

R/V BERT CONRAD  
Cruise: RC21-02  
Line: 78

RECORDING LOG  
MCS  
Bermuda-San Juan

DFS IV  
Format: Seg B  
BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth Fath.	Pop Rate sec	Samp. Rate ms	Rec. L ms	Comments
10/4/77	3932	001	19:00	5000 <sup>ms</sup>	2847	205	4ms	12,000 <sup>ms</sup>	ON COURSE 238° - 1840 TPX-2
	3933	091	19:28	"	"	"	"	"	4 GUNS OP - SEA STATE 2
	3934	184	20:00	"	"	"	"	"	
	3935	273	20:30	"	"	"	"	"	
	3936	365	21:01	"	"	4	"	4	
	3937	453	21:31			"	"	"	
	3938	540	22:03	"	"	"	"	"	
	3939	630	22:33	"	2837	"	"	"	
	3940	727	23:05	"	2820	"	"	"	at sp 772 INCREMENT TAPE 10
	3941	816	23:35		2818	"	"	"	
	3942	909	0007	"	2806	"	"	"	
	3943	998	0037	"	2792	"	"	"	TPX 1
	3944	1094	0111	"	2784	"	"	"	MISSING 5 shots change over to PX 2
	3945	1183	0140		2767				at 01:37 ALC to 245°
	3946	1279	0214	"	2752	"	"	"	MISSING 4 shots change over to PX 2
	3947	1368	0243	"	2730	"	"	"	
	3948	1461	0315	"	2707	"	"	"	
10/5/77	3949	1551	0346	5000	2687	20	4	12000	missed shot 1550 (late response) TPX 1
	3950	1644	0417	"	2677	"	"	"	
			0430						ALC to 237°

R/V BERT CONRADCruise: RC21-02Line: 79RECORDING LOG  
MCS

Bermuda-San Juan

DFS IV

Format: Seq B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth Fath	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
10/5/77	3951	1732	04:48	5000	2670	20	4	12000	
			05:00						A/C → 230°
	3952	1824	05:19	"	2647	"	"	"	
	3953	1912	05:49	"	2608	"	"	"	
	3954	2004	06:20	"	2564	"	"	"	
	3955	2092	06:50	"	2494	"	"	"	
			07:00						A/C → 238°
	3956	2185	07:22	"		"	"	"	
	3957	2273	07:52	"	2293	"	"	"	
	3958	2366	08:24	"	2160	"	"	"	SHOT 2408 - 4 SEC DELAY
	3959	2455	08:54	4000	2140	"	"	"	
	3960	<del>2542</del> 2562	09:26	4000	2195	"	"	"	BAD TAPE SHOTS LOST 24
	3961	2650	10:01	4000		"	"	"	CHANGE TAPE ID TO 61
	3962	2743	10:32	4000	2237	"	"	"	
	3963	2832	11:03	4000	2229	"	"	"	
	3964	2925	11:35	4000	2282	"	"	"	GUNS 3+ OFF GUN 3 FIRING CONTIN.
	3965	3013	12:05	4000	2298	"	"	"	
	3966	3109	1238	"	2318	"	"	"	Missing 5 shots change over to x 2
	3967	3197	1308		2341	"	"	"	
	3968	3290	1339	"	2348	"	"	"	at 3338 GUN #3 BACK ON

Line: 79

M C S

BERMUDA - SAL JOAN

BPI: 800

[illegible]

R/V LIBERTY CONRAD  
 Cruise: RC21-02  
 Line: 80

# RECORDING LOG

MCS

*Bermuda - San Juan*

DFS 1v

Format: Seq B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth fathoms	Pop Rate Sec	Samp. Rate MS	Rec. L. MS	Comments
7 Oct 77	3976	001	5:40	00	272	20	4	12000	
	3977	087	6:10	"	294	"	"	"	
	3978	178	6:39	"	316	"	"	"	
	3979	265	7:10	"	336	"	"	"	
	3980	356	7:41	"	365	"	"	"	
	3981	443	08:11	"	405	"	"	"	
	3982	536	08:42	"	410	"	"	"	
	3983	623	09:12	"	411	"	"	"	
	3984	<del>715</del> 725	09:48	"	455	"	"	"	MISSSED 10 SHOTS BAD TAPE
	3985	812	10:17	"	552	"	"	"	
	3986	904	10:48	"	582	17	"	"	CHANGE POP-911 SHOT
	3987	991	11:14	"	710	11	"	"	
	3988	1085	11:41	"	852	"	"	"	
	3989	1120	12:06	"		"	"	"	
	3990	1262	1233	1000	952	17	17	11	at SP 1268 change POP, rate to 18ms
	3991	1349	1259	11	988	18sec	11	11	
	3992	1440	1327	11	1046	11	11	11	
	3993	1528	1356	11	1131	20ms	11	11	CHANGED POP TO 20 SEC. 1472 SHOT
	3994	1620	1428	11	1144	11	11	11	at 1655 changed POP TO 17 sec.
	3995	1706	1454	11	1347	17	11	11	

R/V ERT CONRAD  
 Cruise: RC21-02  
 Line: 80

RECORDING LOG  
 MCS

*Bermuda - San Juan*

DFS IV

Format: seg B

BPI: 806

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate Sec	Samp. Rate MS	Rec. L. MS	Comments
<i>Oct 07 1977</i>	3996	1798	1521	1000	1408	17ms	4ms	12,000	at SP 1846 changed pop rate to 18ms.
	3997	1886	1548	2000	1456	18ms	4ms	12,000	change delay to 2,000ms at SP 1886
	3998	1978	1616	2000	1544	18	4	12,000	
	3999	2065	1643	"	1619	"	"	"	
	4000	2156	1711	"	1666	"	"	"	
		2242							2242 last shot type 4000
	4001	2244	1738	2000	1718	18	4	12,000	mixed shot 2243 TPX-1 late response
	4002	2335	1806	"	1730	"	"	"	
	4003	2421	1832	"	1760	"	"	"	
		2429				19.7			firing rate (pop rate) now 19.7 sec.
									shot 2429 first shot after change
	4004	2512	1902	2000	1792	19.7	4	12,000	
	4005	2599	1930	"	1826	"	"	"	
			1936						A/C to 095°
	4006	2690	1959	"	1860	"	"	"	
	4007	2777	20:28	"		"	"	"	
	4008	2868	20:57	40.00	1950	"	"	"	shots 2848 & 49 missing 2 SEC DELAY SHOT 2868
	4009	2957	2128	"	1980	19.7	"	"	SHOT 2957 MISSING
	4010	3048	2203	"		20.0	"	"	at SP 3003 changed delay 3000
	<del>4011</del>	<del>3048</del>	<del>2203</del>						AIR GUNS EXTATIC WHOLE TAPE BAD

R/V F ERT CONRAD  
Cruise: 2021-02  
Line: 80B

# RECORDING LOG

M C S

BERMUDA + SAN JUAN

DFS IV  
Format: Sep B  
BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay	Depth FMS	Pop Rate	Samp. Rate	Rec. L.	Comments
	4011	0001	2302	3000	2000	20	4MS	1000	Reset shot counter. Bad power supply. Back
	4012	0094	2333	4000	2120	"	"	"	30X. - 4 SEC DELAY - SH 92
	4013	0183	0004	4000	2155	"	"	"	
	4014	276	0036	"	2215	"	"	"	TPX-2
	4015	365	0106	"	2239	"	"	"	
	4016	462	0140	"	2274	"	"	"	Missed 3 shot change over to X2
	4017	551	0209	"	2300	"	"	"	at SP 520 Guns #1, 4 OFF
	4018	648	0242	"	2321	"	"	"	at SP 569 Gun #1, 4, BACK ON
	4019	737	0313	"	2342	"	"	"	
	—	829	0345						829 Next shot tape 4019, missed shots 830-835
	4020	836	0347	"	2372	"	"	"	
	4021	924	0417	"	2396	"	"	"	
	4022	1017	0448	"	2410	"	"	"	
	4023	1106	0518	"	2434	"	"	"	
	4024	1199	0550	"	2439	"	"	"	
	4025	1287	0620	"	2455	"	"	"	
	4026	1379	0652	"	2465	"	"	"	
	4027	1467	0722	"	2475	"	"	"	
	4028	1559	0753	"	2490	"	"	"	
	4029	1647	0823	"	2499	"	"	"	

Line: 80

RECORDING LOG  
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BERMUDA - SAN JUAN

BPI: 800

[illegible]

R/V ROBERT CONRAD

Cruise: 21-02

Line: 81

RECORDING LOG  
MCS

BERMUDA - SAN JUAN

DFS I.

