WCB acoustic survey cruise report *JR 107*

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General:

This acoustic survey was run in the normal west to east direction. We started at the northwest end at W1.1 N and worked eastwards. All transects were covered fully except transect W3.1 south where we had to leave the transect 1.5 nm before the end, to avoid icebergs. In addition to the acoustic survey the UOR was towed on all transects of the WCB. Overall the weather was very good and we had no problems with either the EK60, the CTD or the UOR. Therefore it was one of the smoothest and most successful WCB surveys for a long time. Additional to the normal ER60 data logging, the data of the new ER600 main ships acoustic depth sounder at 12 kHz were recorded for further comparison of an additional frequency with the standard frequencies. The CTD system worked without any problems.

After finishing the WCP the long transect ER635, was run from the S to the N, XBT profiles where done at the normal 15km spacing, but we had to leave the transect several times due to many icebergs. During ER635 neither EK60 acoustics nor the UOR were used. But the SWATH bathymetry system was run.

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EK60/ER60 operations:

- The sampling interval was 2 sec. and the sampling depth was set to 300 m
- Parallel to the EK60 raw data Ecolog ek6 data were saved. Instead of having the main ER60 computer running the Ecolog software and doing all the compression as we did it before, this time the .raw data were picked up from the EK60 Workstation 2 and then processed and send back to the main server. Together with the Ecoview live viewing these settings worked fine, but no processing was done on the Workstation 2, which could reduce the performance of the machine.
- In addition to the three frequencies of the ER60, the additional data of the ER600 (12kH) were saved for further comparison.
- The SSU was working fine, we had no problems with the synchronisation of the ER 60 together with the new ER 600.
- SUMMARY: The ER60 was working absolutely fine, with NO computer problems, NO problems with the SSU, the parallel running of the Ecolog software and the ER600.

XBT operations:

- During the survey the XBT system worked very well and we had only 3 or 4 failures, mainly due to birds breaking the thin copper wire.

CTD operations:

- During the survey the CTD system and the Cable monitoring system (CLAM) worked fine, we had no problems at all. The collected water was analysed by Dave Stevens and the rest of the water was used by JR124 for further gas chromatographic analyses.

ER 60 settings on *JR 107*

general:

ping mode:	**Ingoing – GPT Auxiliary Port**
ping interval:	**2 sec**
salinity:	**34**
sound velocity:	**1457m/s**
water temperature:	**2 °C**

38 kHz Transceiver:

mode:	**active**
transducer type:	**ES38**
pulse length:	**1.024 ms**
max. power:	**2000 W**
range:	**0 – 300 m**
TVG:	**20 log R**

120 kHz Transceiver:

mode:	**active**
transducer type:	**ES120-7**
pulse length:	**1.024 ms**
max. power:	**500 W**
range:	**0 – 300 m**
TVG:	**20 log R**

200 kHz Transceiver:

mode:	**active**
transducer type:	**ES200-7**
pulse length:	**1.024 ms**
max. power:	**300 W**
range:	**0 – 300 m**
TVG:	**20 log**

Transect log for JR 107:

