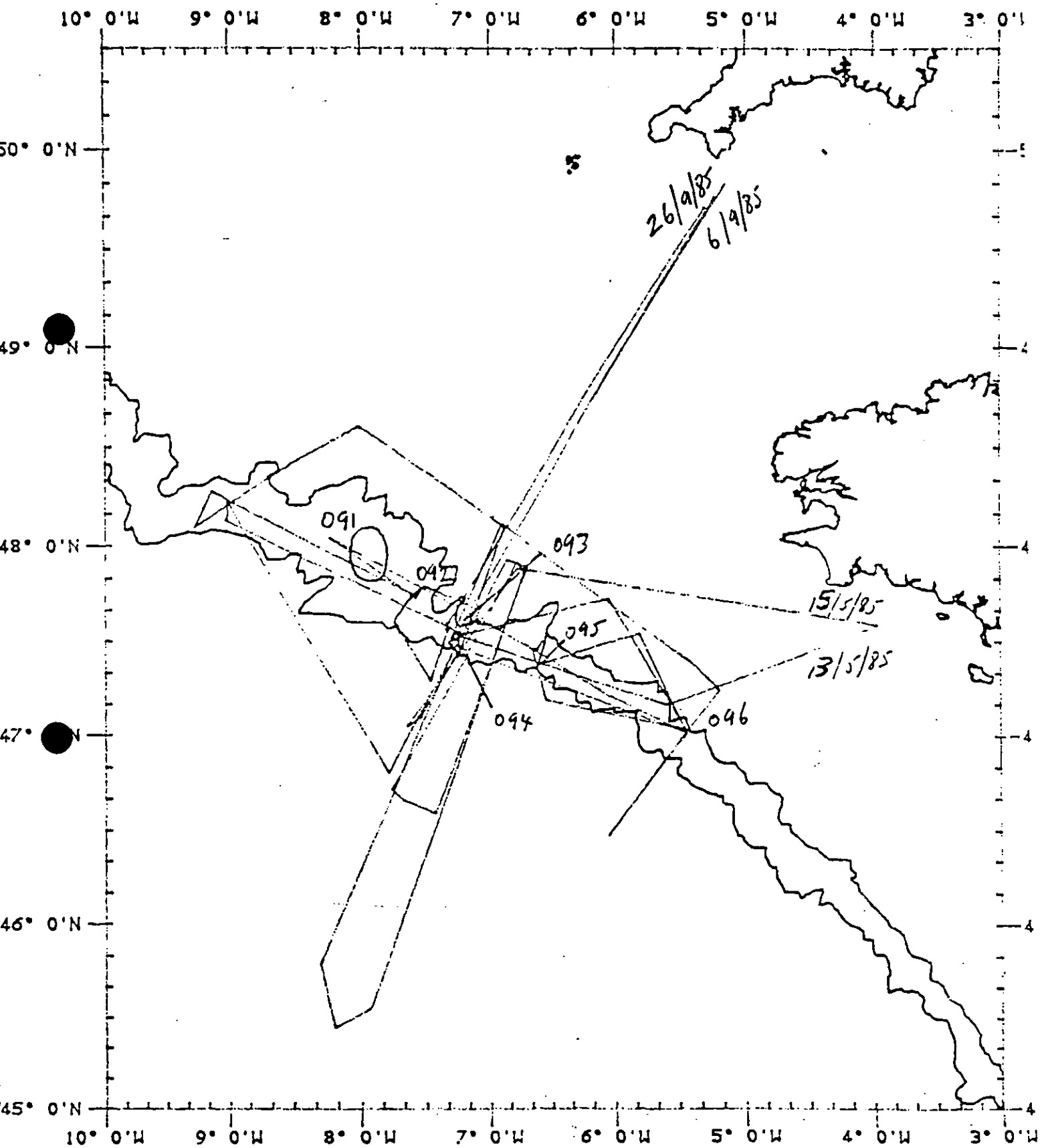
The vessel returned to position 096 during the night and at 0800 hours 22/09/85 the SeaSoar was launched for Run 5, consisting of two legs across the slope at this position. At 2230 hours the SeaSoar was recovered and the CTD replaced with the original one. Run 6 from 0200 to 1220 hours 23/09/85 was along the shelf back to the central 093/094 line. Rig 094 surface floating section was recovered at 1700 hours, once again using the boat. The SeaSoar was again deployed for Run 7, back on shelf and then continuing NW on the same course as Run 6.