Format: SEPB

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
	4039	0001	1409	2000	2600	16.4	4MS	12,000	TPX-1
	4040	92	1434	2000	2580	16.4	4MS	12,000	
	4041	185	1506	2000		16.4	4MS	12,000	Missed 7 shots changed over tape 1
	4042	276	1525	11	2558	11	11	11	
	4043	363	1549	11	2558	11	11	11	
		454							454 last shot tape 4043, missed shot 455
	4044	456	1615	2000	2538	16.4	4	12000	
	4045	543	1638	"	2531	"	"	"	
	4046	635	1703	"		"	"	"	bad tape missed shots 635-652
	4046	653	1708	"	2511	"	"	"	
	4047	740	1732	"	2496	"	"	"	
	4048	832	1758	"	2478	"	"	"	missed shot 831
	4049	920	1822	"	2472	"	"	"	missed shot 919
	4050	1018	1849	"	2469	"	"	"	missed shots 1012-1017
		1063				17.6			shot 1063 first shot at new pop rate 17.6 sec
	4051	1105	1913	"	2466	"	"	"	
	4052	1200	1941	"		"	"	"	missed shots 1196-1199/1212
	4052	1213	1945	2000	2460	17.6	4	12,000	Bad tape (tape end light on, took 3 shots, quit)
	4053	1300	2010	"	2400				
	4054	1407	2041						LOST SHOTS - BEGINNING OF TAPE PURITY



R/V E. LERT CONRAD

Cruise: 21-02

Line: 81

RECORDING LOG  
MCS

DFS 1.

Format: SEPB

BPI: 800

BERMUDA - SAN JUAN

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. MS L.	Comments
	4055	1493	2106	2000		17.6	4	12K	
	4056	1585	2133	11	2352	17.6	9MS	12000	TPX 2.
↑	4057	1672	2152	"	2340	"	"	"	19.7 POP RATE SP 1724
↑	4058	1763	2226	"	2321	19.7	"	"	
↑	4059	1850	2254	"	2290	"	"	"	
0	4060	1942	2324	"	2262	"	"	"	
8	4061	2038	2355	11		11	11	11	<del>MISSSED</del> MISSED 10 shots change over + TPX 1
	4062	2132	0027	11	2216	19.7	11	11	at SP 2121 GUNS #4.1 off, missed 3 shots change over + TPX 2.
	4063	2219	0054	11		11	11	11	at 2150 GUNS #4.1 BACK ON,
	4064	2310	0124	11	2192	11	11	11	
1/6	4065	2397	0152	11	2154	11	11	11	
OCT 09 1977	4066	2489	0222	11	2120	11	11	11	
	4067	2576	0250	11	2082	11	11	11	
	4068	2668	0320	11	2048	11	11	11	
	4069	2756	0349	11	2006	11	11	11	TPX 1
	4070	2847	0418	"	1940	"	"	"	
			0436						Sandbuoy - aux. channel 3
		2935	0446						2934 last shot tape 4070
	4071	2951	0452	"	1794	"	"	"	bad tape missed shots 2935 - 2950
		3043	1005	shot tape 4071					

R/V E. E. CONRAD  
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Line: 81

# RECORDING LOG

MCS

Bermuda-Sam Juan

DFS I.  
Format: Seq B  
BPI: 800

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Date	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth Fms	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
10/9/77	4072	3044	5:22	2000	1859	19.7	4	12000	
OCT 09 1977	4073	3131	5:50	"	1813	"	"	"	{ 3222 last shot tape 4073
	4074	3231	6:23	"	1765	"	"	"	missed shots 4 3223-3230
	4075	3318	6:51	"	1699	"	"	"	(tape end light on, tape quit after 2 shots)
	4076	3409	7:20	"	1630	"	"	"	
	4077	3496	7:49	"	1601	"	"	"	
	4078	3587	0818	"	1595	"	"	"	
		3630	0833						LAST SHOT SHOT DOWN GUNS
	4079	0003	2302	2000	1840	19.7	4	12K	21.8 POP RATE
	4080	0088	2332	"	1780	21.8	"	"	ALL GUNS OFF. - MISSED FIRST 2 SHOTS
	4081	179	0005	"		21.8	"	"	POP RATE 22.9 SP. 142
	4082	266	0037	"	1644	21.0	"	"	POP RATE 21.0 SP. 203
	4083	357	0109	"	1566	"	"	"	
OCT 10 1977	4084	444	0140	"	1494	"	"	"	at 531 GUNS #4, 1 off.
	4085	535	0213	"	1438	"	"	"	at 560 GUNS #4, 1 BACK ON.
	4086	622	0244	"	1380	"	"	"	
	4087	713	0317	"	1349	"	"	"	
	4088	800	0348	"	1331	"	"	"	END
	4089	891	0420	"	1338	"	"	"	

Line: 81

RECORDING LOG  
MCS

Bermuda-San Juan

BPI: 800

1  
2

[illegible]

Line: 82

Bermudez-Sew Jacar

BPI: 800

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[illegible]

R/V R. ERT, CONRAD

Cruise: RE21-02

Line: 83

## RECORDING LOG

MCS

BERMUDA SAN JUAN

DFS 1

Format: Seg B

BPI: 800

(13)

Date	Tape #	Shot Point #	Time GMT	Trip Delay	Depth Fms	Pop Rate	Samp. Rate	Rec. L.	Comments
Dec 1 1977	4107	0001	0235	-0-	350	21	4ms	12000	start line #83
	4108	89	0306	-0-		"	"	"	TPX 1. at SP 172 POP RATE TO 24.0 sec
	4109	180	0339	-0-	350	24.0	"	"	
	4110	268	0415	"	350	"	"	"	
	4111	360	0453	"	350	"	"	"	
	4112	447	0528	"	336	"	"	"	
	4113	538	0605	"	336	"	"	"	
	4114	624	0640	"	345	"	"	"	
	4115	715	0718	"	337	"	"	"	
	4116	802	0753	"	341	"	"	"	
	4117	0893	0830	"	339	"	"	"	COURSE CHANGE TO 195° TO MAKE GOOD 145°
	4118	0979	0906	"	351	"	"	"	
	4119	1071	0943	"	361	"	"	"	
	4120	1157	1018	"	383	"	"	"	
	4121	1259	1059	"	394	"	"	"	missed 15 shots
	4122	1346	1135	"	406	"	"	"	
	4123	1438	1212	-0-	412	24	4ms	12000	Ship speed 3.5 knots, ALL channel VOY
	4124	1525	1248	-0-	422	24	4ms	12000	Noise. at SP 479 GUNS #4, 1 OFF
	4125	1616	1325	-0-		"			at SP 1512, GUNS #4, 1 BACK ON.
	4126	1702	1404		430	29.0			at SP 1650 POP Rate 29.0 sec
									at SP 1766 POP Rate 22.0 sec

R/V ROBERT L. CONRAD

Cruise: 21-02

Line: 83

RECORDING LOG  
MCS

BERMUDA → SAN JUAN

DFS I. 15

Format: Seq B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate	Samp. Rate	Rec. L.	Comments
Oct 12 1977	4147	3604	0155	1000	1335	20.5	4ms	120004	at SP 3650 pop rate 22.9
	4148	3691	0226	"	1350	21.4			at SP 3725 pop rate 21.4
	4149	3791	0303	"					lost 9 shots change over to P 2
	4150	3878	0333	1000	1381	21.4	"	"	at SP 3815 Guns #1.4 OFF
		3943	0357	"		21.4	"	"	all guns firing again
	4151	3969	0406	"	1394	"	"	"	
	4152	4056	0437	"	1408	"	"	"	
	4153	4147	0510	"	1431	"	"	"	
	4154	4234	0541	"	1446	"	"	"	56 due to current this pop rate corresponds
	4155	4325	0613	"	1462	"	"	"	to 20.5 seconds over land.
	4156	4412	0644	"	1461	"	"	"	6:00-7:00 23.4 pop rate equivalent
	4157	4503	0717	"	1463	"	"	"	
	4158	4590	0748	"	1461	"	"	"	
	4159	4681	0821	"	1529	"	"	"	
	4160	4768	0852	"	1576	"	"	"	
	4161	4850	0925	2000	1590	"	"	"	DELAY 1 SEC.
	4162	4947	0956	"	1618	"	"	"	
	4163	5038	1028	"	1704	"	"	"	
	4164	5125	1100	"	1690	"	"	"	
	4165	5217	1132	"	1698	"	"	"	

R/V ROBERT CONRAD

Cruise: 21-02

Line: 83

RECORDING LOG  
MCS

BERMUDA — SAN JUAN

DFS I.

Format: SEC. B

BPI: 800

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Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate	Samp. Rate MS	Rec. L. MS	Comments
	4166	5303	1204	2000	1704	21.4	4	12K	
1	4167	5395	1236	11	1709	11	11	11	
1	4168	5482	1307	11	1723	11	11	11	
5	4169	5573	1340		1741				at SP 5647 pop rate to 21.8
0	4170	5660	1411	2000	1754	21.8	4.0MS	12000	
12	4171	5771	1444	11	1772	11	11	11	at SP 5813 pop rate to 20.9
→ 12	4172	5838	1514	11	1808	20.9	11	11	RADIO NOISE - this tape
	4173	5929	1545	11	1840	11	11	11	
	4174	6016	1615	"	1900	"	"	"	
	<del>4175</del>	6105	1646						last shot tape 4174 - now circling
			Circling						to re-survey an area lost due to noise
			1700		1904				
	4175	6566	1922	2000	1796	20.9	4.0	12000	resume recording
			1939						at 19:39, back on line 83
	4176	6653	1952	11	1830	11	11	11	
	4177	6744	2023	11	1883	11	11	11	
	4178	6831	2052	11	1896	11	11	11	
	4179	6922	2124	11	1934	11	11	11	
	4180	7009	2153	11	1940	11	11	11	

R/V ROBERT L. CONRAD

Cruise: 2102

Line: P3

RECORDING LOG  
MCS

BERMUDA - SAN JUAN

DFS 1.

