

R/V ~~ROBERT D. CONRAD~~ *Vema*  
 Cruise: *V 36-18*  
 Line: *079*

RECORDING LOG  
 MCS

*Mombasa - Dar Es Salaam*  
*off shore Kenya*

DFS IV  
 Format: *SEB-B*  
 BPI: *800*

Date	Tape #	Shot Point #	Time $\pm$	Trip Delay $\text{ms}$	Depth $\text{fm}$	Pop Rate $\text{sec}$	Samp. Rate $\text{ms}$	Rec. L. $\text{ms}$	Comments
<i>11/18/80</i>	<i>891</i>	<i>001</i>	<i>1139</i>	<i>0</i>	<i>400</i>	<i>18.0</i>	<i>4</i>	<i>1200</i>	<i>Blast phone #1 not working.</i>
<i>323</i>	<i>892</i>	<i>093</i>	<i>1207</i>	<i>0</i>	<i>420</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>No depth transducers are working</i>
	<i>893</i>	<i>186</i>	<i>1236</i>	<i>0</i>	<i>420</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>Note: Steamer does not have</i>
	<i>894</i>	<i>219</i>	<i>1305</i>	<i>0</i>	<i>410</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>last active section connected.</i>
	<i>895</i>	<i>372</i>	<i>1334</i>	<i>0</i>	<i>430</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>Therefore, only 11 active sections</i>
	<i>896</i>	<i>465</i>	<i>1402</i>	<i>0</i>	<i>450</i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>897</i>	<i>558</i>	<i>1431</i>	<i>0</i>	<i>450</i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>898</i>	<i>651</i>	<i>1500</i>	<i>0</i>	<i>460</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>TAPE RECORDING MISSING SHOTS</i>
	<i>899</i>	<i>665</i>	<i>1504</i>	<i>0</i>	<i>460<sup>SD</sup></i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>900</i>	<i>758</i>	<i>1533</i>	<i>0</i>	<i>460</i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>901</i>	<i>851</i>	<i>1601</i>	<i>0</i>	<i>450</i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>902</i>	<i>944</i>	<i>1630</i>	<i>0</i>	<i>480</i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>903</i>	<i>1036</i>	<i>1639</i>	<i>0</i>	<i>480</i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>904</i>	<i>1129</i>	<i>1727</i>	<i>0</i>	<i>460</i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>905</i>	<i>1222</i>	<i>1756</i>	<i>0</i>	<i>505</i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>906</i>	<i>1314</i>	<i>1824</i>	<i>0</i>	<i>587</i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>907</i>	<i>1406</i>	<i>1853</i>	<i>0</i>	<i>600</i>	<i>"</i>	<i>"</i>	<i>"</i>	
	<i>908</i>	<i>1499</i>	<i>1921</i>	<i>0</i>	<i>605</i>	<i>"</i>	<i>4</i>	<i>"</i>	
	<i>908</i>	<i>1545</i>	<i>1936</i>	<i>0</i>	<i>625</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>46 shots mis (file off B9 46)</i>
	<i>909</i>	<i>1666</i>	<i>2013</i>	<i>0</i>	<i>680</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>Missed 23 shots</i>

R/V ~~ROBERT D. CONRAD~~ <sup>Vema</sup>  
 Cruise: V3618  
 Line: 79

# RECORDING LOG

MCS  
 Mombasa - Dar es Salaam  
 off shore Kenya

DFS IV  
 Format: sag B  
 BPI: 800

(2)

Date	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth fm	Pop Rate sec	Samp. Rate ms	Rec. ms L.	Comments
	910	1758	2041	0	700	1800	4	12000	#1 Blast phone not working
	911	1851	2110	0	750	"	"	"	
	912	1947	2140	0	<del>800</del> 825	"	"	"	COULD HAVE LOST 2 SHOTPOINTS FROM 911 to 912
	913	2071	2208	0	<del>825</del> 900	"	"	"	LOST 2071-2038 = 33 SHOTPOINTS
	914	2165	2248	0	1000	"	"	"	TPX-2 MISBEHAVING LOST SHOTPOINT 2164
	915	2257	2316	0	1100	"	"	"	
	916	2365	2349	0	1200	"	"	"	LOST 2365-2344 = 21 SHOTPOINTS
11/9	917	2457	0017	0	1300	"	"	"	TPX-2 AGAIN LOST SHOTPOINT 2456
	918	2551	0046	0	1350?	"	"	"	
	919	2643	0115	0	1350				
	"	2658	0120	0/1000					Increase TB delay to 1.0 sec.
	"	2661	0120	1000/2000					Increase TB delay to 2.0 sec.
	920	2740	0145	2000	1390				missed 5 shots - TPX-2 screwing
	"	2805	0204	2000/3000					Increase TB delay to 3000 ms.
	921	2832	0213	3000	1420				
	922	2926	0242	3000	1450				
	923	3020	0311	3000	1460				
	924	3113	0340	3000	1500				
	925	3207	0409	3000	1510				
	926	3300	0437	3000	1540				

R/V ROBERT D. CONRAD

Cruise: V36-18

Line: 79

# RECORDING LOG

MCS

offshore Kenya.

DFS IV

Format: SEGB

BPI: 500

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate Hz	Rec. L ms	Comments
<del>11/18/80</del>	927	3393	0537	3000	1560	18.0	4	12000	forgot to write time down on charge.
11/19/80	928	3494	0537		1590				missed 8 shots - TPX-2 again
	929	3588	0606		1600				0605 SB #322 IN WATER
	930	3694	0639		1610				missed 12 shots TPX-2 bad
	931	3788	0708		1650				
	<del>932</del>	<del>3889</del>	<del>0739</del>		<del>1660</del>				missed many shots - replaced
	932	3911	0746	3000	1670				Card in TPX-2 - card no good.
	933	4004	0815	3000	1700				(tape ID not advanced until near end of tape)
	934	4115	0849	3000	1710				lost more shots - TPX-2 bad.
	935	4209	0918		1720				
	"	4212		3000 4000					increase TB delay to 4000 ms
	936	4303	0947	4000	1730	18.0	4	12000	
	937	?	?	4000	1750	"	"	"	Gun #1 off to repair BLAST phone 10/19
	938	4492	1045	4000	1780	"	"	"	
	939	4585	1114	"	1790	"	"	"	MISSING RECORDING OF SHOTS
	940	4599	1119	"	1790	"	"	"	
	941	4694	1148	"	1800	"	"	"	
	942	4787	1217	"	1820	"	"	"	4826 1229 Gun #1 BACK ON
		4854	1237	"	1820	"	"	"	4840 1234 BLAST phone #1 BACK ON
					LAST SHOT				
					LINE 79				

Line: 80

R E C O R D I N G      L O G  
M C S

BPI: 800

④

Offshore Kenya

[illegible]

R/V ROBERT D. CONRAD  
Cruise: V3618  
Line: 81

# RECORDING LOG

MCS

offshore Kenya

DFS IV

Format: Seg B

BPI: 800

Date	Tape #	Shot Point #	Time	Trip Delay sec	Depth fms	Pop Rate sec	Samp. Rate msec	Rec. L. msec	Comments
19 Nov 80	951	1	1635	4.0	1870	18.0	4	12000	Begin Line 81 SB324 @ 1640
924	<del>952</del>	<del>83</del>	<del>1703</del>	<del>4.0</del>		<del>18.0</del>	<del>4</del>	<del>12000</del>	TPX-2 malfunctioning - lost 42 SP
	954	135	1716	4	1870	18.0	4	12000	(there are no TAPES 953 and 952)
	955	229	1746	4	1900	18.0	4	12000	
	956	322	1814	4	1900	18.0	4	12000	
	957	416	1843	4	1900	18.0	4	12000	
	958	509	1912	4	1900	18.0	4	12000	Lost SP 603-615
	959	616	1945	4	1900	18.0	4	12000	LAST SHOT = 640
	960	<del>722</del>	2008	4	1900	18.0	4	12000	Lost <del>722</del> -640 = 88 shots (BEGINNING OF TAPE LABELED 961)
	961	822	2048	4	1900	18.0	4	12000	SB 325 @ 2020 TPX-2 DOWN
	962	834	2052	4	1900	18.0	4	12000	
	963	927	2121	4	1900	//	//	//	
	964	1026	2152	4	1900	//	//	//	Missed 5 shots
	<del>965</del>	<del>1120</del>	<del>2220</del>						TPX-2 Missing shots Missed <del>965</del>
	965	1142	2224	4	1950	//	//	//	switched to TPX-1 22 shots
	966	1226	2253	4	1950	//	//	//	
	967	1319	2322	4	1950	//	//	//	
	968	1413	2351	4	1950	//	//	//	
	969	1511	—	4	1950	//	//	//	Lost 508-511
	970	1606	0054	4	1950	//	//	//	Missed 12 shots

*Verna*  
R/V ROBERT D. CONRAD  
Cruise: *V36-13*  
Line: *81*

# RECORDING LOG

MCS

*offshore Kenya.*

DFS IV

Format:

BPI:

(6)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. L's	Comments
11/20/80	971	1711	0123	4000	1960	18.0	4	12000	pop rate 18.0 sec.
	972	1804	0152		1970				
	973	1923	0228		1970				missed slots TPX-2 again
	974	2016	0257		1970				
	975	2109	0326		1970				
	976	2202	0355		1970				
	977	2297	0424		1970				this tape has some scan counter errors
	978	2392	0453		1970				
	979	? 2484	0422		1970				don't write shot # down at tape change
	980	2581	0552		1970				
	981	2676	0621		1970				
	982	2769	0649		1980				0715; sp# 2851; end SB# 328
	983	2863	0718		1980				
	984	2957	0748		1990				
	985	3051	0817		2000				
	"	3122	0838			18.0/24.4			change pop rate to 24.4 sec from 18.0 sec
	986	3146	0848		2000	24.4			(making 4 knots over ground)
	987	3241	0907	"	2000	"			
	988	3336	1006	"	2000	"	"	"	
	989	3430	1044		2020				SB# 330 3506 sp.

440 1525 1123

R/V ROBERT D. CONRAD VENA  
Cruise: V3618  
Line: 81

RECORDING LOG  
MCS

Off Shore Kenya

DFS IV

Format:

BPI: 800

7

Date	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth fms	Pop Rate/sec	Samp. Rate ms	Rec. L. ms	Comments
11/20/80	990	3525	1123	4000	2040	24.4	4	12000	
		3541				18.4			CHANGE POP RATE Speed 5.3 <sup>and</sup> <sub>slow</sub>
	991	3621	1154	"	2050	"	"	"	ONE SHOT MAY HAVE BEEN MISSED
	992	3717	1223	"	2060	"	"	"	
	993	3811	1252	"	2070	"	"	"	1 shot missed
	994	3907	1322	"	2070	"	"	"	missed one file/shot
	995	4002	1351	"	2100	"	"	"	
	996	4097	1420	5000	2100	"	"	"	change delay to 5 sec
	"	4174	1444						Guns/Compressor off for oil check
	997	4203	1453	5000	2100	18.4	4	12000	Guns back on SB#332 1454
	998	4298	1522	"	2110	"	"	"	SB 332 @ 1519 ~ shot 4290
	999	4392	1551	"	2115	"	"	"	
	1000	4487	1620	"	2120	"	"	"	
	1001	4580	1648	"	2120	"	"	"	
	1002	4674	1717	"	2130	"	"	"	
	1003	4765	1745	"	2130	"	"	"	
	1004	4860	1814	"	2130	"	"	"	
	1005	4953	1843	"	2150	"	"	"	Sono Bouy 333 on at 1851, shot 4970 (Bart)
	1006	5047	1912	"	2180	"	"	"	
	1007	5142	1941	"	2195	"	"	"	

R/V ROBERT D. CONRAD *Vema*Cruise: *✓3617*Line: *Y1*

## RECORDING LOG

MCS

*off shore Kenya*

DFS IV

Format:

BPI: *✓✓✓*

Date	Tape #	Shot Point #	Time GMT	<sup>m3</sup> Trip Delay	Depth fms	Pop Rate sec.	Samp. Rate m3	Rec. L. msec.	Comments
<i>11/20/80</i>	<i>1008</i>	<i>5236</i>	<i>2010</i>	<i>4.00</i>	<i>2195</i>	<i>18.4</i>	<i>4</i>	<i>12000</i>	
	<i>1009</i>	<i>5330</i>	<i>2039</i>	<i>11</i>	<i>2195</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1010</i>	<i>5425</i>	<i>2108</i>	<i>5000</i>	<i>2200</i>	<i>11</i>	<i>11</i>		
	<i>1011</i>	<i>5518</i>	<i>2136</i>	<i>5000</i>	<i>2200</i>	<i>11</i>	<i>11</i>		
	<i>1012</i>	<i>5613</i>	<i>2206</i>	<i>5000</i>	<i>2200</i>	<i>18.4</i>	<i>11</i>	<i>11</i>	<i>SB 334 on at 22 ~SH6T 5675</i>
	<i>1013</i>	<i>5707</i>	<i>2235</i>	<i>5000</i>	<i>2200</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>SB 335 at 2257 ~SH6T 5785</i>
	<i>1014</i>	<i>5801</i>	<i>2303</i>	<i>5000</i>	<i>2200</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1015</i>	<i>5895</i>	<i>2332</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>11</i>	
<i>11/21/80</i>	<i>1016</i>	<i>5990</i>	<i>0001</i>	<i>11</i>	<i>2220</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1017</i>	<i>6085</i>	<i>0030</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1018</i>	<i>6178</i>	<i>0059</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1019</i>	<i>6272</i>	<i>0128</i>	<i>11</i>	<i>2230</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1020</i>	<i>6367</i>	<i>0157</i>	<i>11</i>	<i>2260</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1021</i>	<i>6461</i>	<i>0226</i>		<i>2290</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>SB # 335 @ 0229 (# ~SP 6476)</i>
	<i>1022</i>	<i>6556</i>	<i>0255</i>		<i>2300</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1023</i>	<i>6650</i>	<i>0324</i>		<i>2300</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1024</i>	<i>6745</i>	<i>0353</i>		<i>2300</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1025</i>	<i>6839</i>	<i>0422</i>		<i>2310</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1026</i>	<i>6933</i>	<i>0451</i>		<i>2310</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>1027</i>	<i>7026</i>	<i>0520</i>		<i>2310</i>	<i>11</i>	<i>11</i>	<i>11</i>	



