

CRUISE REPORT JR267

assembled by Carolina Nobre (cnobre@whoi.edu)

Cruise Summary

Vessel: RSS James Clark Ross

Cruise ID: JR267

Ports: Reykjavik, Iceland to Longyearbyen, Norway

Dates: July 27, 2012 - August 26, 2012

The objectives of the cruise were two-fold.

(1) To retrieve a set of moorings that was deployed the previous year and redeploy some of them. (2) To carry out a hydrographic/velocity/water sample survey of the East Greenland Current between Denmark Strait and Fram Strait.

The mooring work was completed during the first 10 days of the cruise. The moorings were located in the vicinity of the Denmark Strait and all of them were successfully serviced. We then transitioned into the hydrographic phase of the cruise and occupied a set of high-resolution CTD/velocity/water-sample transects across the East Greenland shelf and slope, some of them in the pack-ice. Altogether we occupied 10 hydrographic sections.

Principal Investigators

1. Robert Pickart, Chief Scientist, Woods Hole Oceanographic Institution, Woods Hole, MA 02543 USA
2. Hedinn Valdimarsson, Marine Research Institute, Reykjavik, Iceland
3. Kjetil Våge, University of Bergen, Bergen, Norway
4. Laura de Steur, Institute for Research of the Sea, Texel, Netherlands

Measurements

A total of 13 moorings were recovered on the cruise and 10 moorings were deployed. Following this, 300 conductivity-temperature-depth (CTD) stations were occupied comprising 10 sections. During each CTD cast, water samples were collected at discrete intervals and analyzed for salinity in order to calibrate the conductivity sensors. At selected stations and selected depths water was also collected for measuring dissolved oxygen, O-18 oxygen isotope and nutrients. The hull-mounted acoustic Doppler current profiler (ADCP) was operated throughout the cruise. See the figures below for the positions of the moorings and hydrographic stations. The tables below contain the pertinent information for all of the moorings and hydrographic stations.