Format: SEC B

BPI: 800

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Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC.	Samp. Rate MS	Rec. L. MS	Comments
120577	4181	7100	2225	2K	1950	20.9	4	12K	SONO 8007 - 2219 GMT SP7085
	4182	7187	2254	"	1978	"	"	"	
	<del>4182</del>	<del>7272</del>	<del>2327</del>	"	1988	"	"	"	<del>53975 LOST</del>
	4183	7314	2338	"		"	"	"	27 SHOTS LOST
10/13/77	4184	7402	0007	3K	1985				SP351 - 1 SEC DELAY
	4185	7500	0041	3000	1995	"	"	"	lost 6 shots to X2
	4186	7588	0113	"	1977	"	"	"	
	4187	7681	0143	"	1980	"	"	"	
	4188	7769	0213	"	2045	22.4	"	"	change Pop Rate to 22.4
	4189	7862	0247	"	2098	"	"	"	
	4190	7950	0320	"	2108	"	"	"	at SP 8010 Pop Rate 23.4
	4191	8044	0357	"	2130	23.4	"	"	
	4192	8132	0431	"	2154	"	"	"	20.9
	<del>4193</del>	<del>8224</del>	<del>0507</del>	"	<del>20.9</del>	"	"	"	Change pop rate to 20.9
	<del>4193</del>	<del>8228</del>	<del>0519</del>	<del>3000</del>	<del>22.4</del>	<del>4</del>	<del>12000</del>		last shot tape 4192 is 8223
	4193	8258	0519	3000	2250	20.9	4	12000	missed shots 8224 to 8257 due to tape dysfunction
	4194	8351	0550	3000	2235	20.9	4	12000	
	4195	8438	0620	"	2260	"	"	"	
			0636						Ac → 140°



Line: 83

## M C S

Bermuda → San Juan

BPI: 800

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Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
10/13/77	4196	8527	0650	3000	2280	20.9	4	12000	missed shot 8526
	4197	8619	0721	"	2312	"	"	"	
			0750						2 air guns off
	4198	8707	0751	"	2330	"	"	"	4 GUNS ON 276°
	4199	8799	0823	"	2350	"	"	"	2 GUNS OFF
	4200	8887	0857	"	2388	"	"	"	153°
	4201	9001	0932	"	2400	"	"	"	LOST 22 SHOTS AC 153° - TXP2MALF
	4202	9089	1002	"	2405	"	"	"	
	4203	9182	1033	"	2408	"	"	"	STILL ON 2 GUNS
	4204	9270	1103	"	2401	"	"	"	1130 → 157°
	4205	9363	1135	"	2390	"	"	"	
	4206	9451	1205	"	2390				
	4207	9543	1237	"	2414	11	11	11	
	4208	9631	1307	"	2407	11	11	11	
	4209	9724	1338	11	2401	11	11	11	ALL GUNS ON 1145 SP. 9370
	4210	9812	1408	"		11	11	11	at 1420 GMT. A/C 036°
	LAST shot	9904							
		FINDLINE # 83							
		net 13/77							

R/V ROBERT L. CONRAD  
Cruise: RC 21-02  
Line: 84

RECORDING LOG  
MCS

BERMUDA - SAN JUAN

DFS 103  
Format: SEG-B  
BPI: 800

19

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
13 Oct. 1977	4211	0001	1449	3000	2393	20.9	4	12000	+PX-2
	4212	90	1519	11	2395	11	11	11	
	4213	182	1550	11	2390	19.0	11	11	change Pop Rate to 19.0
	4214	268	16:19	3000	2390	19.0	4	12000	
	4215	360	16:48	"	"	"	"	"	Bad tape (parity errors) last shot tape 4214 is 359 missed shots 360-371
	4215	372	16:54	3000	2390	19.0	4	12000	
	4216	466	17:23	"	2372	"	"	"	
	4217	559	17:53	"	2370	18.6	4	12000	Pop 18.6 change pop rate to 18.6
	4218	647	18:20	"	2380	"	"	"	
	4219	739	18:49	"	2365	"	"	"	
	4220	826	19:15	"	2346	"	"	"	
			19:29						Sonobuoy released
	4221	919	19:44	"	"	"	"	"	918 last shot tape 4220, missed
	4221	933	19:47	3000	2282	18.6	4	12000	shots due 919-932 due to machine
	4222	1021	20:15	"	2232	"	"	"	dysfunction
	4223	1114	20:44	"	2198	"	"	"	
	4224	1202	21:11	"	2170	19.7	"	"	POP RATE 19.7
	4225	1260	21:30	"	2136	"	"	"	ALL TAPE COULD BE DEAD
	4226	1348	21:58	"	2060	"	"	"	
	4227	1441	22:28	"	"	"	"	"	

R/V ROBERT CONRAD

Cruise: 21-02

Line: 84

## RECORDING LOG

MCS

Bermuda-San Juan

DFS IV

Format: Sec B

BPI: 800

20

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate Sec	Samp. Rate MS	Rec. L. MS	Comments
13 Oct 77	4228	1529	2257	3000	1994	19.7	4	12K	
	4229	1622	2327	"	1914	"	"	"	
	4230	1710	2356	"	1834	"	"	"	
10/14/77	4231	1816	0030	"	1805	"	"	"	lost 14 shots TPX-2 fault
	4232	1904	0059	"	1815	"	"	"	
	4233	1999	0130	"	1820	"	"	"	missed 1 shot TPX-2
	4234	2087	0158	"	1822	"	"	"	
	4235	2188	0231	"	1798	"	"	"	Lost 9 shots TPX-2
	4236	2276	0259	"	1853	"	"	"	
	4237	2393	0337	3000	1960	19.7	4	"	lost 25 shots due TPX 2
	4238	2481	0406	"	2134	"	"	"	
		<del>2583</del>		"		"	"	"	<del>2586</del> lost shot tape 4238 is SP 2573
	4239	2594	0443	"	2210	"	"	"	missed shots 2587-2593, TPX-2
	4240	2682	0511	"	2276	"	"	"	
	4241	2775	0541	"	2330	"	"	"	
	4242	2863	0610	"	2383	"	"	"	
	4243	2955	0640	"	2440	"	"	"	
	4244	3044	0709	"	2470	"	"	"	
	4245	3137	0739	"	2555	"	"	"	
	4246	3225	0807	"	2586	"	"	"	

Line: 24

RECORDING LOG  
MCS

BERMUDA - SAN JUAN

BPI: 800

31

[illegible]

R/V ROBERT CONRAD

Cruise: 21-02

Line: 85

## RECORDING LOG

MCS

BERMUDA — SAN JUAN

DFS IV

Format: SEG. B

BPI: 200

22

Date	Tape #	Shot Point #	Time GMT	Trip Delay SEC	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
15 OCT.	4253	0001	1956	4	2706	21.8	4	12K	
	4254	0105	2033	"	2706	"	"	"	
1977	4255	0198	2107	"		"	"	"	
	4256	0302	2144	"	2698	"	"	"	
	4257	0394	2217	"	2662	"	"	"	
	4258	0498	2254	"	2678	"	"	"	
	4259	0592	2328	"	2670	"	"	"	
10/16/77	4260	696	0005	"	2670	"	"	"	
	4261	789	0038	"	2669	"	"	"	
	4262	893	0115	"	2660	"	"	"	
	4263	986	0149	"	2640	19.7	"	"	at SP 986 Pop Rate to 19.7
	4264	1090	0222	"	2590	19.7	"	"	
	4265	1183	0252	"	2538	"	"	"	
	4266	1287	0326	"	2479	"	"	"	
	4267	1380	0356	"	2407	21.4	"	"	
	4268	1484	0434	"	2285	"	"	"	
	4269	1577	0507	"	2234	"	"	"	
	4270	1681	0544	"	2182	"	"	"	
	4271	1774	0617	"	2115	"	"	"	
	4272	1878	0655	"	2032	"	"	"	

R/V ROBERT CONRAD

Cruise: 21-02

Line: 85

## RECORDING LOG

M C S

Bermuda-San Juan

DFS IV

Format: *seg B*BPI: *800*

23

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth fms	Pop Rate sec	Samp. Rate ms	Rec. LMS	Comments
10/16/77	4273	1972	0728	3	1932	21.4	4	12K	change trip delay to 3 sec, missed shot 1971
	4274	2077	0806	"	1770	"	"	"	
	4275	2170	0839	"	1728	"	"	"	0906 AC 242°
	4276	2374	0916	"	1747	"	"	"	
	4277	2367	0950	"	1777	"	"	"	
	4278	2471	1027	"	1822	"	"	"	
	4279	2564	1100	"	1852	"	"	"	
	4280	2668	1138	"	1884	"	"	"	
	4281	2771	1211	"	1884	"	"	"	
	4282	2862	1251	"	1908	"	"	"	
	4283	2956	1321	3	1915	"	"	"	
	4284	3061	1358	3000	1924	19.7	"	"	at sp 3061 - change pop rate to 19.7 sec
	4285	<del>3000</del> 3154	1428	"	1932	"	"	"	14:46, Senobuoy into water
	4286	3258	1502	"	1942	18.6	"	"	at sp 3259 change pop rate to 18.6 sec
	4287	3351	1531	"	1954	"	"	"	
	4288	3455	1603	"	1972	"	"	"	
	4289	3548	1631	"	1974	"	"	"	
			1605						A/C → 235°
			1635						A/C → 241°
	4290	3652	1703	3000	1974	18.6	4	12K	