Line: 81

# OFFSHORE KENYA

BPI: 500 BPI

⑨

[illegible]

R/V ROBERT D. CONRAD - Vema

Cruise: U3618

Line: 82

## RECORDING LOG

MCS

## OFFSHORE KENYA

DFS IV

Format: SEGB

BPI: 800BPI

(10)

Date	Tape #	Shot Point #	Time GMT	Trip Delay msec	Depth cm	Pop Rate sec	Samp. Rate msec	Rec. L. msec	Comments
11/21/80	1033	01	1043	5000	2270	16.3	4	12000	Begin Line 82
326	1034	94	1109	"	2260	"	"	"	
	1035	187	1134	"	2250	"	"	"	
	1036	281	1200	"	2250	"	"	"	Speed over ground G.O.K.
	1037	375	1226	"	2240	"	"	"	
	1038	469	1251	"	2225	"	"	"	
	1039	562	1317	"	2220	"	"	"	
	1040	657	1343	"	2215	"	"	"	
	1041	749	1408	"	2200	"	"	"	
	1042	843	1434	"	2180	"	"	"	
	1043	936	1500	"	2160	"	"	"	
	1044	1031	1526	4.5	2145				change delay to 4.50
	1045	<del>10</del> 1125	1551	"	2130	"	"	"	missed 1 shot
	1046	1219	1617	"	2115	"	"	"	
	1047	1312	1643	"	2080	"	"	"	
	1048	1411	1710	"	2090	"	"	"	Missed 6 shots
	"	1422	1713	"	"	15.3	"	"	change Pop Rate to 15.3 S.O.G = 6.6
	1049	1528	1740	"	2050	"	"	"	
	1050	1648	1811	"	2004	"	"	"	Senabouy 339 at 1684
	1051	1766	1842	"	2000	"	"	"	Timing Problem

R/V ~~ROBERT D. CONRAD~~ *Vend*Cruise: *U3618*Line: *82*

## RECORDING LOG

MCS

*off shore Kenya*

DFS IV

Format: *Seg 13*BPI: *800*

(11)

Date	Tape #	Shot Point #	Time GMT	Trip Delay Msec	Depth FM	Pop. Rate Sec.	Samp. Rate 11704 m/sec	Rec. L. Sec.	Comments
	1051	1813	1854	4.5	2000	16.00	4	12000	slowed trip rate to 16.0
	1052	1876	1911	3.0	2000	"	"	"	Missed 5 shots/change delay to 3.0
	1053	1976	1938	"	1995	"	"	"	missed 7 shots
	1054	2071	2005	"	1940	"	"	"	
	1055	2164	2030	"	1925	"	"	"	
	1056	2258	2056	"	1928	"	"	"	
	1057	2352	2122	"	1900	"	"	"	
	1058	2446	2148	"	1900	"	"	"	
	1059	2540	2214	"	1890	"	"	"	
	1060	2634	2240	"	1870	"	"	"	
	1061	2734	2307	"	1850	"	"	"	Missed 7 shots
	1062	2828	2333	"	1825	"	"	"	
	1063	2921	2359	"	1808	"	"	"	
11	1064	3015	0024	"	1800	"	"	"	
22	1065	3109	0050	"	1800	"	"	"	
80	1066	3203	0116		1790				
	1067	3296	0142		1785				
	1068	3389	0207		1790				
	1069	3482	0233		1800				tape didn't start.
	"								shot # 35 advanced but gun didn't fire somewhere near middle of tape 1069

R/V ROBERT D. CONRAD

Cruise: 136-18

Line: 82

# RECORDING LOG

MCS

offshore Kenya

DFS IV

Format: SEGB

BPI: 800

(12)

Date (GMT)	Tape #	Shot Point #	Time (GMT)	Trip Delay ms	Depth Fm	Pop Rate 321	Samp. Rate ms	Rec. L. ms	Comments
11/22/80	1069 (ctd) <del>3524</del>	3524	0245	3000/4000		16.0	4	12000	increase TB delay to 4000 ms.
	1070	3576	0259	4000	1795				
	1071	3664	0325	4000	1790				
	"	3745	0345	4000/3000					decrease TB delay to 3000 ms
	1072	3762	0350	3000	1780				
	1073	3855	0416	3000	1770				
	1074	3949	0442	"	1710				
	1075	4042	0507		1640				
	1076	4136	0533		1640				
	1077	4229	0559	1.	1640	1	1	1	
	1078	4324	0625	11	1605	11	11	11	
	1079	4418	0651	11	1600				
	1080	4511	0717	11	1570				missed 1 shot
	1081	4604	0743	11	1560				
	1082	4700	0810	11	1500	17.5	11	11	Pop rate $\Delta \rightarrow 17.5$ sp 4605
	1083	4793	0837	11	1470	"			0827 SB 340 on
	1084	4886	0942	"	1440	"			
		4980							End of tape 1084
	1085	4984	0932	1.	1390				Missed 4 shots
	1086	5077	0959	"	1330	"			

Line: 42

## M C S

Offshore Kenya

BPI: 800

(13)

[illegible]

R/V ROBERT D. CONRAD VEMA

Cruise: V3618

Line: 83

## RECORDING LOG

MCS

offshore Kenya

DFS IV

Format: SCUB

BPI: 400

14

Date	Tape #	Shot Point #	Time	Trip Delay ms	Depth Fms	Pop Rate SPS	Samp. Rate SPS	Rec. L. ms	Comments
1/22/80	1097	1	1736	0	230	27	4	12	Begin Line 83 (Missed 5 shots)
22	1097	6	1738	"	"	"	"	"	tape problem
	1098	99	1821	"	200	"	"	"	
	1099	191	1903	"	195	"	"	"	
	1100	283	1945	"	195	"	"	"	
	1101	375	2028	"	195	"	"	"	
	1102	467	2110	"	195	"	"	"	
	1103	561	2153	"	200	"	"	"	
	1104	654	2236	"	200	"	"	"	
	1105	746	2318	"	250	"	"	"	Missed shots! VGR has blank area
"	1106	838	0000	"	297	"	"	"	
23	1107	930	0042	"	500	"	"	"	
80	"	1005	0116			27.250			change pop rate to <del>25.0</del> 25.05
	"	1021	0123						increase Time Break delay to 1000 - 1
	1108	1022	0124	0000/1000	600	25.0			
	1109	1114	0203	1000	625				
	1110	1206	0242	1000	745				
	1111	1298	0321	1000	740				
	1112	1390	0400	1000	660				
	"	1433	0418			25.0 27.0			increase decrease pop rate to 27.0

R/V ROBERT-D. CONRAD *Vilma*

Cruise: V36-18

Line: 83

## RECORDING LOG

MCS

OFFSHORE KENYA.

DFS IV (B)

Format: SE-13

BPI: 500

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth Fm	Pop Rate 321	Samp. Rate ms	Rec. L. ms	Comments
11/23/80	1113	1482	0441	1000	605	27.0	4	12000	
	1114	1574	0523	1000	540				
	"	1614	0541	$\frac{1000}{500}$					decrease TB delay to 0.5 sec
	1115	1666	0605	500	450				
	1116	1758	0648	.500	400	+	+	-	
	1117	1850	0728	.500	400	+	+	+	
	1118	1942	0812	.500	410				
	1119	2035	0854	.500	420	+	-	-	2118 to 2123 missing
	1120	2131	0939	"	400				0937 SB 342 ON
	1121	2223	1021	.500	375				
	1122	2315	1104	.500	370				
	1123	2407	1146	0.500	360				
	1124	2499	1228	0.500	255				CHANGE DELAY $\rightarrow$ 0.0 @ 12507 12511
	"	2508	1232	"					B/B No. 343
	"	2515		0.000					Trip delay to 0
	1125	2519				24.4			change prop rate to 24.4 3.0 4.0
	1125	2598	1253						Sched 0009 344
	1125	2598	1309	0.000	240				missed two (2) shots
	1126	2691	1347	0.0	200				
	1127	2782	1424	0.0	210				

Line: 43

M C S

Offshore Kenya

BPI: 800

16

[illegible]



R/V ROBERT D. CONRAD

Cruise: V3418

Line: 64

## RECORDING LOG

MCS

Offshore Kenya

DFS IV

(17)

Format: SEC B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay Sec	Depth f m	Pop Rate Sec	Samp. Rate ms	Rec. L. ms	Comments
11/23/80	1128	01	1524	0	440	24.4	4	12K	Begin Line 84
3288	"	96	1559	0		23.2	1		change & pop rate to 23.2
	1129	93	1602	0	620	"			
	1130 A	181	1637	0		"			
	1130	193	1641		760				Restarted at 1130
	"	208	1647	1.0					change delay to 1.0
	1131	285	1717	"	880				
	"	303	1724	"		16.3			change <del>pop</del> Pop rate to 16.3
	1132	381	1745	"	950	"			Missed 5 Shots / A.E. 147
	1133	475	1810	"	1080	"			
	1134	567	1836	"	1150	"			
	1135	660	1901	"	1110	"			
	1136	752	1927	"	1195	"			
	1137	845	1952	"	<del>1200</del> 1210	"			
	1138	937	2017	"	1230	"			
	1139	1030	2043	"	1300	"			
	1140	1122	2108	"	1325	"			
	1141	1215	2134	"	1350	"			
	1142	1307	2159	"	1400	"			
	1143	1400	2224	"	1405	"			

R/V ROBERT D. CONRAD Vema

Cruise: V3618

Line: 84

## RECORDING LOG

MCS

offshore Kenya

DFS IV (18) (18)

Format: 29 B

BPI: 700

Date	Tape #	Shot Point #	Time	Trip Delay sec.	Depth + 1000	Pop Rate sec.	Samp. Rate m/s	Rec. L. A1	Comments
11	1144	1492	2250	1.0	1490	16.3	4	12K	S/B 347 at 2304 S.P. 2.1540
23	1145	1585	2315	11	1490	11	11	11	
80	1146	1677	2340	11	1500	11	11	11	
11	1147	1770	0006	11	1530	11	11	11	
24	1148	1862	0031	11	1550	11	11	11	
80	1149	1954	0056	11	1590	11	11	11	shot 1970
	11	1970	0101	1000/3000	11	11	11	11	increase TR delay to 2000 ms.
	11	1977	0102	2000/3000	11	11	11	11	increase TR delay to 3000 ms.
	11					11	11	11	tape TD incorrect. changed to 1149 -
	11					11	11	11	was 1139
	1150	2047	0122	3000	1570	11	11	11	
	1151	2142	0148	11	1590	11	11	11	
	11	2181	0158	11		11	11	11	reduce speed from 5.6 K to 5.0 K
	11			11		11	11	11	thru water - we were making 6.9 over ground
	11			11		11	11	11	will leave same pop rate until next fix
	1152	2235	0213	3000	1630	11	11	11	
	1153	2330	0239		1660	11	11	11	
	1154	2423	0305		1675	11	11	11	
	11	2471	0318			16.5/18.8			change pop rate to 18.8 sec. speed over ground = 5.2 K
	11	2475	0319	3000/4000					increase TR delay from 3000 to 4000 ms

R/V ROBERT D. CONRAD *Verna*Cruise: *V36-18*Line: *84*RECORDING LOG  
MCS*Offshore Kenya*