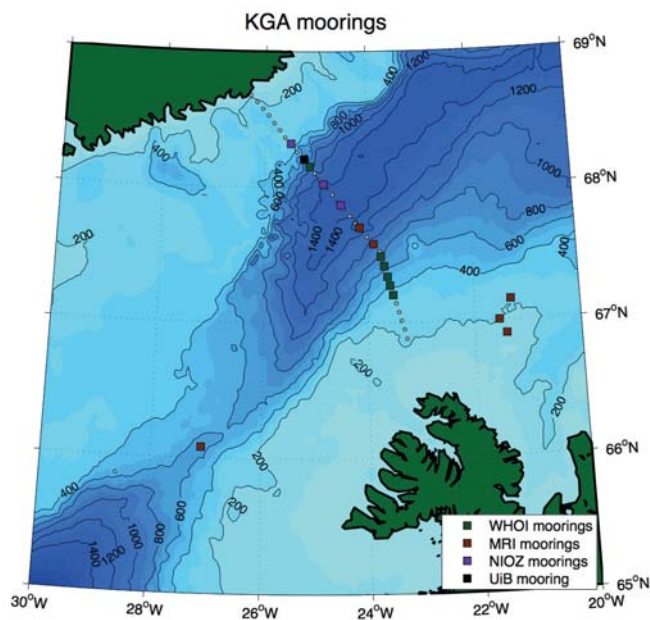


Figure 1. Positions of the moorings recovered and/or deployed in the cruise

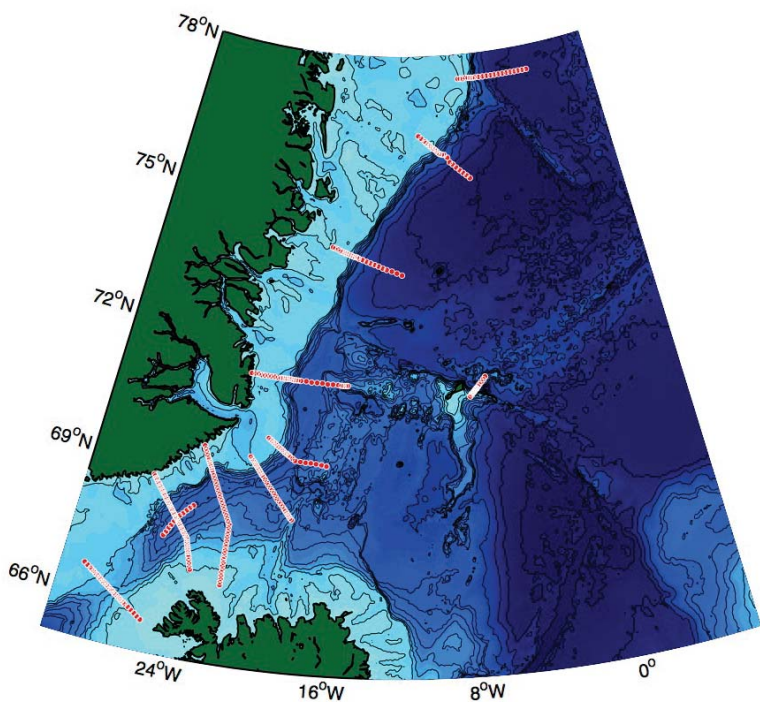


Figure 2. Positions of the 300 hydrographic stations comprising the 10 sections of the cruise.

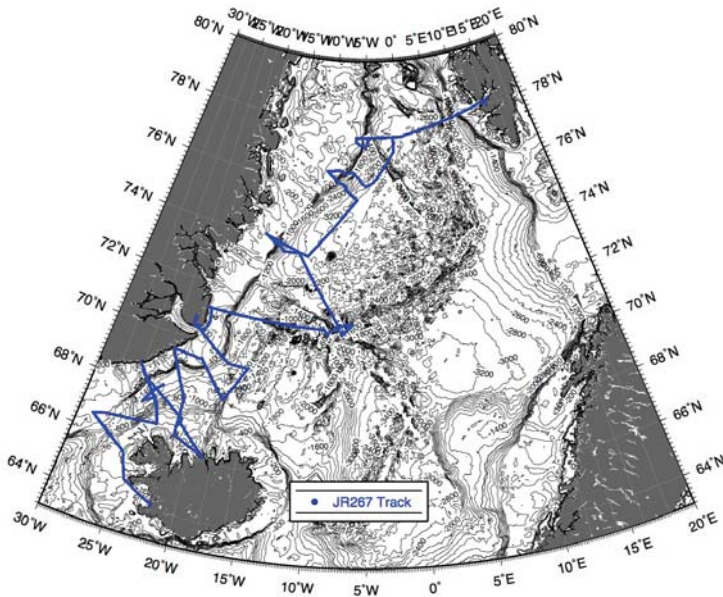


Figure 3 - Cruise track, along which ADCP data was collected.

Table 1 - Positions of the Moorings recovered and/or deployed on the cruise.

KGA ID	Moorings	Lat	Lon	Depth	Operation
	HAFRO-DS1	66	4.61 27	4.88 656	recover/deploy
[KGA-1]	WHOI-DS1	67	12.18 23	31.86 273	recover
[KGA-2]	WHOI-DS2	67	16.41 23	35.3 402	recover
[KGA-3]	WHOI-DS3	67	20.30 23	37.87 500	recover
[KGA-4]	WHOI-DS4	67	24.96 23	41.52 620	recover/deploy
[KGA-5]	WHOI-DS5	67	29.28 23	45.06 750	recover
[KGA-6]	HAFRO-KGA6	67	34.80 23	53.46 949	recover
[KGA-7]	HAFRO-KGA7	67	42.14 24	9.28 1247	recover/deploy
[KGA-8]	NIOZ-DS5	67	52.14 24	30.72 1459	recover
[KGA-9]	NIOZ-DS4	68	1.38 24	51.15 1298	recover
[KGA-10]	WHOI-DS6	68	9.18 25	7.45 900	recover
[KGA-11]	UIB-KGA-11	68	12.36 25	13.89 555	recover/deploy
[KGA-12]	NIOZ-DS3	68	19.31 25	29.57 302	recover/deploy
[KGA-13]	NIOZ-DS2	68	19.31 25	29.57 302	deploy
[KGA-14]	NIOZ-DS1	68	28.45 25	48.98 315	deploy
	HAFRO-HB3	67	8.79 21	18.68 233	deploy
	HAFRO-HB4	67	17 21	18 300	deploy
	HAFRO-HB2	66	59.99 21	32.44 203	deploy