Time	Transect	Latitude	Longitude	Depth	Comment	User
24/11/2004 17:32	W 4.2 south	-53.85559	-37.59296	108.07	end of transect W 4.2	ek60
24/11/2004 13:18	W 4.2 north	-53.15022	-37.83059	3350.84	start of transect W 4.2 north to south	ek60
24/11/2004 12:37	W4.1 North	-53.16424	-37.96452	2570.79	end of transect W 4.1	ek60
24/11/2004 08:00	W 4.1 south	-53.86744	-37.70713	113.82	start of transect W 4.1 south to north 1nm to the east due to ice	ek60
23/11/2004 18:03	W 3.2 north	-53.18473	-38.14017	2799.59	end of transect W 3.2	ek60
23/11/2004 13:35	W 3.2 south	-53.88897	-37.90653	147.28	start of transect W 3.2 south	ek60
23/11/2004 12:12	W 3.1 south	-53.84661	-38.24675	153.4	transect W 3.1 finished about 1.5 miles north of the southern end due to ice	ek60
23/11/2004 08:07	W 3.1 north	-53.22277	-38.44818	3767.97	start of transect W 3.1 north to south	ek60
22/11/2004 18:10	W 2.2 south	-53.96173	-38.52673	152.3	end of transect W 2.2	ek60
22/11/2004 13:50	W 2.2 north	-53.23826	-38.84694	3760.82	start of transect W 2.2 north to south	ek60
22/11/2004 12:30	W 2.1 north	-53.31673	-39.02855	3523.91	end of transect W 2.1	ek60
22/11/2004 08:06	W 2.1 south	-54.01021	-38.80671	199.98	start of transect W 2.1 south to north	ek60
21/11/2004 18:54	W 1.2 north	-53.3583	-39.29091	3652.75	end of transect W 1.2	ek60
21/11/2004 14:12	W 1.2 south	-54.0381	-39.09198	218.26	start of transect W 1.2 south to north	ek60
21/11/2004 13:00	W 1.1 south	-54.061	-39.3902	409.6	end of transect W 1.1	ek60
21/11/2004 08:18	W 1.1 north	-53.3473	-39.60148	4024.69	start of transect W 1.1 north to south	ek60

Event Log

Time	End Time/Date	Event Number	Latitude	Longitude	Description Code	Scientist	Station	Comment	User
25/11/2004 10:41		73	-51.63989	-37.80413	ARG	Bone et al	End of ER635 (XBT 17)	Deployed successfully	njcu
25/11/2004 10:33		72	-51.64576	-37.80092	XBT	Enderlein et al	ER635_17	Off transect due to ice	njcu
25/11/2004 09:42		71	-51.77402	-37.73505	XBT	Cunningham et al	ER635_16	Slight off trrasect (east) due to ice	njcu
25/11/2004 08:50		70	-51.90427	-37.67832	XBT	Enderlein et al	ER635 _15		njcu
25/11/2004 07:57		69	-52.03216	-37.61196	XBT	Enderlein	EA635_14		bongo