DES IV

Format: *SEB-B*BPI: *500*

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth Fm	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
<i>11/24/80</i>	<i>1155</i>	<i>2517</i>	<i>0332</i>	<i>4000</i>	<i>1690</i>	<i>18.8</i>	<i>4</i>	<i>12000</i>	<i>A/C to 115 - Rouse correction for set</i>
	<i>1156</i>	<i>2610</i>	<i>0401</i>	<i>4000</i>	<i>1700</i>				
	<i>1157</i>	<i>2704</i>	<i>0430</i>		<i>1730</i>				<i>missed 1 shot at champagne.</i>
	<i>1158</i>	<i>2797</i>	<i>0458</i>		<i>1750</i>				<i>NOTE: tape 1157 incorrectly has 1158 on heads.</i>
	<i>1159</i>	<i>2890</i>	<i>0527</i>		<i>1750</i>				
	<i>1160</i>	<i>2983</i>	<i>0558</i>		<i>1760</i>				
	<i>1161</i>	<i>3071</i>	<i>0624</i>		<i>1770</i>				
	<i>1162</i>	<i>3169</i>	<i>0652</i>		<i>1800</i>				
	<i>1163</i>	<i>3263</i>	<i>0721</i>		<i>1830</i>				
	<i>1164</i>	<i>3356</i>	<i>0750</i>		<i>1840</i>				
	<i>1165</i>	<i>3451</i>	<i>0819</i>		<i>1850</i>				<i>SB 348 on at 0825z</i>
	<i>1166</i>	<i>3544</i>	<i>0848</i>		<i>1860</i>				
	<i>1167</i>	<i>3639</i>	<i>0917</i>		<i>1860</i>				
	<i>1168</i>	<i>3733</i>	<i>0946</i>		<i>1865</i>				<i>Header advanced at shot 3769 to no. 1168/SP3773 so on 4.4/Amk 2.2</i>
	<i>1169</i>	<i>3825</i>	<i>1017</i>		<i>1865</i>	<i>21.2</i>			
	<i>1170</i>	<i>3919</i>	<i>1050</i>						
	<i>1170</i>	<i>3922</i>	<i>1052</i>		<i>1870</i>				<i>missed 4 shots - restart</i>
	<i>1171</i>	<i>4017</i>	<i>1125</i>		<i>1870</i>				
	<i>1172</i>	<i>4110</i>	<i>1159</i>		<i>1875</i>				

R/V ROBERT D. CONRAD VEMA

Cruise: V3618

Line: 84

## RECORDING LOG

MCS

offshore Kenya

DFS IV

Format: 560B

BPI: 800

Date	Tape #	Shot Point #	Time	Trip Delay	Depth	Pop Rate	Samp. Rate m/s	Rec. L. mk	Comments
24 Nov 80	1172	4118	1202	4.0	1875	21.2	<del>21.5</del> 4	4 12k	restarted missed 8 shots
	1173	4211	1235	"	1880	"			SB 349 @ 1202 = SP 4120
	1174	4305	1308	"		"			
	1174	4308	1309	"	1930	"			missed 3 shots (restarted)
	1175	4402	1343	"	1940	"			
	1176	4495	1416	"	1960	"			
	"	4514	1423	"		18.4			CHANGE POP RATE TO 18.4 504 = 30
	1177	4589	1446	"	1970				
	1178	4686	1516	"	1980				
	1179	4779	1545	"	2000				
	1180	4873	1613	"	2000				missed 1 shot
	1181	4969	1643	"	2020				on beginning of 1281
	1182	5062	1711	"	2020	"			
	1183	5158	1741	"	2025	"			Missed 1 shot Beginning of 173
	1184	5253	1812	"	2025	20.8			changed Pop rate to 20.8, speed across
	1185	5348	1844	"	2028	"			Ground 407/shots rate = 19.56/49
	1186	5441	1915	"	2050	19.5			1903 SP 350
	1187	5536	1946	"	2075	"			
	1188	5629	2016	"	2080	"			
	1189	5723	2046	"	2085	"			

R/V ROBERT D. CONRAD VEMA

Cruise: V3618

Line: 84

RECORDING LOG  
MCS

64 f shore Kenya

DFS IV

Format:

BPI: 800

(19) (21)  
seg B

Date	Tape #	Shot Point #	Time	Trip Delay	Depth	Pop Rate	Samp. Rate	Rec. L.	Comments
	1190	5816	2117	4.0	2100	17.5	4	12K	
	1191	5910	2146	4.0	2100	"	"	"	
	1192	6004	2217	4.0	2100	"	"	"	
	1193	6098	2247	"	2105	"	"	"	
	1194	6191	2317	"	2110	"	"	"	Speed 5.2 Port Rate → 12.8 at SP/227
	"	6227	2330	"	"	18.8	"	"	
	1195	6305	2355	"	2130	"	"	"	Both Tape Transports Having trouble, miss 2
11	1196	6405	0024	"	2150	"	"	"	Sonobuoy 351 at 0029 & 6413
25	1197	6498	0052	"	2150	"	"	"	Sonobuoy 352 at 0043 & 6455
80	"	6529	0102	4000 5000					increase TD delay to 5000 m/s.
	1198	6591	0121	5000	2160				
	"	<del>6661</del>	<del>0142</del>	1		18.5			increase pop rate to 17.5
	1199	(6661)	0142	5000	2175	17.8			6661 may have been read wrong
	1200	6777	0216	1	2190	"			SB # 353 @ 0206
	"	6857	0233	1		17.5/18.4	18.4		SB # 354 @ 0224 (SP 0532 - P/1038)
	1201	6870	0243	1	2200	18.4			
	1202	6963	0312	1	2200	18.4			
	1203	7056	0341		2210				
	1204	7149	0409		2225				
	1205	7243	0438		2250				Tape did not trip once somewhere in 46

R/V ROBERT-D. CONRAD *V. L. M. A.*Cruise: *136-15*Line: *8A*

## RECORDING LOG

MCS

*offshore Kenya*

DFS IV

Format: *SEU-B*

BPI: 800

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay min	Depth Fm	Pop Rate sec	Samp. Rate sec	Rec. L. min	Comments
<i>11/25/80</i>	<i>1206</i> <del>7537</del>	<i>7337</i>	<i>0507</i>	<i>5000</i>	<i>2270</i>	<i>15.4</i>	<i>4</i>	<i>12000</i>	
	<i>1207</i>	<i>7430</i>	<i>0536</i>		<i>2280</i>				
	<i>1208</i>	<i>7535</i>	<i>0605</i>		<i>2280</i>				
	<i>"</i>	<i>7576</i>	<i>0620</i>		<i>2280</i>	<i>15.4/17.9</i>			<i>change pop rate to 17.5 sec</i>
	<i>1209</i>	<i>7619</i>	<i>0634</i>		<i>2280</i>	<i>12.9</i>			
	<i>1210</i>	<i>7713</i>	<i>0705</i>		<i>2280</i>				
	<i>1211</i>	<i>7806</i>	<i>0735</i>		<i>2290</i>				
	<i>1212</i>	<i>7900</i>	<i>0806</i>		<i>2300</i>				
	<i>"</i>	<i>7979</i>	<i>0831</i>						<i>corrected Julian day # from 370 to 350</i>
	<i>1213</i>	<i>7993</i>	<i>0836</i>		<i>2300</i>				
	<i>"</i>	<i>8054</i>	<i>0854</i>		<i>2300</i>				<i>Change of rate to 17.5 sec</i>
	<i>1214</i>	<i>8087</i>	<i>0905</i>		<i>2300</i>				
	<i>1215</i>	<i>8180</i>	<i>0932</i>		<i>2350</i>				
	<i>1216</i>	<i>8275</i>	<i>1000</i>		<i>2350</i>				
	<i>1217</i>	<i>8367</i>	<i>1027</i>		<i>2400</i>				<i>BAD Tape</i>
	<i>1218</i>	<i>8461</i>	<i>1054</i>		<i>2450</i>		<i>Not</i>	<i>recording</i>	<i>shots missing shot 7822</i>
	<i>1219</i>	<i>8535</i>	<i>1116</i>		<i>2500</i>				
	<i>"</i>	<i>8561</i>	<i>1122</i>		<i>2550</i>	<i>17.8</i>			<i>Change to 17.5 sec</i>
	<i>1220</i>	<i>8638</i>	<i>1145</i>		<i>2550</i>				<i>missed 7 shots</i>
	<i>1221</i>	<i>8732</i>	<i>1212</i>		<i>2550</i>				

Werner

Cruise: V 3618

Line: 84

## RECORDING LOG

M C S

Offshore Krays

DFS IV

Format: *SSA R.*

BPI: See

[illegible]

R/V ROBERT D. CONRAD

VENA

Cruise: V3618

Line: 85

## RECORDING LOG

MCS

Off Shore Kenya

DFS IV

Format: SEC B

BPI: 800

(24)

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth fms	Pop Rate sec	Samp. Rate min	Rec. L. m/sec	Comments
11/25/80	1234	1	1735	5.0	2500	17.0	4	1200	
330	1235	96	1903	"	2500	"	"	"	
	1236	179	1930	"	"	"	"	"	
	1237	283	1957	"	"	"	"	"	
	1238	376	2024	"	"	"	"	"	
	1239	470	2052	"	"	"	"	"	
	1240	564	2119	"	"	"	"	"	5/6 356 AT 2120
	1241	659	2147	"	"	"	"	"	
	1242	752	2214	"	"	17.8	"	"	
	1243	846	2242	"	"	"	"	"	tape machine missed <del>shots</del> 18 shots
	"	864	2247	"	"	17.0	"	"	switched over to TP2-1, changed P/R
	1244	957	2314	"	"	"	"	"	tape transport problems, missed 19
	"	976	2320	"	"	17.8	"	"	switched to TP2-1
	1245	1070	2347	"	"	"	"	"	
11	1246	1163	0004	"	"	"	"	"	
26	1247	1261	0042	"	"	"	"	"	tape trouble, missed 1 shot
80	1248	1355	0110	5000	2500	17.8	15.4	1	
	"	1397	0122			17.5			decrease pop rate to 18.4 sec
	"	1417				18.4/18.5			decrease ship's speed to 5 knots per hour
	1249	1449	0138	5000	2500	19.5			





R/V ROBERT D. CONRAD *Verona*Cruise: *V 46-18*Line: *86*RECORDING LOG  
MCS*Bay offshore Kenya*

DFS IV

Format: *SEB B*BPI: *500*

Date <i>mm/dd/yy</i>	Tape #	Shot Point #	Time <i>GMT</i>	Trip Delay <i>min</i>	Depth <i>fath</i>	Pop Rate <i>sec</i>	Samp. Rate <i>min</i>	Rec. L. <i>min</i>	Comments
<i>11/20/88</i>	<i>1250</i>	<i>001</i>	<i>0338</i>	<i>5000</i>	<i>2475</i>	<i>19.5</i>	<i>4</i>	<i>1200</i>	<i>Begin Line 86</i>
<i>331</i>	<i>1251</i>	<i>95</i>	<i>0409</i>		<i>2475</i>				<i>Sometimes tape doesn't start</i>
	<i>1252</i>	<i>188</i>	<i>0439</i>		<i>2475</i>				<i>missed shot 252 - gun fired / too</i>
	<i>"</i>	<i>282</i>	<i>0509</i>						<i>early. Possibly trouble in elect line</i>
	<i>"</i>								<i>or I/O or maybe gun itself</i>
	<i>1253</i>	<i>282</i>	<i>0509</i>		<i>2460</i>				
	<i>"</i>	<i>302</i>	<i>0516</i>		<i>2465</i>	<i>17.8</i>			<i>Pop rate - to 17.8 5.0m 5.0m</i>
	<i>1254</i>	<i>371</i>	<i>0537</i>		<i>2440</i>				
	<i>1255</i>	<i>467</i>	<i>0604</i>		<i>2400</i>				
	<i>"</i>	<i>502</i>	<i>0615</i>			<i>17.5</i>			<i>pop rate 19.1 - speeders jammed 5/1</i>
	<i>1256</i>	<i>560</i>	<i>0633</i>		<i>2440</i>	<i>19.1</i>			
	<i>1257</i>	<i>653</i>	<i>0703</i>		<i>2440</i>				<i>missed another shot - around 735</i>
	<i>1258</i>	<i>747</i>	<i>0734</i>		<i>2430</i>				
	<i>1259</i>	<i>841</i>	<i>0804</i>		<i>2425</i>				<i>missed shot 920 - guns didn't fire</i>
	<i>1260</i>	<i>935</i>	<i>0835</i>		<i>2420</i>				
	<i>"</i>	<i>1012</i>	<i>0900</i>						<i>reduce speed to 155 rpm</i>
	<i>1261</i>	<i>1029</i>	<i>0905</i>		<i>2400</i>				
	<i>1262</i>	<i>1122</i>	<i>0936</i>		<i>2400</i>				
	<i>1263</i>	<i>1217</i>	<i>1006</i>		<i>2390</i>				<i>missed its alt. till to the most</i>
	<i>1264</i>	<i>1315</i>	<i>1037</i>		<i>2375</i>				<i>and appear on 1263 in tape</i>
									<i>missed two (2) shots / complete</i>

R/V ROBERT-D. CONRAD *Nema*  
 Cruise: V 3618  
 Line: 86

# RECORDING LOG

MCS

*Offshore Kenya*

DFS IV

Format: 8cc B

BPI: 800

(27)

Date	Tape #	Shot Point #	Time GMT	Trip Delay hrs	Depth Fm	Pop Rate Sec	Samp. Rate hrs	Rec. L. hrs	Comments
11/21/80	1265	1410	1109	5000	2375	191	4	1200	
	1266	1503	1139		2370				Part recorded with 1265 number
	1267	1598	1210		2365				
	1267	1656	1229		-	18.4			Speed change to 5.3 knots.
	1268	1691	1240		2365				
	1269	1785	1308		2360				
	1270	1878	1337		2350				
	1271	1972	1406		2300				
	1272	2065	1434		2290				- missed one shot mid-tape
	"	~2078	1439		SB				SB 357 on @ 1439 ~ SP 2078
	"	~2126	1453		SB				SB 358 on @ 1453 ~ SP 2126
	1273	2159	1503		2240				
	1274	2252	1530		2230				
	1275	2349	1603		2220				Missed 2 shots
	1276	2442	1630		2205				
	1277	2536	1659		2200				
	"	2584	1714	5/4.0	2200				Reduce pop rate to 4.0
	1278	2624	1728	4.0	2200				
	1279	2723	1756	4.0	2195				Missed 1 shot mid-tape
	1280	2817	1825	4.0	2180				