Line: 85

RECORDING LOG  
MCS

Bermuda-Sam Juan

BPI: 800

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[illegible]

R/V ROBERT CONRAD

Cruise: 21-02

Line: 86

## RECORDING LOG

MCS

BERMUDA - SAN JUAN

DFS IV

Format: SEC D

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay SEC	Depth FMS	Pop Rate SEC	Samp. Rate HRS	Rec. L. HRS	Comments
16 OCT	4296	0001	2115	3	1996	24.0	4	12K	030° 1/2" NOISE, EEL FLOATING
	4297	0094	2153	"	1986	"	"	"	
1977	4298	0195	2234	"	1980	"	"	"	EEL FLOATING BAD WEATHER SP. 0287 LAST - 2312 GMT
↑	4299	0196 <sup>032</sup>	1004	"	1913	"	"	"	TAPE HAS 4300 ON FIRST 10 SHOTS - EEL STILL FIRST SHOT STILL LINE 86 DAD
	4300	0300 <sup>032</sup>	1045	"	1907	"	"	"	070°
10/17/77	4301	0477	1123	"		"	"	"	0650
↓	4302	581	1206	"	1902	"	"	"	
✓	4303	674	1244	"	1898	"	"	"	
	4304	778	1326	"	1904	"	"	"	
↓	4305	871	1404	"	1914	"	"	"	
↓	—	960	1441						Last Shot. 960
18 OCT	4306	961	0957	"	1795	20.0	"	"	21.0 POP - SP. 966 - FIRST SH. 961
	4307	1053	1030	"	1776	21.8	"	"	040° → 1041 GMT → 045°
77	4308	1158	1107	"	1755	"	"	"	
	4309	1252	1141	"	1692	"	"	"	
	4310	1355	1212	"	1686	"	"	"	
	4311	1442	1251	"	1664	"	"	"	
	4312	1553	1329	"	1642	"	"	"	
	4313	1646	1402	"		"	"	"	
	4314	1750	1439	"	1660	22.9	"	"	



Line: 86

RECORDING LOG  
MCS

BERMUDA - SAN JUAN

BPT: 800

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[illegible]

R/V ROBERT CONRAD

Cruise: 21-02

Line: 87

## RECORDING LOG

MCS

Bermuda - San Juan

DFS IV

Format: Seq B

BPI: 800

(27)

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth FMS	Pop Rate sec	Samp. Rate MS	Rec. L. MS	Comments
10/18/77	4322	003	1936	3.000	1607	19.7	4	12000	mixed shots 001-002
		016				17.6	"	"	change pop rate to 17.6 sec between
	4323	102	2005	3K	1600	17.6	"	"	sp 015 and sp 016 - 146°
	4324	0206	2036	"	1614	"	"	"	
	4325	0300	2102	"		"	"	"	
	4326	405	2133	"	1645	"	"	"	
	4327	0498	2200	"	1679	"	"	"	1250 SP 532 SONODUOY 2210 GMT
	4328	0602	2230	"	1695	"	"	"	
	4329	0695	2258	"	1711	17.0	"	"	POT RATE 17.0 -
	4330	0799	2323	"	1717	"	"	"	150° c/s - 2330 GMT
	4331	890	2354	"	1716	17.9	"	"	Pot Rate 17.9 at sp 990
10/19/77	4332	993	0025	"	1718	"	"	"	
	4333	1086	0051	"	1742	"	"	"	
	4334	1192	0123	"	1780	"	"	"	BLACK BOX OFF. mixed shots, Red POWER SUPPLY
	4335	1286	0150	"		"	"	"	
	4336	1389	0222	"	1810	"	"	"	
	4337	1482	0252	"	1823	"	"	"	
	4338	1586	0319	"	1825	"	"	"	
	4339	1679	0347	"	1839	"	"	"	
	4340	1783	0417	"	1840	"	"	"	

R/V ROBERT CONRAD

Cruise: 21-02

Line: 87

## RECORDING LOG

M C S

Bermuda → San Juan

DFS IV

Format: *Log B*

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth FMS	Pop Rate sec	Samp. Rate MS	Rec. L. MS	Comments
10/19/77	4341	1876	0444	3000	1849	17.9	4	12000	
	4342	1980	0514	"	1820	"	"	"	
		2072		"		"	"	"	last shot tape 4342 is sp 2072
	4343	2078	0543	"	1792	"	"	"	missed shots 4 2073-2077
	4344	2182	0613	"	1783	18.6	"	"	<del>18.6</del> change pop rate → 18.6 sec
	4345	2275	0642	"	1808	"	"	"	18.2
	4346	2380	0714	"	1846	"	"	"	
		2402	0721	"					Sonobuoy launched
	4347	2473	0743	"	1920	"	"	"	18.6 pop
	4348	2578	0815	"	1917	"	"	"	
	4349	2671	0844	"	1921	21.0	"	"	POP 21 — 130°
	4350	2775	0921	"	1939	19.5	"	"	POP 19.5 —
	4351	2868	0951	"	1951	"	"	"	
	4352	2972	1025	"	1978	18.5	"	"	POP 18.5
	4353	3064	1053	"	2116	"	"	"	
	4354	3169	1125	"	2165	"	"	"	
	4355	3261	1154	"		"	"	"	
	4356	3365	1226	"		"	"	"	at SP 3390 Guns 1, 4, off.
	4357	3458	1254	"	2129	"	"	"	
	4358	3563	1327	"	1994	"	"	"	@ SP 579 - GUNS 1, 4 ON

R/V ROBERT C. CONRAD

Cruise: RC 21-02

Line: 87

## RECORDING LOG

MCS

DFS IV

Format: SEGB

BPI: 800

BERMUDA - SAN JUAN

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth FMS	Pop Rate sec	Samp. Rate ms	Rec. L ms	Comments
10/19/77	4359	3655	1355	3.000	1994	18.5	4	12000	
"	4360	3761	1428	"	2054	17.6	4	12000	C/SHOT RATE @ SP 3764
"	4361	3853	1455	"	2078	"	"	"	
"	4362	3958	1525	"	2128	"	"	"	
"	4363	4051	1551	"	2152	"	"	"	MISS SP 4050
"	4364	4154	1622	"	2156	"	"	"	
	4365	4246	1649	"	2148	"	"	"	
	4366	4350	1719	"	2132	"	"	"	
	4367	4443	1746	"	2111	"	"	"	
	4368	4547	1817	"	2100	"	"	"	
	4369	4640	1844	"	2088	"	"	"	
	4370	4744	1914	"	2083	"	"	"	
	4371	4837	1941	"	2077	"	"	"	
		4839	1941						sonobuoy launched
	4372	4942	2012	"	2055	"	"	"	
	4373	5036	2039		2033				
	4374	5140	2109						
	4375	5233	2136	"	2053	"	"	"	
	4376	5338	2207	"	2052	"	"	"	
	4377	5431	2234	"	2044	"	"	"	150°

R/V ROBERT L. CONRAD

Cruise: RC21-02

Line: 83

## RECORDING LOG

MCS

BERMUDA SAN JUAN

DFS I.

Format: <sup>④</sup> Seg B

BPI: 800

Date	Tape #	Shot Point #	Time	Trip Delay ms	Depth FMS	Pop Rate	Samp. Rate	Rec. L.	Comments
4/12/77	4127	1792	1445	-0-	448	22	4MS	12,000	EEL floating VERY NOISE ALL channels
	4128	1879	1518	-0-	457	22.0	"	"	
	4129	1971	1552	-0-	466	"	"	"	
	4130	2059	1626	0	480	22.0	4	12,000	
	4131	2149	1659	0	490	"	"	"	
	4132	2236	1732	"	510	"	"	"	missed shots 2326-2331
	4133	2332	1808	"	530	"	"	"	
	4134	2419	1840	"	554	"	"	"	
	4135	2511	1915	"	625	"	"	"	missed shot 2510
	4136	2598	1947	"	681	"	"	"	
	4137	2690	2026	"	710	"	"	"	
	4138	2778	2055	"	850	"	"	"	LOST 20 SHOTS
	4139	2890	2137	"	1103	"	"	"	lost 6 shots for 2
	4140	2978	2210	"	1164	"	"	"	GUNS 1+4 OFF SP972 ON SP 3038
	4141	3070	2244	"	1205	"	"	"	
	4142	3157	2317	"	1243	"	"	"	
	4143	3348	2351	"	<del>1286</del>	"	"	"	at 3319 Pop rate 20.5
	4144	3335	0023	"	1286	20.5	"	"	at SP 3339 <del>DELAY</del> ON 1000MS
	4145	3426	0054	1000	1300	20.5	"	"	
	4146	3513	0124	1000	1319	20.5	4MS	12,000	