25/11/2004 07:10		68	-52.15369	-37.55839	XBT	Stevents et al	EA635_13		bongo
25/11/2004 06:08		67	-52.29119	-37.46591	XBT	Stevens et al	ER635_12	Off track due to iceberg	bongo
25/11/2004 05:18		66	-52.41549	-37.43121	XBT	Stevens et al	ER635_11	T7 after t5 failed	bongo
25/11/2004 04:10		65	-52.54671	-37.30612	XBT	Stevens et al	ER635_10		bongo
25/11/2004 03:12		64	-52.67365	-37.20495	XBT	Stevens et al	ER635_9	off track again!	bongo
25/11/2004 02:09		63	-52.80309	-37.10099	XBT	Stevens et al	ER635_8	failed at 600m - off track due to massed icebergs!	bongo
25/11/2004 01:09		62	-52.92582	-37.16257	XBT	Stevens et al	ER635_7	4 failures! Jim launching! seq. num. 38 best	bongo
25/11/2004 00:12		61	-53.05867	-37.12076	XBT	Stevens et al	ER635_6	t7 after t5 failed	bongo
24/11/2004 23:19		60	-53.1928	-37.05552	XBT	Stevens et al	ER635_5		bongo
24/11/2004 22:30		59	-53.32788	-36.99326	XBT	Stevens et al	ER635_4		bongo
24/11/2004 21:46		58	-53.45097	-36.92717	XBT	Stevens et al	ER635_3		bongo
24/11/2004 20:59		57	-53.58438	-36.86013	XBT	Stevens et al	ER635_2		bongo
24/11/2004 20:08		56	-53.71362	-36.79679	XBT	Stevens et al	ER635_1		bongo
24/11/2004 17:32		55	-53.82415	-37.60366	XBT	Bone et al	W4.2S	XBT 5 on W4.2S	njcu
24/11/2004 16:27		54	-53.67744	-37.65454	XBT	Cunningham et al	W4.2	XBT 4 on W4.2	njcu
24/11/2004 15:23		53	-53.49317	-37.71606	XBT	Enderlein et al	W4.2	XBT3 on W4.2	njcu
24/11/2004 14:20		52	-53.32583	-37.7719	XBT	Stevens et al	W4.2	XBT 2 on W4.2	bongo
24/11/2004 13:18		51	-53.15157	-37.83014	XBT	Stevens et al	W4.2N	XBT1 on W4.2	njcu
24/11/2004 12:36		50	-53.18462	-37.95659	XBT	Cunningham et al	W4.1N	XBT 5 on W4.1	njcu
24/11/2004 11:32		49	-53.33287	-37.90777	XBT	Enderlein et al	W4.1	XBT4 on W4.1	njcu
24/11/2004 10:26		48	-53.52381	-37.84351	XBT	Enderlein et al	W4.2	XBT 3 on W4.2	njcu
24/11/2004 09:10		47	-53.69546	-37.78665	XBT	Cunningham et al	W4.1	XBT2 on W4.1	njcu
24/11/2004 08:01		46	-53.86744	-37.70713	XBT	Enderlein et al	W4.1S slightly relocated east due to sea ice	XBT1 on W4.1	njcu
24/11/2004 07:57	17:32	45	-53.888	-37.68805	UOR	Bone et al	W4.1S	Transect pair WCB 4	njcu
24/11/2004 03:40	04:07	44	-53.89036	-37.90633	CTD	Fox et al	JR107 W3.2 1	140m cast (JR107_321)	bongo
24/11/2004 01:40	01:52	43	-53.72012	-37.96724	CTD	Fox et al	JR107 W3.2 2	133m cast (JR107_322)	bongo
23/11/2004 23:12	23:54	42	-53.53435	-38.02566	CTD	Fox et al	JR107 W3.2 3	1000m cast (JR107_323)	bongo
23/11/2004 21:11	21:53	41	-53.3605	-38.08238	CTD	Fox et al	JR107 W3.2_4	1000m cast (JR107_324)	bongo
23/11/2004 19:43	19:43	40	-53.18766	-38.14239	ARG	Dave Stevens	W3.2_5		bongo
23/11/2004 18:33	19:32	39	-53.18513	-38.14022	CTD	Fox et al	JR107 W3.2 5	1000m CTD cast (JR107_325)	bongo