R/V ROBERT D. CONRAD *Vema*  
 Cruise: *V3618*  
 Line: *86*

RECORDING LOG  
 MCS

*offshore*  
*Kenya*

DFS IV *(27)*  
 Format: *500-B*  
 BPI: *Y00*

Date	Tape #	Shot Point #	Time GMT	Trip Delay	Depth fm	Pop Rate sec.	Samp. Rate sec.	Rec. L. m3	Comments
	1281	2910	1854	4.0	2125	18.4	4	12K	
	1282	3003	1922	4	2125	16	11	11	<i>Scrubbed 359 @ 1932 approx 3032</i>
	"	3074	1944	11	2100	16.9	11	11	<i>Speed over ground, 5.7, for rate change</i>
	1283	3096	1950	11	2100	16	11	11	
	1284	3189	2016	11	2100	16	11	11	
	1285	3283	2042	11	2100	16	11	11	
	1286	3377	2108	11	2080	16	11	11	
	1287	3471	2133	11	2070	16	11	11	
	1288	3564	2159	11	2050	16	11	11	
	1289	3657	2224	11	2050	16	11	11	
	1290	3751	2250	11	2030	16	11	11	
	1291	3847	2317	11	2010	16	11	11	<i>Missed 1 shot mid-tape</i>
	1292	3939	2342	11	2005	16	11	11	<i>A</i>
11	1293	4033	0008	11	2000	16	11	11	
27	1294	4126	0033	11	2000	16	11	11	
80	1295	4220	0057	11	1980	16.9	11	11	
	"	4249	0107	11		17.1	11	11	<i>A/C 295</i>
	"	4256	0109	11		17.1	11	11	<i>speed near 5.7 k. change by 100</i>
	1296	4314	0126	11	1975	17.1	11	11	
	1297	4407	0153	11	1960	17.1	11	11	

R/V ROBERT D. CONRAD *Udon*Cruise: *636-18*Line: *86.*

## RECORDING LOG

MCS

*offshore Kenya*DFS IV *(29)*Format: *SEGB*BPI: *800*

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay min	Depth Fm	Pop Rate % sec	Samp. Rate sec	Rec. L min	Comments
<i>11/27/80</i>	<i>1297</i>	<i>4465</i>	<i>0209</i>	<i>4000</i>		<i>17.1</i> <del><i>17.5</i></del>	<i>4</i>	<i>12min</i>	<i>change pop rate to 17.5 - spd 506K over ground.</i>
	<i>1298</i>	<i>4500</i>	<i>0220</i>	<i>4000</i>	<i>1950</i>	<i>17.5</i>			
	<i>1299</i>	<i>4543</i>	<i>0247</i>	<i>4000</i>	<i>1940</i>	<i>17.5</i>			
	<i>1300</i>	<i>4686</i>	<i>0314</i>		<i>1930</i>				
	<i>1301</i>	<i>4779</i>	<i>0341</i>		<i>1925</i>				
	<i>also 1301</i>	<i>4871</i>	<i>0408</i>						<i>guns off for computer repairs</i>
	<i>1302</i>	<i>5241</i>	<i>0550</i>	<i>4000</i>	<i>1900</i>	<i>16.6</i>			<i>resume line 86</i>
	"	<i>5278</i>		<i>1</i>					<i>missed shot 278</i>
	"	<i>5284</i>	<i>0601</i>	<del><i>4000</i></del> <i>3500</i>					<i>TB deliv to 3500 fms - 4000</i>
	"	<i>5295</i>	<i>0605</i>	<i>3500</i>		<i>16.6</i> <del><i>16.3</i></del>			<i>pop rate to 16.5 (6.0K over ground)</i>
	"								<i>radio noise on this tape</i>
	<i>1303</i>	<i>5335</i>	<i>0615</i>	<i>3500</i>	<i>1890</i>	<i>16.3</i>			
	"								<i>A/C 305°</i>
	<i>1304</i>	<i>5438</i>	<i>0641</i>		<i>1880</i>				
	<i>1305</i>	<i>5522</i>	<i>0702</i>		<i>1875</i>				<i>missed shot 5206?</i>
	<i>1306</i>	<i>5619</i>	<i>0733</i>		<i>1870</i>				<i>missed 3 shots - hit wrong switch</i>
	"								<i>SB # 360 over at 0743</i>
	"	<i>5670</i>	<i>0748</i>						<i>Gun 1 off - firing wrong - neither gun is firing (Both guns quit firing)</i>
	"								

R/V ROBERT D. CONRAD *Vema*Cruise: *V36-18*Line: *86*RECORDING LOG  
MCS*Offshore Kenya.*

DFS IV

Format: *SEGB*BPI: *800*

(30)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay min	Depth Fm	Pop Rate per min	Samp. Rate min	Rec. L. min	Comments
11/27/80	1306 (etc)			3500		16.3	4	12000	→ on tape 1306 because both guns just. we are now shooting with 1 gun.
	1307	5719	0800		1865				Note: a number of shots missed
	1308	5812	0826		1860				missed a shot <sup>sometimes</sup> in this tape.
	1309	5906	0852		1850				
	1310	6000	0917		1840				
	"	6022	0923		-	17.5			Speed (0.6) change → 5.6 knots
	1311	6095	0945		1840				two shots missed - mid tape.
	1312	6191	1012		1830				
	"	6235	1025		-				two guns on.
	1313	6285	1040		1820				
	1314	6380	1108		1800				First few shots appear in 1313
	"	6403	1115		-				SB 361 on @ 1115
	1315	6476	1135		1795				
	"	6494	1141		-	17.1			Speed <del>4.5</del> 5.7 Δ Pop Rate
	1316	6570	1203		1790				
	1317	6664	1230		1760				
	1318	6759	1258		1750				1303Z SB 362 on
	1319	6856	1326		1745				
	1320	6951	1354		1745				
	1321	7047	1422		1740				

R/V ROBERT D. CONRAD VEMA

Cruise: V 3618

Line: 86

RECORDING LOG  
MCS

offshore Kenya

DFS IV

Format: SEG 13

BPI: 800

(31)

Date	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth fms	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
27 Nov 80	1322	7142	1449	3.500	1710	17.1	4	17.000	
	1323	7133	1514						
	1324	7130	1545		1690				
	1325	7124	1611		1675				
	1326	7518	1639		1650				Missed 1 shot Mid-Tide
	1327	7613	1707	11	1625	11	11	11	Missed 1 shot Mid-Tide
	1328	7757	1734	3.00	1600	11	11	11	Trip Delay $\Rightarrow$ 3.0 Missed 1 shot Mid-Tide
	1329	7803	1802	11	1600	11	11	11	
	1330	7897	1829	11	1595	11	11	11	
	1331	7993	1857	11	1590	11	11	11	SOUND BUOY 363 @ 1906 $\approx$ 8022
	1332	8087	1925	11	1550	11	11	11	SOUND BUOY 364 @ 1915 $\approx$ 8052
	1333	8183	1953	11	1540	11	11	11	SOUND BUOY 365 @ 1937
	1334	8278	2020	11	1525	11	11	11	<del>1937</del>
	11	8365	2046	11	11	19.5	11	11	Speed over ground = 5 knots
	1335	8374	2048	11	1500	11	11	11	
	1336	8468	2114	11	1470	11	11	11	
	1337	8561	2149	11	1450	11	11	11	
	1338	8654	2219	11	1410	11	11	11	
	1339	8748	2250	2.5	1400	11	11	11	Trip Delay change
	1340	8841	2320	11	1400	11	11	11	

R/V ~~ROBERT D. CONRAD~~ Vema

Cruise: V3618

Line: 86

## RECORDING LOG

MCS

offshore Kenya

DFS IV

(32)

Format: SEGB

BPI: 700

Date On	Tape #	Shot Point #	Time Gmt	Trip Delay ms	Depth fms	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
11/27/80	1341	8935	2350	2.5K	1390	19.5	4	12K	
11/28/80	1342	9028	0020	4	1350	11	11	11	conoblock 366 (00047 ~ 9105)
	1343	9122	0051	2K	1300	11	11	11	trip delay -> 2.00
	1344	9213	0120	2000	1260				
	1345	9305	0150	2000	1210				
	1346	9397	0220	2000	1150				
	1347	9484	0250	2000	1100				
	1348	9581	0319	2000	1010				
	"	9654	0343			14.5			decrease
	"	9667	0348	2000 1000		13.5			pop rate to 2.8 sec (Spd = 4.1)
	1349	9673	0351	1000	860	23.8			reduce TB delay to 1000 ms.
	"	9758	0424			23.5			slow pop rate to 27.9 sec (Spd = 3.5)
	1350	9764	0427	1000	675	27.9			
	1351	9855	0508	1000	665				
	"	9874	0517	1000 0000					TB delay reduced to 0000
	1352	9946	0550		350				
	"	9966	0600						at this time we were going
	1353	9983	0607	0000	280				to change line but decided to
	"	9985	0608			27.9			continue it, so there are 16 shots missing.
						20.8			pop rate to 20.8 (Spd. 4.7K)



## M C S

Cruise: 136-18

Line: 86

continue line 86

offshore Kenya

DFS IV

Format: *SEG B*

BPI: 800

33

[illegible]

R/V ROBERT D. CONRAD *Vlna*Cruise: *V36-18*Line: *87*

## RECORDING LOG

MCS

*offshore Kenya*DFS IV *(34)*Format: *SEG-B*BPI: *800*

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth Fm	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
<i>11/28/80</i>	<i>1355</i>	<i>001</i>	<i>0713</i>	<i>0000</i>	<i>~100</i>	<i>20.8</i>	<i>4</i>	<i>12000</i>	
<i>333</i>	<i>1356</i>	<i>93</i>	<i>0744</i>	<i> </i>	<i>=100</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1357</i>	<i>185</i>	<i>0816</i>	<i> </i>	<i>~60</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>"</i>	<i>192</i>	<i>0818</i>	<i> </i>		<i>20.8</i> <i>24.4</i>	<i> </i>	<i> </i>	<i>pop rate to 24.4 (4.0K over ground)</i>
	<i>1358</i>	<i>276</i>	<i>0852</i>	<i> </i>	<i>=40</i>	<i>24.4</i>	<i> </i>	<i> </i>	
	<i>"</i>	<i>313</i>	<i>0907</i>	<i> </i>		<i>24.4</i> <i>27.9</i>	<i> </i>	<i> </i>	<i>pop rate to 27.9 (3.5K over ground)</i>
	<i>1359</i>	<i>366</i>	<i>0933</i>	<i> </i>	<i>40</i>	<i>27.9</i>	<i> </i>	<i> </i>	
	<i>1360</i>	<i>460</i>	<i>1015</i>	<i> </i>	<i>40</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1361</i>	<i>552</i>	<i>1057</i>	<i> </i>	<i>100.50</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1362</i>	<i>643</i>	<i>1139</i>	<i> </i>	<i>60</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1363</i>	<i>735</i>	<i>1221</i>	<i> </i>	<i>60</i>	<i> </i>	<i> </i>	<i> </i>	<i>1236. 584.36.7</i>
	<i>"</i>	<i>750</i>	<i>1241</i>	<i> </i>		<i>24.4</i>	<i> </i>	<i> </i>	<i>CHANGE POP RATE TO 24.4</i>
	<i>"</i>	<i>805</i>	<i>1252</i>	<i> </i>			<i> </i>	<i> </i>	<i>Tape ID incorrect (read 1364) reset to 1363</i>
	<i>1364</i>	<i>877</i>	<i>1300</i>	<i> </i>	<i>60</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1365</i>	<i>919</i>	<i>1338</i>	<i> </i>	<i>60</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1366</i>	<i>1011</i>	<i>1415</i>	<i> </i>	<i>60</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1367</i>	<i>1104</i>	<i>1453</i>	<i> </i>	<i>60</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1368A</i>	<i>1195</i>	<i>1530</i>	<i> </i>	<i>60</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>"</i>	<i>1208</i>	<i>1535</i>	<i> </i>	<i>75</i>	<i> </i>	<i> </i>	<i> </i>	<i>missed 13 shots in reset</i>
	<i>1369</i>	<i>1301</i>	<i>1614</i>	<i> </i>	<i>75</i>	<i> </i>	<i> </i>	<i> </i>	

R/V ROBERT-D. CONRAD *Emma*  
Cruise: V3618  
Line: 87

# RECORDING LOG

MCS  
offshore Kenya

DFS IV 35  
Format: SLLB TS  
BPI: 300

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay SEC	Depth fms	Pop Rate sec	Samp. Rate min	Rec. L. min	Comments
18 Nov 1980	1370	1391	1650	0	75	24.4	4	12.1K	
	1371	1483	1727	0	75	"	"	"	A/C → 1940 @ 1700
	1372	1576	1806	"	75	"	"	"	SONOBUOY 368 @ 1746
	1373	1668	1843	"	75	"	"	"	
	1374	1760	1920	"	75	"	"	"	
	1375	1852	1958	"	75	"	"	"	
	1376	1943	2035	"	75	"	"	"	
	1377	2035	2112	"	75	"	"	"	
	1378	2127	2150	"	75	"	"	"	
	1379	2219	2227	"	75	"	"	"	
	1380	2315	2306	"	75	"	"	"	Missed 4 shots/SONOBUOY 369 @ 2306
	"	2321	2309	"	75	"	"	"	Tape Deck screwed up missed 8 total
	1381	2414	2346	"	75	"	"	"	SONOBUOY 370 @ 2313
11	1382	2506	0024	"	75	"	"	"	SONOBUOY 371 @ 2334 SB 372 @ 0012
29	1383	2599	0102		75				speed = 3.3K
40	"	2647	0121			24.4 27.4			increase decrease pop rate to 27.4K
	"	2661	0128			27.4 19.5			above mean, pop rate should be 19.5 for 3.3K
	1384	2641	0143		60	29.5			
	1385	2784	0228		60				
	1386	2876	0313		60				