Line: 87

RECORDING LOG  
MCS

BPI: 800

BERMUDA → SAN JUAN

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[illegible]

R/V ROBERT CONRAD  
Cruise: RC 21-02  
Line: 88

RECORDING LOG  
MCS

BERMUDA → SAN JUAN

DFS IV  
Format: Seg B  
BPI: 800

(31)

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
10/20/77	4381	0001	0055	3000ms	2134	17.6	4ms	1200	START LINE #88
	4382	107	0126	"	2180	"	"	"	
	4383	200	0153	"		"	"	"	
	4384	305	0224		2142	21.8			change pop rate to 21.8 at sp 394
	4385	398	0253	"	2280	21.8	"	"	
10/20/77	4386	502	0335	"	2326	23.9	"	"	change pop rate to 23.9 at sp 502
	4387	595	0408	"	2346	21.8	"	"	at 8515 pop rate 21.8
	4388	699	0445	"	2368	"	"	"	
	4389	792	0519	"	2380	"	"	"	
	4390	896	0556	"	2402	"	"	"	
		8988							last shot tape 4390 at sp 988 missed
	4391	991	0631	3000	2420	21.8	4	12000	shots 989-990
	4392	1095	0707	"	2442	"	"	"	
	4393	1188	0740	"	2467	"	"	"	
	4394	1292	0818	"	2485	"	"	4	2470
	4395	1385	0851	"	2492	"	"	4	
	4396	1490	0928	"	2491	"	"	4	NO. 1 GUN OFF 0940
	4397	1583	1002	"	2483	23.4	"	"	POT RATE 1645 SP. - 23.4 SEC. - 257°
	4398	1687	1040	"	2469	"	"	"	SP1730 GUN 1 ON -
	4399	1780	1117	"	2468	"	"	"	

R/V ROBERT CONRAD

Cruise: RC 2102

Line: 88

RECORDING LOG  
MCS

BERMUDA → SAN JUAN

DFS IV

Format: SEL D

BPI: 800

32

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
20 OCT	4400	1885	1158	3K		23.4	4	12K	1215 GMT GUNS 1.4 OFF.
	4401	1977	1234	"		"	"	"	1245 GMT GUNS 1.4 ON AT SP 2008
1977	4402	2084	1316	"	2474	"	"	"	MISSED 3 shots + PX 1
	4403	2177	1352	"	2482	"	"	"	
1977	4404	2281	1433	"	2469	20.9	"	"	
	4405	2374	1505	"	2500	20.9	"	"	
	4406	2478	1540	"	2476	"	"	"	
	4407	2571	1612	"	2432	"	"	"	
	4408	2675	1647	"	2383	"	"	"	
	4409	2768	1719	"	2363	"	"	"	
	4410	2873	1755	"	2410	18.2	"	"	change pop rate to 18.2 sec.
	4411	2966	1824	"	2440	"	"	"	
	4412	3070	1855	"	2493	"	"	"	
	4413	3162	1924	"	2523	"	"	"	
	4414	3266	1956	"	2540	"	"	"	
	4415	3359	2025	"	2547	"	"	"	
	4416	3463	2057	"	2556	"	"	"	19.3 POP AT SP3463
	4417	3556	2127	"	2573	"	"	"	
	4418	3661	2200	"	2581	"	"	"	SONOBUOY SP 3730 - 2222 GMT
	4419	3754	2231	"	2598	18.6	"	"	18.6 POP AT SP



Line: 83

RECORDING LOG  
MCS

BERMUDA → SAN JUAN

BFI: 800

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[illegible]

R/V ROBERT CONRAD

Cruise: RC21-02

Line: 89

RECORDING LOG  
MCS

## IPOD SURVEY

DFS IV

Format: Seq B

BPI: 800

34

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth FMS	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
10/21/77	4436	001	0709	3.000	2622	17.0	4	12.000	Begin line 89, pop rate 17.0
	4437	093	0735	"	2600	"	"	"	
	4438	197	0805	"	2615	"	"	"	150° → 180°
	4439	290	0833	"	2605	"	"	"	030°
	4440	395	0903	"	2617	"	"	"	
	4441	487	0930	"	2619	17.9	"	"	17.9 POP RATE
	4442	592	1001	"	2623	"	"	"	GUNS 1+4 SP 615 OFF
	4443	686	1028	"	2647	"	"	"	
	4444	790	1058	"	2659	"	"	"	027°-1100 GMT
	4445	883	1125	"	2660	"	"	"	
	4446	988	1156	"	2623	"	"	"	GUNS 1+4 ON SP 949
	4447	1080	1223	"		"	"	"	
	4448	1184	1253	"	2635	"	"	"	
	4449	1277	1320	"	2635	"	"	"	
	4450	1381	1350	"	2635	"	"	"	
	4451	1475	1418	"	2633	"	"	"	missed shot 1474
	4452	1582	1450	"	2621	"	"	"	missed 3 shot.
	4453	1675	1516	"	2625	"	"	"	140° → 170° → 204°
	4454	1779	1547	"	2630	"	"	"	S/B ON (SB 32)
	4455	1872	1613	"	2630	"	"	"	

R/V ROBERT CONRAD

Cruise: R21-02

Line: 89

RECORDING LOG  
MCS

## IPOD SURVEY

DFS IV (135)

Format: Seg B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FMS	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
10/21/77	4456	1975	1644	3000	2630	17.9	4	12000	
		2065	1710	4000	"	"	"	"	after sp 2065 change delay to 4000 ms
	4457	2067	1710	4000	2626	17.9	4	12000	
		2077	1713	5000	"	"	"	"	after sp 2077 changed delay to 5000 ms
		2084	1714	"	"	"	"	6000	change record length to 6000 ms
		2124	1727	6000	"	"	"	"	after sp 2124 change delay to 6000 ms
	4458	2248	1803	6000	2622	17.9	4	6000	SONAR - STOP SP 272
	4459	2422	1854	"	2618	"	"	"	
	4460	2618	1951	"	2618	"	"	"	030°
	4461	2793	2042	"	2620	18.6	"	"	18.6 POP RATE
	4462	2988	2142	"	2627	17.9	"	"	17.9 POP RATE
	4463	3163	2233	"	2626	17.6	"	"	17.6 " "
	4464	3358	2331	"	2621	"	"	"	
10/22/77	4465	3532	0022	"	2617	"	"	"	163° A/C
	4466	3728	0119	"		"	"	"	
	4467	3902	0210	"	2614	19.7	"	"	Pop Rate - 10 19.7
	4468	4094	0312	"	2620	17.2	"	"	at SP 4012, PRESET Black Box of 4026 S/B ON (SB 33)
	4469	4268	0402	6000	2629	17.2	4	6000	
	4470	4463	0459	"	2633	"	"	"	

R/V ROBERT CONRAD  
Cruise: RC21-02  
Line: 89

RECORDING LOG  
MCS

IPOD SURVEY

DFS IV  
Format: Seq B  
BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
10/22/77	4471	4638	0550	6000	2630	17.2	4	6000	
	4472	4834	0647	"	2629	"	"	"	
	4473	5009	0739	"	2626	"	"	"	
	4474	5203	0834	"	2628	17.9	"	"	17.9 Pop
	4475	5379	0925	"	2625	"	"	"	
	4476	5574	1022	"	2628	"	"	"	
	<del>4477</del>								LAST SP 5739 POWER FAILER -
	4477	5740	1239	6000		17.9	4MS	6000	BACKTRACK TO CONT. LINE 89, check log for position
		5928	1335						STOP RECORDING at 5928, BAD power supply
	4478	5929	1354	6000	2630	17.9	4MS	6000	BACK BOX BACK RECORDING
	4479	6103	1445	"	2630	"	"	"	at SP 6031 BACK to position power
	4480	6297	1541	"	2633	"	"	"	FAILER WAS OFF
		6456	1628	"		"	"	"	sonobuoy launched
	4481	6472	1632	"	2635	"	"	"	
	4482	6667	1729	"	2635	"	"	"	
	4483	6842	1820	"	2635	"	"	"	
	4484	7038	1918	"	2634	"	"	"	
	4485	7214	2008	"	2638	"	"	"	A/C
	4486	7410	2106	"	2637	"	"	"	SONOBUOY LAUNCHED, at 2137
	4487	7584	2157	"	2636	"	"	"	

Line: 89

RECORDING LOG  
MCS

DFS IV

Format: *SEG B*

BPI: 200

37

[illegible]

R/V ROBERT CONRAD

Cruise: PC21-02

Line: 90

## RECORDING LOG

M C S

BLAKE-PLATEAU

DFS IV

Format: Seq B

BPI: 800

38

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth Fm	Pop Rate sec	Samp. Rate MS	Rec. L. MS	Comments
10/23/17	4491	0001	0147	1000	2636	18.2	4MS	12000	STAR LINE #90
	4492	103	0219	1000	2636	18.2	4	12000	
	4493	194	0247	1000	2642	11	11	11	
	4494	296	0318	11	2648	11	11	11	TOX 1
	4495	387	0346	11	2200- 1100	11	11	11	
10/23/17	4496	489	0418	11	740	11	11	11	
	4497	580	0446	11	640	11	11	11	
		615?	0452						Power out, all guns off
	4498	001	0516	1000	630	18.2	4	12000	recontinue line 90, reset shot counter
	4499	093	0545	11	614	11	11	11	
			0552	11		11	11	11	begin circle to catch data lost due to power failure, continue recording
	4500	196	06:16	11	635	11	11	11	
	4501	287	0644	11	638	11	11	11	heading
			0630	11		11	11	11	*back on line 90 at 6:30
	4502	389	0716	11	662	11	11	11	(backtracking, heading East)
	4503	480	0744	11	736	11	11	11	
	4504	582	0815	11	795	20.5	11	11	20.5 POP
	4505	671	0846	11	1171	11	11	11	<del>2.62°</del> TURNING TO
	4506	773	0921	11	675	11	11	11	2.62° <del>0943 GMT</del>
									SONOBUOY 0943 GMT SP839