At 1000 hours 24/09/85, the SeaSoar was finally recovered, and a search made for Argos buoy 1817. This was eventually located and recovered at 1800 hours, the operation being hampered by fog. On recovery the drogue was missing. CTD dips 16 to 19 in a section at about 9o15'W, with depth 1700 m to 400 m occupied the rest of the day until midnight.

At 0700 hours 25/09/85 the spar buoy and sensors were recovered from rig 092 and the rest of the day spent on CTD dips 20 to 28 in the area of rigs 092, 093 and 094. The deepest dip being 3500 m.

The scientific work now complete the vessel sailed for Falmouth arriving at 1130 hours 26/09/85.

FR 8/85


10° 0'W
9° 0'W
8° 0'W
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3° 0'W
50° 0'N
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48° 0'N
47° 0'N
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26/9/85
6/9/85
091
092
093
094
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096
15/5/85
13/5/85

RRS FREDERICK RUSSELL

CRUISE 8/85

DATE	GMT	LAT	LONG	STATION OR LEG
06/09/88	1430	49 46.0N	5 14.1W	FALMOUTH
06/09/88	2030	48 45.7N	6 09.3W	RADAR FAIL
07/09/88	1100	49 50.1N	5 09.2W	FALMOUTH
08/09/88	1100	47 33.2N	7 15.8W	RIG 093 DEPLOYED
08/09/88	1931	47 29.3N	7 20.1W	RIG 094 DEPLOYED
09/09/88	1024	47 01.0N	5 26.8W	RIG 096 DEPLOYED
09/09/88	1400	47 13.0N	6 02.7W	ARGOS BUOY 1816
09/09/88	1835	47 27.5N	6 38.6W	RIG 095 DEPLOYED
10/09/88	0834	48 02.6N	8 14.2W	RIG 091 DEPLOYED
10/09/88	1640	47 43.6N	7 34.9W	RIG 092 DEPLOYED
10/09/88	1815	47 44.4N	7 34.7W	SSOAR RUN1 LEG1
10/09/88	1945	47 47.7N	7 31.2W	LEG2
10/09/88	2210	47 40.3N	7 07.1W	LEG3
11/09/88	0700	46 48.2N	7 47.6W	
11/09/88	2120	48 14.4N	9 01.3W	ARGOS 1817 DEPLOYED
11/09/88	2230	48 09.5N	9 00.5W	CTD1 554M
12/09/88	0000	48 07.8N	9 01.9W	CTD2 1134M
12/09/88	1200	47 33.2N	7 15.7W	ARGOS BUOY FROM RIG 093
12/09/88	1320	47 32.2N	7 15.7W	CTD3 ,CTD4
12/09/88	2000	47 31.9N	7 15.6W	CTD5 497M
13/09/88	0500	47 10.0N	5 36.4W	
13/09/88	1130	47 35.6N	3 58.2W	CONCARNEAU
15/09/88	2000	47 53.4N	6 47.3W	SSOAR RUN2
16/09/88	0500	47 03.0N	7 39.2W	
16/09/88	0800	47 06.1N	7 32.8W	SSOAR RUN3 LEG1
16/09/88	1700	47 56.0N	6 51.9W	LEG2
16/09/88	1752	47 53.5N	6 42.3W	LEG3
17/09/88	0515	46 33.4N	7 26.1W	LEG4
17/09/88	0700	46 39.8N	7 40.7W	
17/09/88	1000	46 43.2N	7 46.0W	SSOAR RUN 4 LEG1
17/09/88	2217	47 55.3N	6 47.1W	LEG2
17/09/88	2250	47 52.3N	6 43.6W	LEG3
18/09/88	2100	45 33.1N	7 55.7W	LEG4
18/09/88	2255	45 26.5N	8 11.7W	LEG5
19/09/88	0110	45 47.7N	8 18.1W	LEG6
19/09/88	1700	47 33.6N	7 14.0W	
19/09/88	2130	47 32.4N	7 15.0W	CTD6 476M
19/09/88	2300	47 29.1N	7 15.1W	CTD7 1213M
20/09/88	0918	47 33.2N	7 15.8W	RECOVER RIG 093
20/09/88	1537	47 33.3N	7 16.7W	RELAY RIG 093(A)
20/09/88	1900	47 30.2N	7 18.2W	DEPLOY ARGOS 1822
20/09/88	1950	47 31.6N	7 15.3W	CTD8 240M
20/09/88	2130	47 32.1N	7 15.3W	CTD9 344M
21/09/88	0240	47 44.0N	6 03.4W	