R/V ROBERT D. CONRAD

Cruise: 136-15

Line: 88

## RECORDING LOG

MCS

Begin Line 88

offshore range

DFS IV

Format: SEG-B

BPI: 800

(37)

Date hour	Tape #	Shot Point #	Time GMT	Trip Delay min	Depth F/M	Pop Rate % sec	Samp. Rate ms	Rec. L. m3	Comments
11/29/82	1388	001	0451	0000	130	29.5	4	12000	
334	"	77	0528			29.5 23.8			increase pop rate to 23.8 (spd = 4.1)
	1389	93	0534		150	23.8			
	1390	185	0610		165	23.8			
	"	270	0624			23.8 18.1			increase pop rate to 18.1 (spd = 5.4)
	1391	277	0642		200	18.1			SB #373 @ 0649
	1392	369	0710		225				
	1393	461	0738		250				
	1394	553	0806		280				
	1395	645	0835		330				
	1396	737	0903		350				
	"	766	0912			17.1			Speed over ground = 5.7 Kts P.R.
	1397	0831	0931		370				missed 2 shots
	"	0853	0936	0.5					Delay 1 to 0.5 sec.
	1398	0925	0957		380				81B 374 slicker 0954/10012
	1399	1016	1025		410				
	1400	1108	1052		430				
	1401	1200	1119		470				
	1402	1292	1145		520				
	"	1315	1152	0.5	"	15.4			Δ Popl Rate → 15.4

R/V ROBERT D. CONRAD *NEMA*  
 Cruise: V 36-18  
 Line: 88

RECORDING LOG  
 MCS  
 OFFSHORE KENYA

DFS IV  
 Format: SER B  
 BPI: 800

(38)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay Sec	Depth fms	Pop Rate ms	Samp. Rate ms	Rec. L. ms	Comments
11/29/80	1402	1323	1154	1.0	520	15.4	4	12K	A Delay to 1.0 Sec (SB 375 @ 1328)
	"	1330	1156	"	"	15.8			A Pop rate to 15.8
	"	1346	1206	"	"	16.0			A Pop rate to 16.0
	1403	1394	1213	"	630	"			
	1404	1487	1239	"	720	"			
	1405	1581	1305	"	820	"			
	1406	1674	1330	"	900	"			Shots up to 1728 appear on 1405 tape
	1407	1769	1356	"	950	"			
	"	1827	1412	1.0/2.0					change delay to 2.0 sec
	1408	1860	1431	2.0	1030	16.0	4		
	1409	1953	1447	"	1110	"			
	1410	2046	1513	"	1150	"			
	1411	2138	1538	"	1180	"			
	-1411-	2153	1542	"		16.6			A Pop rate to 16.6
	1412	2231	1604	"	1280	"			
	1413	2325	1630	"	1340	"			
	1414	2417	1655	"	1360	"			
	1415	2510	1720	"	1350	"			Pop Rate → 17.8
	1416	2602	1745	"	1410	"			A/C → 085 @ 1700
	1417	2695	1811	"	1410	"			

R/V ROBERT D. CONRAD VENA

Cruise: V3618

Line: 88

## RECORDING LOG

MCS

offshore Kenya

DFS IV (39)

Format: SAG-B

BPI: 800

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec.	Depth fms	Pop Rate %	Samp. Rate %	Rec. L. %	Comments
11/29/80	1418	2787	1838	2.05	1490	128	4	121	
	1419	2881	1906	2.5	1500	4	4	4	
	1420	2975	1933	4	1510	4	4	4	
	1421	3069	2000	4	1510	4	4	4	
	1422	3162	2027	4	1515	4	4	4	
	1423	3249	2053	4	1525	169	4	4	Pop rate $\approx$ 16.9
	1424	3342	2118	4	1540	4	4	4	SB376 @ 2134
	1425	3436	2144	3.0	1600	4	4	4	
	1426	3530	2210	4	1610	4	4	4	
	1427	3624	2236	4	1620	4	4	4	
	1428	3718	2301	4	1650	4	4	4	
	1429	3812	2327	4	1690	4	4	4	
	1430	3907	2353	4	1700	4	4	4	
11/30/80	1431	4009	0029	4	1700	4	4	4	Missed 5 shots
	1432	4103	0047	4	1740	4	4	4	
	"	4177	0108			10.9 / 17.1			pop rate to 17.1 (spd = 5.7K)
	1433	4198	0114		1750	17.1			Gun #2 is misfiring
	"	4244	0127	3000 / 4000					increase TB delay to 4000 ms.
	1434	4291	0141	4000	1760				
	1435	4409	0215	1	1800				Had transport trouble - missed 27 shots

R/V ROBERT D. CONRAD

Cruise: V36-18

Line: 88

RECORDING LOG  
MCS

offshore Kenya.

DFS IV

Format: SECR

BPI: 500

Date	Tape #	Shot Point #	Time	Trip Delay	Depth	Pop Rate	Samp. Rate	Rec. L.	Comments
6-2-80	1436	4511	0245	4000	1810	17.1	4	12000	missed 7 shots - TFX 2 went on
11/3/80	1437	4604	0312	4	1820	1	1	1	gun #2 still not always firing
	1438	4696	0339	1	1825	1	1	1	
	1439	4790	0406	1	1830	1	1	1	
	1440	4883	0433	1	1850	1	1	1	
	1441	4976	0500	1	1850	1	1	1	
	1442	5069	0527	1	1870	1	1	1	
	1443	5163	0555	1	1890	1	1	1	
	1444	5257	0622	1	1890	1	1	1	
	1445	5350	0649	1	1900	1	1	1	
	"	5385	0700	1		17.6 16.3	1	1	pop rate to 16.3 [Spd = 6.5K] gradually increased pop rate until we quit shooting guns while tape is running. This <del>gives</del> is 17.08
		5419	0708	1		18.3 17.0	1	1	
	1446	5442	0716	1	1925	17.0	1	1	
	1447	5536	0743	1	1930	1	1	1	
	1448	5629	0810	1	1940	1	1	1	2 SB # 377 @ 0809
	1449	5722	0837	1	1960	1	1	1	
	1450	5816	0905	1	1970	1	1	1	
	1451	5910	0932	1	1990	1	1	1	



R/V ROBERT D. CONRAD *Vema*  
 Cruise: *V36-18*  
 Line: *88*

# RECORDING LOG

MCS

*Offshore Kenya*

DFS IV

Format: *SEG-B*

BPI: *800*

(41)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth fm	Pop. Rate SPS	Samp. Rate ms	Rec. L. ms	Comments
<i>11/30/8</i>	<i>1452</i>	<i>6004</i>	<i>0959</i>	<i>4.0</i>	<i>2000</i>	<i>17.0</i>	<i>4</i>	<i>12000</i>	
	<i>1453</i>	<i>6098</i>	<i>1027</i>		<i>2010</i>				
	<i>1454</i>	<i>6192</i>	<i>1054</i>		<i>2015</i>				
	<i>1455</i>	<i>6292</i>	<i>1123</i>		<i>2030</i>				<i>missed 5 shots / Discards used</i>
	<i>1456</i>	<i>6328</i>	<i>1134</i>		<i>2040</i>				
	<i>1457</i>	<i>6427</i>	<i>1203</i>		<i>2080</i>				<i>missed 6 shots</i>
	<i>1458</i>	<i>6520</i>	<i>1230</i>		<i>2090</i>				<i>A/C 090</i>
	<i>1459</i>	<i>6615</i>	<i>1258</i>		<i>2090</i>				
	<i>1460</i>	<i>6709</i>	<i>1325</i>		<i>2090</i>				
	<i>1461</i>	<i>6804</i>	<i>1353</i>		<i>2100</i>				
	<i>1462</i>	<i>6898</i>	<i>1420</i>		<i>2105</i>				
	<i>1463</i>	<i>6993</i>	<i>1448</i>		<i>2110</i>				
	<i>"</i>	<i>7071</i>	<i>1510</i>		<i>1</i>	<i>16.6</i>			<i>Δ Pop Rate → 16.6</i>
	<i>"</i>	<i>7076</i>	<i>1512</i>		<i>↓</i>	<i>17.0</i>			<i>Δ Pop Rate → 17.0</i>
	<i>1464</i>	<i>7088</i>	<i>1515</i>		<i>2125</i>				
	<i>1465</i>	<i>7183</i>	<i>1543</i>						
	<i>"</i>	<i>7185</i>	<i>"</i>	<i>4.0/5.0</i>	<i>2130</i>				<i>Δ Delay → 5.0</i>
	<i>1466</i>	<i>7277</i>	<i>1610</i>	<i>5.0</i>	<i>2140</i>				
	<i>1467</i>	<i>7371</i>	<i>1638</i>	<i>5.0</i>	<i>2150</i>				
	<i>1468</i>	<i>7466</i>	<i>1705</i>	<i>"</i>	<i>2155</i>	<i>"</i>			

R/V ROBERT D. CONRAD *Vema*

Cruise: V3618

Line: 88

## RECORDING LOG

MCS

*Off Shore Kenya*

DFS IV (42)

Format: seab

BPI: 800

Date Calendar	Tape # <i>ones</i>	Shot Point # <i>ones</i>	Time GMT	Trip Delay <i>M3</i>	Depth <i>fms</i>	Pop Rate <i>sec</i>	Samp. Rate <i>M3</i>	Rec. L. <i>M3</i>	Comments
	1469	7561	1733	5.0	2190	17.0	4	12K	
	1470	7656	1801	"	2195	"	"	"	Schubler 377 (a) 1819
	1471	7751	1828	"	2200	"	"	"	
	1472	7846	1856	"	2200	"	"	"	
	1473	7941	1924	"	2210	"	"	"	
	1474	8036	1951	"	2215	"	"	"	
	1475	8131	2019	"	2225	"	"	"	
	1476	8224	2046	"	2250	"	"	"	AK-2105 at 2100
	1477	8319	2114	"	2275	"	"	"	tope Deck screwed up, switching to TPX-1
	"	8338	2119	"	"	"	"	"	Missed 19 shots
	1478	8432	2147	"	2275	"	"	"	TPX-2 Missing shots again switched to TPX-1
	"	8447	2151	"	"	"	"	"	Missed 15 shots
	"	8490	2203	"	"	18.4	"	"	Pop Rate = 18.4
	1479	8541	2219	"	2300	"	"	"	
	1480	8635	2248	"	2300	"	"	"	<del>2248</del>
	1481	8729	2317	"	2300	"	"	"	
	1482	8823	2346	"	2300	"	"	"	Schubler 374 (a) 2356
12/1/80	1483	8918	0015	"	2310	"	"	"	
	1484	9011	0044	"	2315	"	"	"	
	1485	9105	0113		2325	"	"	"	

R/V ROBERT D. CONRAD

Cruise: V 56-15

Line: 88

## RECORDING LOG

MCS

offshore from 9

DFS IV

Format: 56A

BPI: 8000

Date (mm)	Tape #	Shot Point #	Time 0211T	Trip Delay min	Depth fms	Pop Rate sec	Samp. Rate min	Rec. L. min	Comments
12/1/50	1486	9199	0142	5000	2330	18.4	4	12000	
	1487	9243	0210		2330				
	1488	9386	0239		2360				
	"	9455							guns fired in extra slot, don't know
	1489	9481	0308		2380				
	1490	9579	0337		2400				
	1491	9667	0405		2400				
	1492	9760	0434		2400				
	1493	9855	0503		<del>2400</del> 2400				
	1494	9919	<del>0532</del> 0532		<del>2400</del> 2400				
	1495	10043	0601		2410				
	1496	10137	0600		2420				
	1497	10230	0658		2430				
	1498	10323	0727		2435				
	1499	10417	0756		2440				
	1500	10510	0824		2445				
	1501	10604	0853		2450				
	1502	10699	0922		2450				
	1503	10792	0951		2460				
	"	10838	1005						End of line 88

R/V ROBERT D. CONRAD VEMA  
Cruise: V36-18  
Line: ~~88~~ 89

# RECORDING LOG

MCS

Offshore Kenya

DFS IV <sup>(44)</sup>

Format: SKEB

BPI: 800

Note: New tape  
head installed  
in TPX-1 at  
beginning of  
leg 89

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth fms	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
12/1/80	1504	01	1156	5K	2440	18.4	4	12K	Begin Line 89
336	"	07	1159	"	-	19.1	"	"	Δ Pop Rate → 5.1 Kms
	1505	96	1228	"	2440	1	1	1	
	1506	189	1258	"	2440				
	1507	282	1327	"	2430				
	1508	376	1359	"	2430				(f Drive began to sound like beginning record seg.
	1509A	470	1430	"	2440				{ missed several (~37 shots) JPA 2.
	1509	502	1440	"	2405				Δ Tape TD to 505 from 487
	1510	596	1510	"	2400	19.1			4 shots missed middle of tape (can't hear)
	1511	694	1542	"	2395	1			
	1512	787	1612	"	2390	1			
	"	820	1623	"	-				2 Guns On
	1513	880	1643	"	2400	11			
	1514	975	1713	"	2400	11			tape screwed up, switched to TPX-1
	"	981	1715	"	"	11			Missed 5 shots
	1515	1075	1746	"	2400	11			Pop Rate → 20.8, shot 1153
	1516	1170	1719	"	2400	11			
	1517	1264	1851	"	2360	"			
	1518	1362	1929	"	2350	17.1			missed 37 shots somewhere
	1519	1457	1953	"	2350	11			Pop Rate → 17.1 @ 1395 shots