R/V ROBERT CONRAD

Cruise: RC21-02

Line: 90

## RECORDING LOG

MCS

BLAKE PLATEAU

DFS IV

Format: SEG-B

BPI: 800

(39)

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
23	4507	864	0952	1K	645	20.5	4	12K	2620 SONOBUCY 0943 GMT SP834
OCT	4508	966	1027	"	620	"	"	"	
1977	4509	1057	1058	"	595	17.6	"	"	17.6 POP
	4510	1159	1128	"	583	"	"	"	
	4511	1249	1154	"	569	"	"	"	
	4512	1350	1224	"	570	"	"	"	
	4513	1441	1250	"	563	"	"	"	
	4514	1543	1320	"	562	"	"	"	
	4515	1634	1346	"	560	"	"	"	
	4516	1737	1416	"		"	"	"	TD X-1
	4517	1829	1443	"	561	"	"	"	
	4518	1930	1513	"	560	"	"	"	
	4519	2022	1539	"	558	18.2	"	"	at sp 2022, pop rate to 18.2
	4520	2124	1611	"	558	18.2	"	"	
	4521	2215	1639	"	553	"	"	"	
	4522	2317	1710	"	546	"	"	"	guns 1,4 off
			1722	"		"	"	"	Change pop rate to 17.6 sec
	4523	2409	1740	"	540	17.6	"	"	
			1742	"		"	"	"	all guns in action
	4524	2510	1809	"	536	"	"	"	

R/V ROBERT C. CONRAD

Cruise: RC21-02

Line: 90

RECORDING LOG  
MCS

Blake Plateau

DFS IV

Format: Seq B

BPI: 800

40

Date	Tape #	Shot Point #	Time GMT	Trip Delay <sub>M/S</sub>	Depth <sub>FMS</sub>	Pop Rate <sub>SEC</sub>	Samp. Rate <sub>M/S</sub>	Rec. L. <sub>M/S</sub>	Comments
10/23/77	4525	2601	1835	1000	534	17.6	4	12000	
	4526	2704	1905	"	532	"	"	"	missed shot 2795
	4527	2796	1932	"	531	"	"	"	
	4528	2898	2002	"	529	"	"	"	258°
	4529	2990	2028	"	529	17.9	"	"	POP 17.9
	4530	3092	2058	"	528	"	"	"	
	4531	3184	2125	"	528	"	"	"	at shot # 224 GUNS 1,4 OFF
	4532	3287	2155	0000	527	"	"	"	0 DELAY SP. 3287
	4533	3379	2222	0	533	"	"	"	ALL GUNS ON SP 3474
	4534	3482	2252	0	535	"	"	"	
	4535	3573	2319	0	539	"	4	"	
	4536	3676	2348	0		"	"	"	
	4537	3767	0014	0000		"	"	"	
	4538	3870	0048	11	538	11	11	11	
	4539	3961	0111	11	536	11	11	11	at SP 971 Pop rate 18.9
	4540	4064	0142	11	526	18.9	11	11	
	4541	4155	0211	11	516	11	11	11	
	4542	4258	0243	11	504	11	11	11	at shot 4283, S/B ON AUX 3
	4543	4349	0311	11	496	11	11	11	
	4544	4452	0343	11	485	11	11	11	

OCT 24 1977



R/V ROBERT CONRAD  
Cruise: RC 2102  
Line: #90

RECORDING LOG  
MCS

BLAKE PLATEAU

DFS IV  
Format: Seg B  
BPI: 800

(41)

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L MS	Comments
SEP 24 1977	4545	4544	0411	0.000	483	18.9	4	12000	
	4546	4647	0442	"	472	"	"	"	
			0509	"		"	"	"	sonobuoy launched
	4547	4739	0511	"	465	"	"	"	
	4548	4842	0542	"	462	"	"	"	
	4549	4934	0611	"	461	"	"	"	
	4550	5037	0643	"	457	"	"	"	0658 GMT GUNS 1+4 OFF
	4551	5129	0711	"	450	"	"	"	
	4552	5232	0743	"	447	"	"	"	
	4553	5324	0811	"	443	"	"	"	
	4554	5422	0841	"	447	"	"	"	
	4555	5517	0910	"	439	"	"	"	MISSING 3 SHOTS
	4556	5620	0942	"	428	"	"	"	
	4557	5712	1010	"	408	"	"	"	
	4558	5815	1042	"	399	"	"	"	2550
	4559	5905	1110	"	390	"	"	"	
	4560	6009	1142	"		"	"	"	
	4561	6100	1209	"	390	"	"	"	
	4562	6202	1240	"		"	"	"	
	4563	6293	1308	"		"	"	"	

Line: #90

## RECORDING LOG

M C S

BLAKE PLATEAU

DFS IV

Format: *Seq B*

BPI: 800

42

[illegible]

R/V ROBERT C. CONRAD

Cruise: RC 21-02

Line: 91  
START SP 7875RECORDING LOG  
MCS

FLORIDA SHELF

DFS IV

Format: SEA B

BPI: 800

43

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
24 OCT.	4580	7945	2312	0	039	22.9	4	12K	177° - ALL GUNS ON SR.860
	4581	8036	2352	"		31.8	"	"	31.8 POP
1977	4582	8139	0043	"	34	31.8	"	"	at shot point 8153, pop rate 20.9 sec
	4583	8231	0119	"	32	24.0	"	"	at shot point 8201, pop rate to 24.0 sec.
	4584	8332	0200	"	30	24.0	"	"	
	4585	8423	0237	"	39	"	"	"	
	4586	8525	0319	"	40	"	"	"	
	4587	8616	0356	"	42	"	"	"	
	4588	8718	0438	"	43	"	"	"	
	4589	8810	0516	"	44	"	"	"	
	4590	8912	0557	"	45	"	"	"	
	4591	9001	0634	"	45	18.5	"	"	Change firing rate to 18.5
	4592	9103	0705	"	45	"	"	"	
	4593	9194	0734	"	44	"	"	"	
	4594	9297	0805	"	45	"	"	"	
	4595	9389	0834	"	048	19.7	"	"	POP 19.7
	4596	9492	0907	"	048	"	"	"	
	4597	9584	0936	"	046	"	"	"	
	4598	9687	1010	"	049	"	"	"	
	4599	9778	1039	"	050	"	"	"	

R/V ROBERT CONRAD

Cruise: RC 21-02

Line: 91

## RECORDING LOG

MCS

FLORIDA SHELF

DFS IV

Format: SEGB

BPI: 800

(44)

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
25	4600	9881	1113	0	049	19.7	4	12K	GUNS OFF - NO. 36-GUN PAD
OCT	4601	9967	1151	"	"	"	"	"	SP 918 <del>CONRAD SHELF</del> GUN 3 ON DECK - OTHERS WORKING 1137 GMT ON
1977	4602	10070	1224	"	50	"	"	"	at sp 10057 S/B ON AUX 3
	4603	10161	1254	"	50	"	"	"	
	4604	10263	1328	"	51	"	"	"	
	4605	10354	1357	"	"	"	"	"	at sp 10432 GUN #3 BACK ON
	4606	10456	1430	"	57	29.0	"	"	Pop Rate 29.0 shot point 10456
	4607	10547	1515	"	54	"	"	"	
	4608	10650	1606	"	45	"	"	"	
	4609	10742	1651	"	59	"	"	"	
			1704	"			"	"	guns 1, 4 off
			1733	"			"	"	37.9 POP all guns in action
	4610	10847	1744	"	68	37.9	"	"	change pop rate to 37.9 sec mixed sp
	4611	10938	1840	"	67	"	"	"	10845-10846
	4612	11041	1944	"	079	"	"	"	gun #2 flaky, firing too soon at times
	4613	11132	2041	"	079	"	"	"	probably due to radio interference
	4614	11235	2146	"	078	34.0	"	"	pop rate to 34.0 sec
	4615	11326	2238	"	067	"	"	"	
	4616	11429	2337	"	070	24.0	"	"	POP 24.0
	4617	11519	0013	"	71	"	"	"	

R/V ROBERT CONRAD

Cruise: R21-02

Line: #91

RECORDING LOG  
MCS

FLORIDA SHELF

DFS IV

Format: seg B

BPI: 800

(45)