Table 2 - Positions of the 300 Hydrographic Stations occupied on the cruise.

Station Number	Lat	Lon	Depth
1	65.65	-25.29	91.6
2	65.7	-25.48	160.4
3	65.75	-25.66	253.4
4	65.8	-25.85	198.8
5	65.85	-26.03	226.4
6	65.89	-26.22	273.9
7	65.92	-26.31	288
8	65.94	-26.41	294.4
9	65.97	-26.5	280.2
10	65.99	-26.59	277.2
11	66.13	-27.15	605
12	66.11	-27.06	643.4
13	66.09	-26.97	634.6
14	66.06	-26.87	583.8
15	66.01	-26.68	355.7
16	66.04	-26.78	475.8
17	66.16	-27.25	500.7
18	66.18	-27.34	485.6
19	66.21	-27.44	486.9
20	66.23	-27.53	491.3
21	66.25	-27.62	477
22	66.28	-27.72	459.5
23	66.3	-27.81	354
24	66.33	-27.91	337.2
25	66.35	-28	329.3
26	66.37	-28.1	338.2
27	66.4	-28.19	333.2
28	66.42	-28.29	330.8
29	66.45	-28.38	318.8
30	66.49	-28.57	323.7
31	66.54	-28.77	328.5
32	66.88	-23.28	228.4
33	66.94	-23.33	235.5
34	67.01	-23.38	239.2
35	67.07	-23.43	241.2
36	67.18	-23.51	261.5
37	67.23	-23.55	331.3

38	67.27	-23.58	397.4
39	67.14	-23.47	254
40	67.31	-23.61	456.3
41	67.36	-23.65	525.7
42	67.4	-23.68	592.6
43	67.44	-23.71	658
44	67.49	-23.74	740.3
45	67.53	-23.78	829.1
46	67.56	-23.86	919
47	67.6	-23.93	999.9
48	67.63	-24.01	1086.5
49	67.67	-24.08	1178.5
50	67.7	-24.15	1257.2
51	67.74	-24.23	1339.3
52	67.77	-24.3	1396
53	67.81	-24.38	1440.6
54	67.84	-24.45	1470.3
55	67.88	-24.53	1469.1
56	67.91	-24.6	1450.6
57	67.95	-24.68	1425.3
58	67.48	-25.05	506.4
59	67.56	-24.94	506.7
60	67.64	-24.84	506.4
61	67.72	-24.74	506.3
62	67.8	-24.63	506.8
63	67.95	-24.37	506.4
64	68.01	-24.21	507.5
65	68.08	-24.05	507.7
66	68.15	-23.89	508
67	68.21	-23.73	508.2
68	67.87	-24.51	1015.4
69	67.98	-24.75	1380
70	68.02	-24.83	1320.8
71	68.05	-24.91	1253.5
72	68.09	-24.98	1151.8
73	68.12	-25.06	1041.4
74	68.16	-25.13	877.2
75	68.19	-25.21	642.6
76	68.23	-25.29	367.6
77	68.26	-25.36	332.4
78	68.15	-25.12	916.6
79	68.3	-25.44	321.9
80	68.33	-25.52	283.2