Line: 89

R E C O R D I N G      L O G  
M C S

off shore Kenya

290

4.5

DFS IV (45)

Format: *Seg B*

BPI: 700

[illegible]

R/V ROBERT D. CONRAD

Cruise: V 36-18

Line: 90

## RECORDING LOG

MCS

offshore Kenya

20.0

DFS IV

Format: SECB

BPI: 800

(46)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. Ls	Comments
12/2/80	1532	001	0200	5000	2275	20.0	4	12000	Gun 2 still out
337	1533	94	0231		2265				
	1534	186	0303		2260				
	"	204	0309		2260				Gun 2 on again (2 guns now)
	"	264	0330		-	22.2			Pop rate to 22.2 (4.4K over prod)
	"	265	0330		-	22.2			A/C 275
	1535	281	0336		2260				
	1536	374	0441		2255				
	1537	468	0446		2255				
	1538	561	0521		2255				
	1538	562	0533		-	19.9			Δ Pop Rate to 19.9 (4.1K over prod)
	1539	655	0553		2250				
	1540	747	0624		2240				
	1541	849	0655		2235				
	1542	940	0726		2230				
	1543	1035	0757		2225				
	1544	1140	0830		2225				Failed to work
	"	1145	0832						5 shots lost
	"	1240	0903						@ 0836 SB# 380 over.
	1545	1240	0903		2215				

R/V ROBERT D. CONRAD *Vena*  
 Cruise: V36-18  
 Line: 90

# RECORDING LOG

MCS

*offshore Kenya.*

DFS IV

Format: SEG-B

BPI: 800

(47)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. L.	Comments
12/2/80	1546	1336	0934	5000	2205	19.9	4	12000	
	1547	1428	1004		2195				
	1548	1521	1034		2195				
	1549	1614	1104		2190				
	1550	1710	1135		2190				
	1551	1804	1206		2175				
		1848			-				
	1552	1910	1241		2170				Twelve shots lost
	1553A	2005	1311		-				28 shots missed
	1553	2033	1321		2140				{ Did not reset file count after 28 shots missed - reset at 1st shot 1554 missed ~ 3 shots beginning of 1554
	1554	2131	1353		2150				
	1555	2226	1423		2130				
	<del>1556</del>	2320	1454						oil check - off for 47 shots.
	1556	2367	1509		2110				SP 2382 increment file count.
	"	-	1523		-				SB 381 on
	1557	2462	1546	4000	2090				Δ Delay to 4.0 sec
	1558	2556	1610		2080				
	1559	2651	1641		2075				
	1560	2745	1712	11	2090	11	11	11	
	11	2749	1713	11	11	17.1	11	11	POP Rate → 17.1

R/V ROBERT D. CONRAD VEMACruise: V3618Line: 90RECORDING LOG  
MCS

DFS IV (418)

Format: 526-13BPI: 800

offshore Kenya

Date GMT	Tape # obs	Shot Point # obs	Time GMT	Trip Delay ms	Depth fms	Pop Rate sec	Samp. Rate min	Rec. L. ms	Comments
12/2/80	1561	2839	1739	4K	2075	17.1	4	12K	
	1562	2933	1806	"	2060	"	"	"	
	1563	3027	1834	"	2060	"	"	"	
	1564	3121	1901	"	2025	"	"	"	
	1565	3215	1929	"	2015	"	"	"	
	1566	3309	1956	"	2010	"	"	"	
	1567	3406	2024	"	2010	"	"	"	
	1568	3499	2051	"	2005	"	"	"	tape rewound by itself
	"	3525	2059	"	"	"	"	"	Missed 26 shots
	1569	3620	2127	"	1925	"	"	"	
	1570	3713	2154	"	1925	"	"	"	
	1571	3807	2221	"	1925	"	"	"	2040 GIRL 582 @ 2219
	1572	3900	2248	"	1900	"	"	"	
	1573	3994	2315	"	1900	"	"	"	no data on this tape
	1574	4088	2343	"	1775	"	"	"	
12/3/80	1575	4182	0010	3.5	1820	"	"	"	delay → 3.5 @ shot 4188
	1576	4277	0041	3.5	1860	"	"	"	pop rate to 20.8 on tape 1575 @ shot 4206
	1577	4326	0059	1	1865	20.8*			this tape rewound by itself
	1578	4422	0131		1820	1	1	1	Note: pop rate was set to 20.8. Don't know when it was changed to 20.8 from 17.0
	"					1	1	1	



R/V ROBERT D. CONRAD *Vema*  
Cruise: V36-18  
Line: 90

# RECORDING LOG

MCS

*offshore Kenya.*

DFS IV

Format: SEG-B

BPI: 800

(49)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay mS	Depth FM	Pop Rate sec	Samp. Rate mS	Rec. Ls	Comments
12/3/80	1579	4515	0203	3500	1800	20.8	4	12000	
		4537	0210			<del>20.8</del> 18.8			change pop rate to 18.8 (spd = 6.3 K)
		4540	0211			<del>18.8</del> 17.8			pop rate to 17.8 Note: this pop rate does not match 6.3 K but is as close as you can get to avoid shooting into end of last tape
	1580	4608	0231		1780	17.8			
	"	4611	0232			<del>17.8</del> 19.9			speed of 6.3 K was incorrect; speed is 4.9 K. Change pop rate to 19.9.
	1581	4701	0301		1750	19.9			pop rate to 17.8 (speed = 5.7 K)
	"	4782	0327			<del>19.9</del> 17.8			A/C 313° (Not a new line)
	"	4791	0330						
	1582	4794	0331		1760	17.1			
	1583	4887	0358		1610				
	1584	4980	0425		1725				
	1585	5074	0452		1725				SB 383 @ 0503
	1586	5167	0519		1715				
	1587	5261	0542		1670				
	1588	5354	0614		1650	17.1/21.2			
	"	5432	0636			21.2			speed over-ground 4.6 A rate → 21.2
	1589	5450	0643		1640				
	1590	5543	0716		1620				

1541

5637

0749

R/V ROBERT D. CONRAD

Vema

Cruise: V36-18

Line: 90

## RECORDING LOG

MCS

offshore Kenya.

DFS IV

Format: SEG-B

BPI: 800

(50)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. L ms	Comments
12/3/80	1591	5637	0749	3.5K	1600	21.2	#	12000	
	"	5655	0756	3.5K 3.0K					CHANGE DELAY
	1592	5730	0823	3.0K	1590	"	"	"	
	"	5824	0856						LAST SHOT COMPRESSOR off
									DesKewer TRX-2 - <del>not working</del> .
	1593	5957	0941	3000	1510	21.2	#		Resume Line 90 - Compressor on
	"	6006	1002			17.8			Speed Change. Δ Pop rate
	1594	6045	1014		1500				sonobuoy 384 @ 1016
	1595	6139	1042		1460				
	1596	6231	1109		1450				
	1597	6331	1138		1410				6 shots missed.
	1598	6424	1205		1390				failed to function
	"	6430	1206		"				6 shots missed
	"	6471	1218		"	19.1			Change pop. rate
	1599	6523	1235	2500	1300				Change delay to 2.1K.
	—	6616	1305	—	—				Compressor shut-down - Last shot
	1600	6806	1407		1150	19.1			incremented tape ID @ SP 6834
	"	6820	1412			18.1			Δ Pop Rate → 18.1 5.4 K over gnd.
	1601	6899	1436		1140				

R/V ROBERT D. CONRAD — Vema

Cruise: V3618

Line: 90

## RECORDING LOG

MCS

offshore Kenya

DFS IV

(51)

Format: SEG B

BPI: 800

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth fms	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
12/3/80	1602	6993	1505	15K	1080	180	4	12K	A Delay to 1.5 sec at first shot
	1603	7087	1534	//	1050	//	//	//	
	1604	7181	1603	//	1070	//	//	//	
	1605	7273	1631	//	975	//	//	//	
	1606	7365	1659	//	900	//	//	//	
	1607	7458	1728	1.0	850	//	//	//	
	1608	7550	1758	//	800	//	//	//	
	1609	7643	1825	//	800	//	//	//	
	1610	7735	1853	//	800	//	//	//	
	1611	7827	1922	//	795	//	//	//	
	1612	7919	1950	//	760	//	//	//	
	1613	8012	2014	//	700	//	//	//	
	1614	8104	2047	//	700	//	//	//	Some delay 300 at 2110
	1615	8197	2116	//	600	//	//	//	
	1616	8289	2144	35	600	//	//	//	TRIP Delay 3.5 at shot 8294
	1617	8382	2213	//	590	//	//	//	
	1618	8474	2241	//	550	//	//	//	
	1619	8567	2309	//	500	//	//	//	
	1620	8660	2338	//	500	//	//	//	
12/4/80	1621	8753	0007	//	500	//	//	//	

R/V ~~ROBERT D. CONRAD~~ VEMA

Cruise: U3618

Line: 90

## RECORDING LOG

MCS

DFS IV

(53)

Format: SEG-B

BPI: 800

offshore Kenya

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FMS	Pop Rate SEC	Samp. Rate MS	Rec. MS L.	Comments
12/4/80	1622	8845	0035	500	510	18.1	4	12K	SB387 @ 0047Z
	1623	8937	0103		530				Some 1% of near-fines messy; prob. due to following sea.
	1624	9019	0132		500				
	1625	9121	0200		475				
	1626	9213	0247		475	16.9			Pop 150 to 16.9 (spd = 5.3 K)
	1627	9305	0252		450				SB #388 @ 0253Z
	1628	9397	0317		415				
	1629	9489	0342		400				
	1630	9582	0408		390				
	1631	9675	0433		370				
	1632	9766	0458		350				
	1633	9858	0524		330				
	1634	9950	0553		310	27.1			slow pop rate to 27.1 sec. (spd = 3.6 K)
	1635	10043	0636	0.0	250				Δ delay to 0.0
	—	10108	0706						Last shot Line 90
									Turn already near-finished when bridge called lab.

Line: 91

## M C S

Offshore Kenya

BPI:

53

[illegible]

R/V ROBERT D. CONRAD VEMA

Cruise: V 3618

Line: 92

## RECORDING LOG

MCS

Offshore Kenya

DFS IV

Format: Seg B

BPI: 800

(54)

Date	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth fms	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
41E Dec 1980	1646	001	1348	0	180	23.8	4	12k	Reset count at 8P 008
	1647	093	1424		300	"			S/B 390 at 1422 hrs
	"	160	1429		"	17.5			Change Pop Rate 17.5
	1648	187	1453		370				missed 2 shots
	1649	306	1527		380				Problem with taps missed 27 shots.
	1650	399	1554		380				
	1651	491	1621		380				
	1652	585	1648		410				
	1653	678	1715	"	400	"	"	"	
	1654	772	1743	"	400	"	"	"	
	1655	865	1810	"	415	"	"	"	
	1656	959	1837	"	430	"	"	"	
	1657	1052	1904	"	450	"	"	"	
	1658	1145	1931	"	450	"	"	"	
	1659	1237	1958	"	500	"	"	"	SB 392 @ 2019
	1660	1330	2025	"	590	"	"	"	
	1661	1422	2052	"	600	"	"	"	
	1662	1515	2119	"	605	"	"	"	
	1663	1607	2145	"	660	"	"	"	
	1664	1700	2212	"	715	"	"	"	

R/V ROBERT D. CONRAD - Verna

Cruise: V3618

Line: 92

## RECORDING LOG

MCS

off shore Kenya

DFS IV (55)

Format: 506-B

BPI: 800

Date	Tape #	Shot Point #	Time	Trip Delay	Depth	Pop Rate	Samp. Rate	Rec. L.	Comments
4/10	1665	1792	2239	0	790	17.5	4	12K	
	1666	1885	2306	01.0	800	"	"	"	Trip delay to 1.0 @ 1891
	1667	1977	2333	"	815	"	"	"	SB 393 @ 2337
4/5/70	1668	2010	0002	"	850	"	"	"	Pop Rate to 20.3 @ 2019 (short form)
	1669	2162	0034	"	850	20.3	"	"	
	1670	2254	0105		900				
	"	2285	0116	1000 2000					TB delay to 2000 ms.
	1671	2346	0136	2000	925				
	1672	2438	0208		950				
	1673	2530	0239		975				
	"	2558	0248			20.3 18.8			Pop rate to 18.8 (speed = 5.2 K)
	1674	2622	0308		1025	18.8			
	1675	2713	0336		1030				SB # 394 @ 0403
	1676	2805	0404		1070				
	1677	2897	0433		1080				
	"	2929	0442			18.8 17.8			Pop rate to 17.8 speed = 5.5 K
	1678	2989	0500		1100	17.8			
	1679	3081	0527		1100				
	1680	3173	0554		1090				
	1681	3265	0620		1065				