21/09/88	0730	47 02.3N	5 27.5W	DAHN FROM RIG 096
21/09/88	1300	47 11.8N	6 33.6W	ARGOS 1816 RECOVERED
21/09/88	1645	47 28.0N	6 39.9W	AT RIG 095
21/09/88	1735	47 27.8N	6 37.5W	CTD10 397M
21/09/88	2000	47 33.0N	6 32.8W	CTD11,12 185M
21/09/88	2130	47 29.0N	6 34.2W	CTD13 305M
21/09/88	2220	47 25.9N	6 35.9W	CTD14 640M
21/09/88	2355	47 22.9N	6 37.6W	CTD15 1035M
22/09/88	0400	47 33.0N	5 49.0W	
22/09/88	0800	47 01.0N	5 27.0W	SSOAR RUN5 LEG1
22/09/88	1400	46 28.6N	6 03.4W	LEG2
22/09/88	2230	47 15.1N	5 12.3W	
23/09/88	0700	47 23.9N	5 25.3W	SSOAR RUN6
23/09/88	1220	48 07.1N	6 54.4W	
23/09/88	1700	47 29.4N	7 20.1W	RECOVER RIG 094 SPAR
23/09/88	2030	47 26.2N	7 15.1W	SSOAR RUN7 LEG1
24/09/88	0200	48 06.1N	6 53.1W	LEG2
24/09/88	1000	48 36.3N	8 01.2W	
24/09/88	1800	48 24.6N	8 32.1W	RECOVER BOUY 1817
24/09/88	1900	48 05.5N	9 16.7W	CTD16 1698M
24/09/88	2105	48 05.4N	9 17.0W	CTD17 1025M
24/09/88	2210	48 11.8N	9 12.3W	CTD18 513M
24/09/88	2335	48 16.8N	9 08.5W	CTD19 363M
25/09/88	0700	47 44.9N	7 36.6W	RIG 092 RECOVERED
25/09/88	0835	47 43.3N	7 37.7W	CTD20 578M
25/09/88	1005	47 46.7N	7 33.4W	CTD21 327M
25/09/88	1100	47 42.3N	7 39.2W	CTD22 1000M
25/09/88	1303	47 36.3N	7 45.1W	CTD23 2000M
25/09/88	1620	47 17.5N	7 28.2W	CTD24 3500M
25/09/88	1800	47 27.4N	7 23.4W	CTD25 2000M
25/09/88	1935	47 34.2N	7 19.9W	CTD26 1000M AT RIG 094
25/09/88	2020	47 33.8N	7 21.0W	CTD27 500M AT RIG 093
25/09/88	2110	47 35.6N	7 20.6W	CTD28 300M
26/09/88	1130	49 42.9N	5 18.6W	FALMOUTH