81	68.37	-25.59	284.7
82	68.4	-25.67	289.3
83	68.44	-25.75	324
84	68.47	-25.82	317.4
85	68.51	-25.9	298.6
86	68.54	-25.98	284.5
87	68.58	-26.06	171
88	68.61	-26.14	139.9
89	68.65	-26.21	158.6
90	68.68	-26.29	95.7
91	67	-21.58	206
92	67.14	-21.58	227.3
93	67.07	-21.59	227.9
94	66.94	-21.59	160.6
95	66.87	-21.58	146.9
96	66.8	-21.58	88.8
97	66.73	-21.58	109.1
98	66.67	-21.58	100.7
99	67.21	-21.59	256.4
100	67.27	-21.58	286.9
101	67.34	-21.58	343.3
102	67.41	-21.58	486.7
103	67.48	-21.58	586.6
104	67.54	-21.58	638.3
105	67.61	-21.58	666.8
106	67.68	-21.58	700.1
107	67.75	-21.58	730.8
108	67.81	-21.58	776.9
109	67.88	-21.59	800.5
110	67.95	-21.58	826.5
111	68.01	-21.67	835.2
112	68.07	-21.75	848.6
113	68.13	-21.83	873.8
114	68.19	-21.92	908.6
115	68.25	-22	981.6
116	68.31	-22.08	1112
117	68.37	-22.16	1183.8
118	68.43	-22.25	1303.4
119	68.49	-22.33	1380.7
120	68.55	-22.41	1433.4
121	68.61	-22.5	1471.7
122	68.67	-22.58	1502.5
123	68.73	-22.66	1514.5

124	68.79	-22.75	1507.2
125	68.85	-22.83	1441.2
126	68.91	-22.92	1333.1
127	68.97	-23	1188.7
128	69.01	-23.06	1091
129	69.05	-23.12	911.1
130	69.09	-23.18	599.8
131	69.13	-23.23	241
132	69.17	-23.29	232.6
133	69.21	-23.35	212.2
134	69.25	-23.41	227.4
135	69.31	-23.49	244.6
136	69.37	-23.58	251.9
137	69.43	-23.66	273.7
138	69.49	-23.75	212.8
139	69.42	-20.94	406.7
140	69.38	-20.85	390.7
141	69.35	-20.77	368.4
142	69.32	-20.69	364.4
143	69.28	-20.61	363.3
144	69.25	-20.53	364.7
145	69.21	-20.45	625.1
146	69.18	-20.37	915.6
147	69.14	-20.29	1154.1
148	69.11	-20.21	1321.3
149	69.07	-20.13	1433.1
150	69.04	-20.05	1519.8
151	68.99	-19.93	1561.3
152	68.93	-19.81	1528.4
153	68.88	-19.69	1439.6
154	68.83	-19.57	1335.9
155	68.78	-19.45	1257.8
156	68.73	-19.33	1284.6
157	68.68	-19.22	1144.6
158	68.62	-19.1	1244.6
159	68.57	-18.98	1050.6
160	68.52	-18.86	814.4
161	68.47	-18.74	1357.3
162	68.42	-18.63	1228.6
163	68.38	-18.55	1107.6
164	68.35	-18.47	1085.3
165	68.31	-18.39	1052.1
166	68.28	-18.32	911.2

167	68.24	-18.24	778.5
168	68.21	-18.16	540.3
169	69.39	-16.41	814.1
170	69.41	-16.7	1023.7
171	69.42	-17.03	1086.3
172	69.43	-17.35	1325.5
173	69.43	-17.66	1402.3
174	69.44	-17.98	1518.9
175	69.45	-18.3	1586.9
176	69.49	-18.47	1589.5
177	69.53	-18.63	1520.8
178	69.55	-18.73	1433.7
179	69.58	-18.84	1310.5
180	69.6	-18.95	1147
181	69.63	-19.05	962.8
182	69.65	-19.16	751
183	69.68	-19.26	529.6
184	69.7	-19.37	405.3
185	69.73	-19.48	352.6
186	69.76	-19.58	303.9
187	69.78	-19.69	294.9
188	69.81	-19.8	292.1
189	69.83	-19.9	285
190	69.86	-20.02	280.7
191	71.16	-21.67	40.4
192	71.16	-21.43	212.5
193	71.16	-21.22	221.9
194	71.15	-21.01	261.4
195	71.15	-20.81	302.8
196	71.15	-20.59	373.8
197	71.15	-20.39	370
198	71.15	-20.18	331.5
199	71.14	-19.97	385.2
200	71.14	-19.76	433.4
201	71.14	-19.63	431.6
202	71.14	-19.49	427.6
203	71.14	-19.35	455.2
204	71.14	-19.21	561.6
205	71.14	-19.07	848.6
206	71.13	-18.93	1136.4
207	71.13	-18.79	1355.8
208	71.13	-18.65	1496.6
209	71.13	-18.45	1616.2