R/V ROBERT D. CONRAD *Verna*  
 Cruise: *V36-18*  
 Line: *92*

# RECORDING LOG

MCS

*offshore Kenya*

DFS IV

Format: SEG-B

BPI: 800

(56)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
5 Dec 80	1682	3357	0647	2K	1055	17.8	4	12K	
	—	3449	0714						End of tape 1682 stop for oil chx.
	1683	3519	0734		1120				Start up both guns / inc. file count @
	1684	3612	0801		1150				
	1685	3704	0828		1210				
	1686	3797	0855		1270				
	1687 A	3896	0924		1315				55 shots missed
	1687	3933	0935	— 0915	42 SK	395	015		TPX1 missing shots changed decks
	1688	<del>4211</del> 4024	1001	2K/SK	1345	17.8			Sum of 43 shots missed
	"	4061	1012	3K	—				A Delay to 3K
	1689	4117	1038		1375				
	1690	4210	1055		1420				
	1691	4301	1123		1450				
	1692	4397	1150		1475				
	—	4428	1213		—	16.0			change pop rate to 16.0
	1693	4492	1217		1510	16.0			
	1693	4495	1218		—	16.9			change pop rate to 16.9
	1694	4585	1243		1530				
	1695	4679	1308		1550				
	1696	4774	1335		1580				



R/V ROBERT D. CONRAD *Vizma*

Cruise: V3618

Line: 92

RECORDING LOG  
MCS*Off Shore Lager*

DFS IV

Format: SE6 B

BPI: 800

57

Date GLOT	Tape #	Shot Point #	Time GLOT	Trip Delay min	Depth Fm.	Pop Rate Sec	Samp. Rate min	Rec. Lg	Comments
<del>57</del>	1697	4868	1400	3K	15900	16.9	4	12K	
<del>Dec</del>	1698	4961	1420	"	1605	"	"	"	
<del>1989</del>	1699	5055	1452	"	1630	"	"	"	
	1700	5149	1518	"	1630	"	"	"	
	1701	5243	1544	"	1660	"	"	"	
	1702	5337	1609	"	1700	"	"	"	
	1703	5432	1635	"	1710	"	"	"	
	1704	5525	1701	"	1715	"	"	"	
	1705	5619	1729	"	1725	"	"	"	
	1706	5713	1752	"	1740	"	"	"	Pop Rate $\rightarrow$ 18.1 @ shot 5785
	1707	5807	1819	"	1740	18.1	4	"	
	1708	5901	1848	"	1780	"	"	"	
	1709	5995	1917	3.5	1795	"	"	"	Trip delay $\rightarrow$ 3.5
	1710	6089	1946	"	1800	"	"	"	
	1711	6183	2015	"	1800	"	"	"	
	1712	6276	2043	"	1805	"	"	"	
	1713	6370	2112	"	1810	"	"	"	5040 Buoy #399 @ 2137
	1714	6463	2141	"	1815	"	"	"	<del>5040</del>
	1715	6557	2210	"	1815	"	"	"	<del>5040</del>
	1716	6651	2239	"	1855	"	"	"	

Line: 92

M C S

offshore Kenya

BPI: 800

[illegible]

R/V ROBERT D. CONRAD Vena

Cruise: V3618

Line: 93 (new line because of power failure) off shore Kenya.

RECORDING LOG  
MCS

DFS IV (59)

Format: Seg B

BPI: 800

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay Sec	Depth fms	Pop Rate sec	Samp. Rate Hz	Rec. L. Hz	Comments
12/6/80	1718	1	0000	3.5	1860	18.1	4	12K	
	1719	45	0025	11	1920	4	4	4	
	1720	188	0051	"	1940	"	"	"	
	"	221							
	"	231	0107	3500 4000					line # not changed to 93; updated.
	"	268	0119			18.1 18.8			increase TB delay to 4000 ms.
	1721	282	0123		1935	18.8			pop rate to 18.8 (speed = 5.2 K)
	1722	375	0151		1950				SB400 @ 0126
	1723	469	0220		1950				
	1724	563	0249		1950				
	1725	657	0318		1960				
	1726	750	0347		1970				
	"	800	0402	4000 4500					TB delay increased to 4500 ms.
	1727	844	0416	4500	1970				
	"	916	0438						
	"					18.8 18.1			pop rate to 18.1 (spd = 6 K) this is about as fast a pop rate as I can go with this setting a slight rate end of the previous type.
	1728	937	0444		1980	18.1			
	1729	1031	0513		1990				
	1730	1124	0542		2000				
	1731	1218	0611		2025				

R/V ~~ROBERT D. CONRAD~~ *Verna*

Cruise: V36-18

Line: 93

## RECORDING LOG

M C S

offshore Kenya.

DFS IV

Format: *SEGB*

BPI: 800

[illegible]

R/V ROBERT D. CONRAD *Vema*Cruise: *V36-18*Line: *94*

## RECORDING LOG

MCS

*offshore Kenya*

DFS IV

Format: *SEG-B*BPI: *800*

(61)

Date <i>GMT</i>	Tape. #	Shot Point #	Time <i>GMT</i>	Trip Delay <i>ms</i>	Depth <i>FM</i>	Pop Rate <i>sec.</i>	Samp. Rate <i>ms</i>	Rec. L. <i>ms</i>	Comments
<i>12/6/80</i>	<i>1734</i>	<i>001</i>	<i>0857</i>	<i>4500</i>	<i>2030</i>	<i>18.1</i>	<i>4</i>	<i>12000</i>	<i>course 256°</i>
	<i>"</i>	<del><i>95</i></del>	<del><i>0920</i></del>		<del><i>2025</i></del>				<i>SB # 401 @ 0853</i>
	<i>1735</i>	<i>95</i>	<i>0920</i>		<i>2025</i>				
	<i>1736</i>	<i>188</i>	<i>0949</i>		<i>2015</i>				
	<i>1737</i>	<i>283</i>	<i>1018</i>		<i>1995</i>				
	<i>1738</i>	<i>377</i>	<i>1047</i>		<i>1985</i>				
	<i>1739</i>	<i>472</i>	<i>1116</i>		<i>1975</i>				
	<i>1740</i>	<i>567</i>	<del><i>1145</i></del>		<i>1920</i>				
	<i>1741</i>	<i>662</i>	<del><i>1212</i></del>		<i>1940</i>				
	<i>1742</i>	<i>756</i>	<i>1244</i>		<i>1930</i>				
	<i>1743</i>	<i>851</i>	<i>1313</i>		<i>1920</i>				
	<i>"</i>	<i>866</i>	<i>1318</i>	<del><i>4500</i></del> <i>4000</i>					<i>CHANGE DELAY → 4000 ms SB # 402 @ 1335</i>
	<i>1744</i>	<i>945</i>	<i>1342</i>	<i>4000</i>	<i>1910</i>				
	<i>1745</i>	<i>1039</i>	<i>1411</i>		<i>1900</i>				
	<i>1746</i>	<i>1132</i>	<i>1440</i>	<i>"</i>	<i>1900</i>	<i>"</i>			
	<i>"</i>	<i>1179</i>	<i>1454</i>						<i>Compressor problem / gun off</i>
	<i>1747</i>	<i>1259</i>	<i>1519</i>	<i>"</i>	<i>"</i>	<i>"</i>			
	<i>1748</i>	<i>1358</i>	<i>1549</i>	<i>"</i>	<i>1860</i>	<i>"</i>			<i>omitted 4 shots</i>
	<i>1749</i>	<i>1453</i>	<i>1618</i>	<i>"</i>	<i>1830</i>	<i>"</i>			
	<i>1750</i>	<i>1547</i>	<i>1647</i>	<i>"</i>	<i>1820</i>	<i>"</i>			

R/V ROBERT D. COMBES VEMA

Cruise: V3618

Line: 94

RECORDING LOG  
MCS

off shore Kenya

DFS IV (62)

Format: SeGB

BPI: 800

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay Ms.	Depth Fms.	Pop Rate Sec.	Samp. Rate Ms.	Rec. L. Ms.	Comments
12/6/80	1751	1641	1716	4.0K	1805	18.1	4	12K	TRIP Delay to 3.5 AT shot 1691
	1752	1735	1745	3.5K	1800	11	11	11	
	1753	1829	1814	"	1800	"	"	"	
	1754	1923	1843	"	1795	"	"	"	
	1755	2016	1912	"	1790	"	"	"	
	1756	2110	1941	"	1785	"	"	"	
	1757	2203	2009	11	1750	11	11	11	SB 403 @ 2034
	<del>1758</del>	2252		11	11	11	11	11	Δ Pop Rate → 19.1 5.1 K.
	1759	2297	2039	11	1700	11	11	11	
	1759	2391	2110	11	1660	11	11	11	
	1760	2485	2140	11	1650	11	11	11	
	1761	2582	2212	11	1625	11	11	11	TPX1 Remount, Missed 4 shots
	1762	2676	2242	11	1610	11	11	11	
	1763	2770	2313	3.0	1600	11	11	11	
	1764	2865	2343	11	1590	11	11	11	SB 404 @ 0006 7 DEC 1980
12/7/80	1765	2959	0014	11	1570	11	11	11	
	1766	3053	0045	11	1560	11	11	11	
	"	3137	0112	1		18.1 / 16.6	1	1	pop rate to 16.6 (Spd = 5.9 K)
	1767	3146	0114	1	1500	16.6	1	1	type ID maybe wrong on this tape.
	1768	3239	0140		1475	1	1	1	

R/V ROBERT D. CONRAD *Vema*Cruise: *V 36-18*Line: *94*

## RECORDING LOG

M C S

*offshore Kenya*

(63)

DFS IV

Format: *SEG-B*BPI: *800*

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth Fm	Pop Rate sec	Samp. Rate ms	Rec. L ms	Comments
12/7/80	1769	3331	0205	3000	1465	16.6	4	12000	
	1770	3424	0230		1450	1			
	1771	3517	0256		1440				
	"	3552	0305		—	$\frac{16.6}{17.5}$			pop rate to 17.5 (spd = 5.6 K)
	1772	3611	0322		1420	17.5			SB # 405 over @ 0335 Z
	1773	3705	0350		1400				missed shot 3704
	1774	3799	0417		1390				
	"	3874	0439	$\frac{3000}{2500}$	—				TB delay decreased to 2500.
	1775	3892	0444	2500	1340				
	1776	3986	0511		1330				
	1777	4080	0539		1310				
	1778	4174	0606		1270				
	1779	4267	0633		1245				
	"	4302	0643			$\frac{17.5}{18.4}$			pop rate to 18.4 (spd = 5.3 K)
	1780	4362	0702		1220	18.4			
	1781	4455	0730		1190	1			
	<del>1781</del>	4534	0754			$\frac{18.4}{17.8}$			pop rate to 17.8 (spd = 5.5 K)
	1782	4550	0759		1175	17.8			
	1783	4623	0826		1140				
	"	4680	0837	$\frac{2500}{2000}$					TB delay decreased to 2000 ms

R/V ROBERT D. CONRAD *Vema*  
 Cruise: *V36-18*  
 Line: *94*

# RECORDING LOG

MCS

*offshore Kenya. Tanzania*

DFS IV

Format: *SE6-B*

BPI: *800*

(64)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
<i>04/7/80</i>	<i>1783</i>	<i>4736</i>	<i>0853</i>	<i>2000</i>		<i>17.8</i>	<i>4</i>	<i>2000</i>	<i>Guns off - compressor oil change</i>
	<i>1784</i>	<i>4835</i>	<i>0922</i>	<i>"</i>	<i>1060</i>	<i>17.8</i>	<i>4</i>	<i>"</i>	<i>Guns on - tape ID reads 1783 incorrectly.</i>
	<i>1785</i>	<i>4927</i>	<i>0949</i>	<i>"</i>	<i><del>960</del> 1025</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1786</i>	<i>5019</i>	<i>1015</i>	<i>"</i>	<i>960</i>	<i> </i>	<i> </i>	<i> </i>	<i>SB 409 @ 1035 Z</i>
	<i>1787</i>	<i>5112</i>	<i>1043</i>	<i>1.5 K</i>	<i>935</i>	<i> </i>	<i> </i>	<i> </i>	<i>A delay to 1.5 sp 5111</i>
	<i>—</i>	<i>5149</i>	<i>1053</i>	<i> </i>	<i>—</i>	<i>17.1</i>	<i> </i>	<i> </i>	<i>A Pop Rate to 17.1 - speed 5.7 K</i>
	<i>1788</i>	<i>5206</i>	<i>1110</i>	<i> </i>	<i>875</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1789</i>	<i>5298</i>	<i>1137</i>	<i> </i>	<i>840</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1790</i>	<i>5390</i>	<i>1204</i>	<i> </i>	<i>815</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>—</i>	<i>5437</i>	<i>1217</i>	<i> </i>	<i>—</i>	<i>18.4</i>	<i> </i>	<i> </i>	<i>A Pop Rate to 18.4 - speed 5.3 K</i>
	<i>1791</i>	<i>5483</i>	<i>1231</i>	<i> </i>	<i>755</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1792</i>	<i>5576</i>	<i>1259</i>	<i> </i>	<i>720</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>—</i>	<i>5629</i>	<i>1316</i>	<i>0.5</i>	<i>—</i>	<i> </i>	<i> </i>	<i> </i>	<i>A Delay to 0.5 sec</i>
	<i>1793</i>	<i>5667</i>	<i>1328</i>	<i> </i>	<i>400</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>1794</i>	<i>5761</i>	<i>1357</i>	<i> </i>	<i>670</i>	<i> </i>	<i> </i>	<i> </i>	
	<i>"</i>	<i>—</i>	<i>1413</i>	<i> </i>	<i>—</i>	<i> </i>	<i> </i>	<i> </i>	<i>A/C # 256 → 200</i>
	<i>"</i>	<i>5858</i>	<i>1425</i>	<i> </i>					<i>End Line 94</i>
									<i>(due to major unexpected course change)</i>



Line: 95

## M C S

Offshore Kenya Tanzania.