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate %	Samp. Rate MS	Rec. L. MS	Comments
OCT 20 1977	4618	11621	0055	-0-	82	59.9	4	12000	
	4619	11712	0140	-0-	82	29.9	11	11	
	4620	11814	0230	-0-	81	11	11	11	
	4621	11905	0314	-0-	78	11	11	11	TPY-2
	4622	12007	0405	0	74	"	"	"	
	4623	12098	0450	0	76	"	"	"	
	4624	12201	0540	0	80	"	"	"	
	4625	12292	0625	0	80	"	"	"	
	4626	12394	0715	0	79	26.6	"	"	pop rate to 26.6
	4627	12485	0755	0	077	"	"	"	
	4628	12588	0840	"	078	11	11	11	
	4629	12679	0921	"	082	"	"	4	
	4630	12780	1005	"	091	4	4	4	
	4631	12871	1045	"	094	11	11	4	
	4632	12973	1130	"	102	"	"	1	
	4633	13064	1210	11		11	11	11	
	4634	13166	1255	11	104	11	11	11	
	4635	13257	1336	11		11	11	11	
	4636	13360	1421	11	74	11	11	11	
	4637	13452	1501	11	68	23.4	11	11	c/pop rate to 23.4

Line: 91

M C S

FLORIDA SHELF

BPI:

46

SEG 15  
800

[illegible]

R/V ROBERT CONRAD

Cruise: RC21-02

Line: 92

RECORDING LOG  
MCS

Florida Straits

DFS IV

Format: Seg B

BPI: 800

(47)

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth FMS	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
Oct 26 1977	4644	001	1852	0.0	50	19.7	4	12000	127°
			1919	"		"	"	"	streamer now directly astern, turn completed
	4645	092	19:22	"	85	"	"	"	
	4646	0194	19:55	"	310	"	"	"	
	4647	0285	2024	"	315	"	"	"	
	4648	0387	2057	"	0368	"	"	"	
	4649	479	2127	"	0386	"	"	"	
	4650	0584	2202	"	0374	"	"	"	MISSED 4 ST
	4651	0675	2231	"	0397	"	"	"	
	4652	0777	2304	"	0424	"	"	"	
	4653	0868	2334	"		"	"	"	040° 2346 ANT
	4654	968	0006	"	460	"	"	"	
	4655	1059	0036	"	460	"	"	"	
	4656	1163	0110	"	462	"	"	"	MISSED shots 1161, 1162, 1163, 1164
	at 1177	0114		change	pop	Rate	to	16.0 sec	
	4657	1254	0135	"	461	16.0	4ms	12000	
	4658	1356	0203	-0-	444	16.0	4	12000	
	4659	1449	0228	0	450	"	"	"	Miss 2 Shot (1347+ 1348)
	4660	1554	0258	-0-	428	"	"	"	Missed shots 1550, 1551, 1552, 1553, 1554
	4661	1645	0322	-0-	405	"	"	"	

Line: # 92

RECORDING LOG  
MCS

BPI: 800

48

FLORIDA STRAITS

[illegible]



R/V ROBERT CONRAD

Cruise: RC21-02

Line: 93

RECORDING LOG  
MCS

The Bahamas

DFS IV

Format:

BPI: 800

19

Seg B

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FAS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
Oct 27	4671	001	7:49	0	224	16.0	4	12000	
1977	4672	104	8:17	"	246	"	"	"	
	4673	196	8:43	"	260	19.7	"	"	19.7 POP
	4674	299	0916	"	265	"	"	"	285°
	4675	390	0946	"	302	"	"	"	280°
	4676	493	1019	"	324	"	"	"	SP 565 NO 3 GUN OFF
	4677	584	1049	"	336	"	"	"	285°
	4678	686	1122	"	403	"	"	"	
	4679	777	1151	"	413	"	"	"	
	4680	879	1225	"	414	"	"	"	
	4681	971	1254	"	389	21.8	"	"	C/POP RATE 21.8
	4682	1078	1332	"	355	21.8	"	"	at SP 1054 GUN #3 BACK ON
	4683	1169	1405	"	302	17.0	"	"	Missed shots 1074, 1075, 1076, 1077. TPX-1
	4684	1271	1435	"	275	17.0	"	"	A/C 306g S/R ON AUX 3, at 1346 GMT
	4685	1362	1501	"	255	"	"	"	
	4686	1466	1532	"	218	16.0	"	"	C/POP Rate to 16.0 at shot 1466
	4687	1577	1556	"	200	16.0	"	"	Missed shots 1464, 1465. + PX-1
	4688	1658	1624	"	158	"	"	"	Missed shots 1749, 1750 TPX-2
	4689	1751	1650	"	133	"	"	"	rechecked to reflector, and quit
	4690	1852	1718	"	102	"	"	"	Radio noise

Line: 93

## RECORDING LOG

M C S

Bahamas

DFS IV

Format: *Seq B*

BPI: 800

[illegible]

R/V ROBERT CONRAD

Cruise: RC21-02

Line: 94

RECORDING LOG  
MCS

Bahamas

DFS IV

Format: Seq B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth FMS	Pop Rate sec	Samp. Rate ms	Rec. I ms	Comments
Oct 27 1977	4692	001	1812	0.0	109	16.0	4	12000	guns 1, 4 off
			1820	"		"	"	"	A/c → 130°
	4693	091	1836	"	138	19.3	"	"	Change pop rate to 19.3 sec.
	4694	194	1909	"	158	"	"	"	
	4695	285	1939	"	185	"	"	"	150°
	4696	387	2012	"	196	29.9	"	"	29.9 POP
	4697	478	2057	"	217	"	"	"	
	4698	581	2147	"	260	"	"	"	
	4699	672	2232	"	324	"	"	"	GUN 4 OFF SP 720 GUN 4 ON SP 757
	4700	774	2322	"	349	"	"	"	
Oct 28 1977	4701	865	0007	"	968	24.6	"	"	24.6 POP
	4702	967	0048	"	968	"	"	"	
	4703	1058	0125	"	394	"	"	"	
	4704	1159	0207	"	320	"	"	"	
	4705	1250	0244	"	310	17.9	"	"	E/ pop rate 17.9
	4706	1352	0313	"		17.9	"	"	
	4707	1444	0340	"	269	"	"	"	
	4708	1546	0410	"	249	"	"	"	
	4709	1637	0436	"	240	"	"	"	
			454						A/c → 104°

R/V ROBERT C CONRAD

Cruise: RC21-02

Line: 94

## RECORDING LOG

MCS

Bahamas

DFS IV

Format: Seq B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth FMS	Pop Rate sec	Samp. Rate ml/s	Rec. L. ml/s	Comments
Oct 28	4710	1739	0506	0	240	17.9	4	12000	
1977	4711	1830	0533	0	240	"	"	"	
	4712	1932	0602	"	240	"	"	"	
	4713	2023	0629	"	238	"	"	"	
	4714	2126	0659	"	236	"	"	"	
			0703	"		"	"	"	A/C → 112°
			0720	"		"	"	"	A/C → 120°
	4715	2217	0725	"	233	"	"	"	
	4716	2321	0756	"	250	"	"	"	mixed sp 2320, TPX-1
	4717	2413	0822	"	254	"	"	"	112°
	4718	2516	0852	"	263	"	"	"	118°
	4719	2607	0919	"	272	"	"	"	
	4720	2709	0949	"	327	"	"	"	SONOBUOY SP 2767
	4721	2800	1015	"	362	"	"	"	
	4722	2902	1045	"	380	"	"	"	112°
	4723	2993	1111	"	413	"	"	"	SONOBUOY SP 3027
	4724	3095	1141	"		"	"	"	SB OFF 1154 GMT
	4725	3186	1208	"	500	"	"	"	
	4726	3288	1237	"	450	"	"	"	
	4727	3380	1304	"	440	"	"	"	

R/V ROBERT C. CONRAD

Cruise: Re21-02

Line: #94

RECORDING LOG  
MCS

Bahamas

DFS IV

Format: Seg B

BPI: 800

(53)

Date	Tape #	Shot Point #	Time GMT	Trip Delay	Depth FMS	Pop Rate sec.	Samp. Rate MSC	Rec. L. MSE	Comments
OCT 28 1984	4728	3482	1334	-0-	472	17.9	4	12000	
	4729	3574	1401	-0-	504	11	11	11	
	4730	3676	1431	-0-	416	11	11	11	SONOY BUOY SP 763
	4721	3767	1457	11	506	4	4	4	
	4732	3870	1527	11	436	11	11	11	
	4733	3962	1554	11	565	11	11	11	
	4734	4065	1623	"	450	"	"	"	Murex sp 4101-4105, TPX-1
	4735	4106	1636	"	585	"	"	"	
	4736	4209	1706	"	644	"	"	"	
	4737	4300	1732	"	585	"	"	"	
	4738	4402	1802	"	490	"	"	"	
	4739	4493	1828	"	454	"	"	"	
			1855	"		"	"	"	guns 1, 4 off
	4740	4593	1857	"	563	17.0	"	"	change pop rate to 17.0 sec
	<del>468</del>	<del>468</del>							
	4740	4683	last shot tape 4740						
			1925						stop recording, all 4 guns off
		<del>4767</del>							
	4741	4684	1948	0	925	17.9	4	12000	guns #2, 3 on begin recording
									change pop rate to 17.9 -