23/11/2004 12:12		38	-53.89606	-38.23144	XBT	Enderlein et al	W3.1S	XBT 5 on W3.1 (waypoit moved due to sea ice and fog)	njcu
23/11/2004 11:16		37	-53.74279	-38.27861	XBT	Cunningham et al	W3.1	XBT 4 on W.3.1	njcu
23/11/2004 10:15		36	-53.57334	-38.33518	XBT	Enderlein et al	W3.1	XBT3 on W3.1	njcu
23/11/2004 09:11		35	-53.39818	-38.39224	XBT	Cunningham et al	W3.1	XBT2 on W3.1	njcu
23/11/2004 08:06		34	-53.25525	-38.75177	XBT	Enderein et al	W3.1N	XBT 1 on W3.1	njcu
23/11/2004 07:56	18:03	33	-53.19821	-38.45458	UOR	Cunningham et al	W3.1.N	Deployed UOR	njcu
23/11/2004 06:00		32	-53.19212	-38.45437	PNG	Fox	On transit to W3.1N	Testing Pinger	njcu
23/11/2004 04:00		31	-53.19212	-38.45437	SVP	Fox	On transit to W3.1N	Testing Sound Velocity Profiler	njcu
23/11/2004 02:27	03:23	30	-53.25517	-38.75176	CTD	Fox et al	W2.2N - 5	1000m CTD	njcu
22/11/2004 23:59	00:41	29	-53.43227	-38.69675	CTD	FOx et al	W2.2 - 4	1000m CTD	njcu
22/11/2004 21:51	22:32	28	-53.60948	-38.63654	CTD	Fox et al	W2.2 - 3	1000m CTD	njcu
22/11/2004 20:19	20:35	27	-53.78333	-38.58525	CTD	Fox et al	W2.2 - 2	Bottom depth CTD	njcu
22/11/2004 18:38	19:06	26	-53.96138	-38.52652	CTD	Stevens et al	W2.2S -1	Bottom depth CTD	njcu
22/11/2004 12:32		25	-53.29413	-39.03477	XBT	Enderlein	W2.1	XBT 5 on W2.1 (1 failed on first attempt)	njcu
22/11/2004 11:24		24	-53.4656	-38.99025	XBT	Cunningham et al	W2.1	XBT 4 W2.1	njcu
22/11/2004 10:19		23	-53.64154	-38.92887	XBT	Enderlein	W2.1	XBT3 on W2.1	njcu
22/11/2004 09:14		22	-53.81588	-38.8748	XBT	Enderlein et al	W2.1	XBT 2 on W2.1	njcu
22/11/2004 08:05		21	-53.99325	-38.81924	XBT	Enderlein et al	W2.1S	XBT 1 on W2.1S	njcu
22/11/2004 07:55	18:10	20	-54.01206	-38.80926	UOR	Bone et al	W2.1S	Transect WCB 2	njcu
22/11/2004 03:51	04:18	19	-53.84316	-38.86651	CTD	Fox et al	W1.2-1	Bottom depth CTD	njcu
22/11/2004 02:06	02:22	18	-53.84884	-38.86452	CTD	Fox et al	W1.2-2	Bottom depth CTD	njcu
21/11/2004 23:59	00:40	17	-53.45158	-39.57165	CTD	Fox et al	W.1.2-3	1000m CTD	njcu
21/11/2004 21:51	22:35	16	-53.49305	-39.24947	CTD	Fox et al	W1.2 - 4	1000m CTD	njcu
21/11/2004 20:37	21/11/2004 20:37	15	-53.31752	-39.30347	ARG	Dave Stevens	W1.2.5		bongo
21/11/2004 19:27	20:29	14	-53.31716	-39.30347	CTD	Fox et al	W1.2N - 5	1000m CTD	njcu
21/11/2004 12:57		13	-53.66956	-39.1964	XBT	Enderlein et al	W1.1S	XBT 5 on transect W1.1 (end of transect)	njcu
21/11/2004 11:51		12	-53.87803	-39.44544	XBT	Cunningham et al	W1.1	XBT4 on transect W1.1	njcu
21/11/2004 10:43		11	-53.70145	-39.49717	XBT	Enderlein et al	W1.1	XBT 3 on transect W1.1	njcu
21/11/2004 09:30		10	-53.52382	-39.55018	XBT	Enderlein et al	W1.1	XBT 2 on transect W1.1	njcu
21/11/2004 08:18		9	-53.34733	-39.60149	XBT	Cunningham et al	W1.1N	XBT1 on W1.1	njcu

21/11/2004 07:41	19:00	8	-53.35534	-39.68482	UOR	Cunningham et al	W1.1N	Start of transect	njcu
20/11/2004 22:48	23:00	7	-53.51111	-37.85068	MOO	Bone et al	Deep Mooring Site	Successful Deployment	njcu
20/11/2004 19:25		6	-53.79147	-37.95042	XBT	Cunningham/Fox	Shallow Mooring	Test XBT	njcu
20/11/2004 19:00	19:10	5	-53.79585	-37.93411	MOO	Bone et al.	Shallow Mooring Site	Deployed buoy	njcu
20/11/2004 10:00	10:38	4	-53.7956	-37.93412	mooring CTD	Fox et al	shallow water mooring		ek60
18/11/2004 16:07	16:46	3	-53.38284	-41.62988	CTD	Adele Chuck	Transect to KEP	250 m shallow CTD for trace chemistry	bongo
17/11/2004 21:15	22:59	2	-53.08096	-47.09977	MOO	Steve Mack	POL station 2	Recovery of POL mooring buoy	njcu
17/11/2004 00:03	00:03	1	-53.08096	-47.09977	ARG	Dave Stevens	On transit (Scotia Ridge)	Deployed ARGO float (UEA)	njcu