210	71.13	-18.11	1685.7
211	71.12	-17.76	1699.8
212	71.12	-17.41	1685.1
213	71.12	-17.06	1470.7
214	71.11	-16.71	1265.9
215	71.11	-16.37	1464.6
216	71.11	-16.02	1843
217	71.1	-15.82	1445.6
218	71.1	-15.68	525.3
219	71.1	-15.54	662.5
220	71.1	-15.4	1007.5
221	71.25	-6.48	710.1
222	71.2	-6.62	1069.8
223	71.15	-6.76	1052
224	71.1	-6.9	1369.8
225	71.06	-6.99	2230.2
226	71.03	-7.09	2414.8
227	71	-7.18	1663.5
228	70.98	-7.23	916.5
229	70.96	-7.27	657.5
230	70.95	-7.32	395.1
231	70.93	-7.36	337.8
232	70.9	-7.46	312.7
233	70.86	-7.55	244.2
234	71.01	-7.13	2396.4
235	73.56	-13.02	812.2
236	73.59	-13.32	813.4
237	73.63	-13.63	812.5
238	73.66	-13.93	812.3
239	73.69	-14.23	812.3
240	73.72	-14.53	812.9
241	73.75	-14.83	1829.4
242	73.78	-15.14	1453.3
243	73.8	-15.27	1243.6
244	73.81	-15.42	1014.9
245	73.82	-15.57	789.9
246	73.84	-15.73	474.7
247	73.85	-15.89	294.2
248	73.87	-16.05	216.2
249	73.88	-16.2	210.3
250	73.9	-16.35	196.2
251	73.91	-16.51	208.2
252	73.94	-16.73	218.3

253	73.96	-16.95	215.3
254	73.98	-17.12	211.3
255	73.53	-12.65	813
256	73.49	-12.27	812.6
257	73.45	-11.9	812.7
258	75.42	-6.23	1015.8
259	75.48	-6.5	812.6
260	75.54	-6.76	1015.8
261	75.6	-7.03	813.3
262	75.66	-7.3	812
263	75.73	-7.56	812.4
264	75.78	-7.82	812.4
265	75.88	-7.99	809.6
266	75.94	-8.27	813
267	75.95	-8.46	812.8
268	75.97	-8.66	813
269	76	-8.79	813.1
270	76.03	-8.92	813.5
271	76.06	-9.04	809.9
272	76.09	-9.21	735.5
273	76.12	-9.35	477.3
274	76.15	-9.45	258.7
275	76.18	-9.59	220.2
276	76.21	-9.75	257.5
277	76.24	-9.89	263.1
278	76.3	-10.17	284.8
279	76.35	-10.43	287.4
280	77.5	-4.86	795.1
281	77.49	-5.08	795.8
282	77.5	-5.31	797.9
283	77.5	-5.51	763.3
284	77.51	-5.77	433.3
285	77.49	-6.06	284.5
286	77.5	-6.28	261.5
287	77.5	-6.49	243
288	77.5	-4.48	816.2
289	77.5	-4.1	815.2
290	77.5	-3.71	815.8
291	77.5	-3.33	816.8
292	77.5	-2.95	813.7
293	77.5	-2.57	813.6
294	77.5	-2.18	812.6
295	77.5	-1.8	813.1

296	77.5	-1.41	813.8
297	77.5	-1.03	819
298	77.5	-0.64	814.2
299	77.5	-0.25	814.9
300	77.5	0.13	815.7