AT SP 712 WE  
CHANGED TO 796DUE TO TIME LOST  
OVER GROUND

R/V ROBERT CONRAD

Cruise: RC21-02

Line: #94

RECORDING LOG  
MCS

BAHAMAS

DFS IV

Format: SEG B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay	Depth FMS	Pop Rate sec	Samp. Rate MS	Rec. L. MS	Comments
28	4742	4970	2018	-0-	1280	17.9	4	12K	
oct	4743	4967	2047	"	1448	"	"	"	
77	4744	5063	2114	"	1264	"	"	"	157°/ 9/5102 to 5117 SHIP PASSING
	4745	5155	2141	"	1690	"	"	"	A/c 165 at 2138 GMT.
	4746	5257	2209	"	1420	"	"	"	
	4747	5354	2239	"	1280	"	"	"	
	4748	5457	2309	"	1240	"	"	"	
	4749	5548	2335	"	1200	"	"	"	
29	4750	5650	0005	"		"	"	"	
oct	4751	5741	0032	"	1166	"	"	"	
77	4752	5849	0103	"		"	"	"	
	4753	5933	0127	"	1315	"	"	"	
	4754	6034	0157	"	1716	"	"	"	TOX 1
	4755	6125	0224	"	1900	"	"	"	
	4756	6227	0253	"	1368	"	"	"	
	4757	6318	0320	"		"	"	"	at 0306 GMT A/c 190, at 0312 GMT A/c 220
			0329 <sup>(X)</sup>						at 0318 GMT A/c 250, A/c 310
			0330						A/c 340
			0331						A/c 016°
LAST shot	6420	0352	END	LINE #	94				

OCT 29 1977

R/V ROBERT CONRAD

Cruise: Red 1-02

Line: #95

RECORDING LOG  
MCS

BAHAMAS

DFS IV

Format:

BPI:

35

seg B

800

Date	Tape #	Shot Point #	Time GMT	Trip Delay	Depth FMS	Pop Rate	Samp. Rate MS	Rec. L. MS	Comments
OCT 29 1977	4758	0002	0353	-0-	1452	17.9	4	12000	
	4759	093	0419	"	1891	"	"	"	
	4760	0195	0450	"	1810	"	"	"	
	4761	286	0515	"	1855	19.7	"	"	change pop rate to 19.7 seconds
	4762	388	0548	"	1500	"	"	"	
	4763	479	0618	"	1324	"	"	"	
	4764	582	0651	"	1015	"	"	"	
	4765	687	0720	"	1032	"	"	"	suspect problem with shot counter - there may be a jump in numbering of 12-14 shots though no shots have been missed.
	4766	789	0753	"	1565	"	"	"	
	4767	880	0823	"	1800	"	"	"	
	4768	983	0856	"	2375	17.9	"	"	17.9 POP 057°
	4769	1074	0923	"	2182	"	"	"	S/c 033°
	4770	1177	0952	"	2175	"	"	"	
	4771	1269	1019	"	2207	"	"	"	
	4772	1372	1049	"	2182	"	"	"	028°
	4773	1464	1116	"	2096	"	"	"	
	4774	1567	1146	"	2253	"	"	"	
	4775	1658	1213	"		"	"	"	
	4776	1763	1243		2278				missed 2 shots
*		1819	1257	1000					change delay 1 sec.

R/V ROBERT CONRAD

Cruise: Re 21-02

Line: #95

RECORDING LOG  
MCS

BAHAMAS

DFS IV

Format: Seg B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay	Depth FMS	Pop Rate	Samp. Rate ms	Rec. L. MS	Comments
Oct 29 1977	4777	1853	1309	-0-		17.9	4	12000	missed 2 shots + 17x2, change delay 0 sec.
		1871	1359	1000					change delay BLACK BOX
		1876	1316	2000					" " " "
		1895	1322	3000					" " " "
		1918	1328	4000					" " " "
	4778	1956	1339	4000	2368	17.9	4	8000	change Rec L to 8000ms.
		2020	1358	5000	2420				change delay BLACK BOX
	4779	2091	1419	5000	2430	17.9	4	8000	
	4780	2241	1502	"	2470	"	"	"	
	4781	2376	1542	"	2530	"	"	"	
	4782	2527	1626	"	2558	"	"	"	making tests on UGR event marker
	4783	2662	1705	"	2546	"	"	"	"
	4784	2812	1749	"	2551	"	"	"	"
	4785	2947	1828	"	2567	"	"	"	"
	4786	3098	1912	"	2565	"	"	"	"
		3232	1951	"	2564	"	"	"	last shot tape 4786
			1951						all guns off
	4787	3309	2013	"	2572	"	"	"	GUNS 2+3 ON
	4788	3444	2053	"	2572	"	"	"	
	4789	3595	2136	"	2562	"	"	"	



R/V ROBERT CONRAD

Cruise: RC21-02

Line: 95

## RECORDING LOG

MCS

BAHAMAS

DFS IV

Format: SEG-D

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay SEC	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. L. MS	Comments
29 OCT 1977	4790	3730	2216	5.0	2574	20.9	4	8K	POP 20.9
	4791	3879	2302	"	2575	20.9	"	"	
	4792	4016	2354	"	2579	17.9	"	"	POP 17.9
Oct 30	4793	4166	0037	"		"	"	"	
	4794	4301	0117	"	2578	"	"	"	
	4795	4451	0200	"	2568	"	"	"	
	4796	4586	0239	"	2566	"	"	"	TPX2
	4797	4736	0323	"	2561	"	"	"	
	4798	4871	0403	"	2562	"	"	"	
	4799	5022	0447	"	2562	"	"	"	UGR is not printing properly
	4800	5157	0526	"	2552	"	"	"	"
	4801	5308	0610	"	2547	"	"	"	"
	4802	5443	0649	"	2548	"	"	"	"
	4803	5592	0732	"	2548	"	"	"	
	4804	5726	0811	"	2547	"	"	"	
	4805	5876	0856	"	2566	"	"	"	
	4806	6009	0936	"	2575	"	"	"	
	4807	6161	1020	"	2600	"	"	"	
	4808	6295	1059	"	2600	"	"	"	<del>SONODUCY SP 6304</del>
	4809	6447	1143	"	2602	"	"	"	

Last shot 6580

END LINE #95

OCT 30 1977

R/V ROBERT CONRAD

Cruise: Re21-02

Line: #96

RECORDING LOG  
MCS

BLAKE BASEMENT

DFS IV

Format: Seg B

BPI: 800

58

Date	Tape #	Shot Point #	Time GMT	Trip Delay	Depth FMS	Pop Rate	Samp. Rate ms	Rec. Ls	Comments
30 Oct	4810	0001	1231	5000		17.9	4	8000	TPX 2
	4811	144	1313		2602				
77	4812	278	1352	5000	2600	17.9	4	8000	134°
	4813	427	1435	"	2600	"	"	"	
	4814	562	1515	"	2596	17.3	"	"	e/ pop RATE to 17.3
	4815	711	1558	"	2595	"	"	"	
	4816	846	1638	"	2584	"	"	"	
		938	1704						all guns off 938, last shot tape 4816
	4817	983	17:17	5000	2582	17.3	4	8000	gun 23 on begin recording
			17:35	"		"	"	"	sonobuoy launched
	4818	1117	1756	"	2560	"	"	"	
	4819	1268	1840	"	2547	"	"	"	
	4820	1402	1919	"	2540	"	"	"	
	4821	1557	2003	"	2514	"	"	"	
	4822	1688	2043	"	2517	"	"	"	
	4823	1840	2127	"	2496	"	"	"	
	4824	1976	2206	"	2484	"	"	"	
	4825	2125	2250	"	2475	16.4	"	"	16.4 POP
	4826	2260	2327	"	2473	"	"	"	

R/V ROBERT CONRAD

Cruise: RC 21-02

Line: 96

RECORDING LOG  
MCS

BLAKE BASEMENT

DFS IV

Format: SEG.B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay SEC	Depth FMS	Pop Rate	Samp. Rate MS	Rec. L. MS	Comments
3P	4827	2411	0009	5000	2435	16.4	4	8K	
OCT	4828	2545	0046	11	2400	11	11	11	
1977	—	2658	0116	4000					change DELAY Black Box to 4000ms
	4829	2695	0126	4000	2361	16.4	4	8000	
	4830	2830	0203	11	2240	11	11	11	
	4831	2981	0245	11		17.3	11	11	change Pop Rate to 17.3
	4832	3116	0324	11	2272	17.3	11	11	S/B ON AUX 3, 0344 GMT
	4833	3267	0408	"	2275	"	"	"	
	4834	3402	0448	"	2282	"	"	"	
	4835	3552	0531	"	2292	"	"	"	
	4836	3687	0611	"	2337	"	"	"	
	4837	3836	0654	"	2348	"	"	"	
	4838	3971	0733	"	2363	"	"	"	
	4839	4121	0817	11	2395	11	11	11	SONOBUOY - BAD
	4840	4255	0856	11	2437	11	11	11	
	4841	4406	0940	11	2446	11	11	11	134°
	4842	4541	1019	11	2473	11	11	11	
	4843	4691	1103	11	2503	11	11	11	
	4844	4827	1142	11		11	11	11	
	4845	4972	1225	11	11	11	11	11	LAST SP. 4972 - END OF 96