BPI: 800

[illegible]

R/V ROBERT D. CONRAD *Verna*

Line: 96

offshore Kenya or Tanzania

Format: *seGB*

BPI: 700

[illegible]

R/V ROBERT D. CONRAD *Vema*

Cruise: V36-18

Line: 97

## RECORDING LOG

MCS

offshore Kenya.

DFS IV

Format: SEG-B

BPI: 800

(67)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
12/8/60	1817	001	0244	1000	700	27.9	4	12000	Course 180°
	"		0300						Ac 195 @ 0300 Spunkdown.
	"		0302						SB #409 @ 0302.
	<del>1818</del> 1818	93	0326		725				
	"	151	0353			$\frac{27.9}{21.2}$			pop rate increased to 21.2 (spd = 4.6K)
	1819	185	0405		730	21.2			
	1820	278	0438		775	1			
	1821	370	0511		700				
	1822	463	0544		700	21.2	4	12000	
	1823	555	0617		660	1			
	1824	648	0651		625				
	1825	740	0723		590				
	"	794	0742			$\frac{21.2}{27.9}$			pop rate to 27.9 (spd = 3.0K)
	1826	832	0800		565	27.9			
	1827	923	0842		530				Radio noise on record.
	"	937	0848	$\frac{1000}{500}$					TB delay to 500 ms
	"	1014	0924	.5K					off for oil check
	1828	1044	0938		500				
	1829	1136	1020		460				
	1830	1228	1102		445				$\Delta$ Pop rate to 30.0 ~ 1/2 way in to tape.

Line: 97

## RECORDING LOG

M C S

# Offshore Kenya

DFS IV

Format: SW SE6-B

BPI: ~~SE~~ 800

[illegible]

R/V ~~ROBERT D. CONRAD~~ Vema

Cruise: V3618

Line: 98

## RECORDING LOG

MCS

off shore Kenya

DFS IV (69)

Format: 5e6 B

BPI: 800

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth fms	Pop Rate sec.	Samp. Rate Hz	Rec. L. ms	Comments
12/8/80	1841	1	1905	0.5K	485	28.7	4	12K	Start Line 98
	"	81	1943	"	-	18.8	"	"	CHANGE POP RATE → 18.8
	1842	2	?	"	630	"	"	"	
	1843	185	2015	"	650	"	"	"	
	"	276	2044	"	650	"	"	"	Guns off for check up
	1844	378	2115	"	650	"	"	"	Guns on
	1845	470	2143	"	700	"	"	"	SB 413 @ 2204
	1846	562	2211	1.0K	780	"	"	"	Trip Delay → 1.0K
	1847	653	2239	"	810	"	"	"	
	1848	726	2308	"	825	"	"	"	
	1849	838	2336	"	910	"	"	"	
12/9/80	1850	931	0005	"	1000	"	"	"	
	1851	1023	0033	"	1160	"	"	"	Trip delay → 1.5K @ shot 1033
	1852	1115	0101	1500	1115	"			
	"	1141	0109	$\frac{1500}{2000}$		"			Trip delay to 2000 ms
	"	1198	0127	2000		$\frac{18.8}{17.1}$			pop rate to 17.1 (speed = 5.7K)
	1853	1206	0129	2000	1150	17.1			
	"	1246	0141		<del>1150</del>	$\frac{17.1}{17.8}$			pop rate to 17.8 (spd = 5.5K)
	1854	1298	0156		1205	17.8			
	1855	1389	0222		1200				

R/V ROBERT D. CONRAD *Verna*Cruise: *V 36-18*Line: *98*

## RECORDING LOG

MCS

*offshore Klonga*

DFS IV

Format:

BPI:

(70)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth Fm	Pop Rate sec	Samp. Rate ms	Rec. Ls	Comments
12/1/80	1855(CB)	1424	0233	2000		$\frac{17.8}{17.1}$	4	12000	pop rate to 17.1 (Spd = 15.9K)
	1856	1482	0249		1210	17.1			
	"	1533	0304	$\frac{2000}{2500}$					TB delay to 2500 ms
	1857	1575	0316	2500	1240				
	1858	1670	0344		1270				
	1859	1764	0412		1270				
	1860	1859	0439		1310				SB 414 @ <del>3000</del> 0504
	1861	1953	0507		1350				
	1862	2047	0534		1375				
	<del>1863</del> "	2073	0542	$\frac{2500}{3000}$					TB delay increased to 3000 ms.
	"	2079	0543			$\frac{17.1}{16.9}$			pop rate to 16.9 (Spd = 5.8K)
	1863	2141	0600	3000	1390	16.9			
	1864	2236	0627		1410	"			
	"	2255	0632			$\frac{16.9}{19.5}$			pop rate to 19.5 (Spd = 5.0K)
	1865	2330	0656		1435	19.5			
	1866	2425	0727		1460				
	1867	2519	0757		1480				
	"	2575	0815			$\frac{19.5}{20.3}$			pop rate to 20.3 (Spd = 4.8K)
	"								some radio noise on this tape.
	1868	2614	0829		1500	20.3			

R/V ROBERT D. CONRAD

Cruise: V36-18

Line: 98

## RECORDING LOG

MCS

offshore Kenya.

DFS IV

Format: SEG-B

BPI: 800

(71)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
12/9/80	1869	2709	0901	3 K	1505	20.3	4	12K	
	1870	2804	0933		1515				
	1871	2898	1005	3.5K	1525				change delay @ SP 2898 → 3.5K
	1872	2993	1038	3.5K	1540				
	1873	3087	1110	3.5K	1560				
	1873	3115	1119		—	18.8			Δ Pop Rate to 18.8
	1874	3182	1140		1570	18.8			SB 415 @ 1108Z
	1875	3276	1209		1580	18.8			
	1876	3370	1238		1605	18.8			SB 416 @ 1247Z
	—	3432	1257		—	23.2			Δ Pop Rate to 23.2, speed 4.2K
	1877	3464	1309		1610	23.2			
	"	3483	1317			20.8			CHANGE POP RATE 20.8
	1878	3558	1342		1620				
	1879	3651	1414		1630				
	1880	3744	1446		1690				
	1881	3836	1517		1695				
	"	3840	1518			19.5			CHANGE POP RATE → 19.5
	1882	3931	1548		1720				
	"	4018	1616			18.8			INCREASE POP RATE → 18.8
	1883	4026	1618		1730				

R/V ROBERT D. CONRAD

Cruise: V3618

Line: 98

## RECORDING LOG

MCS

DFS IV

Format: SEQ B

BPI: 800

## OFFSHORE KENYA

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. L.	Comments
12/9/80	1884	4119	1647	3K	1750	18.8	4	12K	
	1885	4214	1716	"	1780	"	"	"	
	1886	4308	1745	"	1780	"	"	"	
	1887	4402	1814	3500	1780	"	"	"	
	1888	4496	1844	"	1790	"	"	"	oil check <del>compressor off</del>
	"	4529	1853	"	"	"	"	"	<del>compressor on</del> / compressor on
	1889	4624	1922	"	1803	"	"	"	SB 417 @ 1854
	1890	4719	1952	"	1807	"	"	"	
	1891	4814	2021	"	1810	"	"	"	
	1892	4908	2050	"	1825	"	"	"	
	1893	5003	2119	"	1850	"	"	"	
	1894	5098	2148	"	1860	"	"	"	
	1895	5194	2218	"	1890	"	"	"	Pop Rate $\rightarrow$ 19.1 @ SP 5205
	1896	5289	2248	"	1900	"	"	"	
	1897	5383	2319	"	1925	"	"	"	
	1898	5477	2349	"	1925	18.9	"	"	Pop Rate $\rightarrow$ 19.9 @ SP 5532
12/10/80	1899	5572	0020	"	1950	19.9	"	"	
	1900	5666	0051	3500	1950	"	"	"	
	"	5713	0106	3500 4000		1	1	1	TB delay to 4000 ms.
	1901	5760	0121	4000	1955				

probably  
Should be  
3500

72



offshore Kenya.

Line: 98

BPI: 500

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. Lg ms	Comments
12/10/80	1902	5853	0151	4000	1960	19.9	4	12000	SB # 418 @ 0152
	1903	5947	0222		1975				
	"	6024	0247			19.8 19.5			pop rate to 19.5 (spd = 5.0K)
	1904	6040	0252		1980	19.5			
	"	6061	0259	4000 4500					TB delay to 4500
	1905	6133	0322	4500	1980				
	1906	6226	0352		1990				
	1907	6319	0422		2005				
	"	6338	0429			19.5 17.8			pop rate to 17.8 (spd = 5.5K)
	"	6347	0431			17.8 18.0			pop rate to 18.0 (shoots into end of last shot)
	1908	6412	0451		2015	18.0			
	1909	6505	0520		2020				
	1910	6598	0549		2025				
	1911	6692	0617		2025				
	"	6719	0626		2030	18.0 19.9			pop rate to 19.9 (spd = 4.9K)
	1912	6785	0647		2030	19.9			
	1913	6878	0717		2050				
	1914	6971	0748		2060				
	1915	7065	0818		2070				SB 419 @ 0819Z
	"								SB 420 @ 0836Z

R/V ~~ROBERT D. CONRAD~~ *Verna*

Cruise: V36-18

Line: 98

RECORDING LOG  
MCS

offshore Kenya

DFS IV

Format: *SEG-B*

BPI: 800

[illegible]

R/V ROBERT D. CONRAD VEMIT

Cruise: V3618

Line: 99

## RECORDING LOG

MCS

OFFSHORE KENYA

DFS IV

Format: SE6 B

BPI: 800

(75)

Date	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth fms	Pop Rate sec	Samp. Rate ms	Rec. L. mi	Comments
12/10/80	1930	1	1733	4.5K	2100	20.8	4	1000	TPX-2 deslaved at beginning of line 99
	1931	94	1804	"	2100	"	"	"	
	1932	188	1836	"	2100	"	"	"	
	1933	284	1909	"	2100	"	"	"	
	1934	379	1941	"	2100	"	"	"	
	1935	474	2014	"	2100	"	"	"	
	1936	570	2047	"	2130	"	"	"	Sonic Buoy #421 @ 2058
	1937	665	2119	"	2130	20.8 16.9	"	"	Pop Rate → 16.9 @ SV 729
	1938	762	2150	"	2180	16.9	"	"	
	1939	857	2216	"	2150	"	"	"	
	1940	953	2242	"	2125	"	"	"	
	1941	1047	2308	"	2100	"	"	"	
	1942	1141	2334	"	2060	"	"	"	
	1943	1233	2359	"	2050	"	"	"	
12/11/80	1944	1327	0025	"	2015	"	"	"	
	1945	1421	0051	"	2015	"	"	"	
	"	1496	0111			16.9 17.5			pop rate to 17.5 (was shooting into end of last record.)
	"	1505	0114			12.5 17.5 18.0			pop rate to 18.0 (still shooting into next record. But <sup>now</sup> pop rate is wrong for speed (6.0 k over ground))

Line: 99

offshore Kenya.

BPI: 800

(76)

[illegible]

R/V ROBERT D. CONRAD *Verna*

Cruise: V3618

Line: 100

## RECORDING LOG

MCS

*offshore Kenya*

DFS IV

Format: SEG B

BPI: 800

⑦ 77

Date Gmt	Tape #	Shot Point #	Time Gmt	Trip Delay ms	Depth Gm	Pop Rate Sec	Samp. Rate ms	Rec. L. ms	Comments
12/11/80	1954	01	0456	4000	1940	17.0	4	12000	Beginning of Line 100
	1955	94	0524		1935				
	1956	187	0551		1925				
	1957	280	0618		1920				
	1958	374	0645		1915				SB #422 @ 0659
	1959	467	0712		1910				
	1960	560	0739		1905				
	1961	652	0806		1895				
	1962	746	0834		1880				
	1963	841	0901		1875				
	1964	935	0929		1870				Speed over ground 5.8K
	1965	1031	0957		1870				1 Shot missed
	1966	1125	1024		1870				SB 433 @ 1034
	1967	1219	1052		1840				
	1968	1312	1119		1820				
	1969	1406	1146		1820				
	1970	1501	1214		1785				
	1971	1595	1241		1780				
	1972	1689	1309		1780				
	1973	1782	1336		1780				

R/V ROBERT D. CONRAD VEMA

Cruise: V3618

Line: 100

## RECORDING LOG

MCS

DFS IV

(18)

Format: SEQ B

BPI: 800

## OFFSHORE KENYA

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay MS	Depth FMS	Pop Rate Sec	Samp. Rate MS	Rec. L. MS	Comments
12-11-80	1974	1875	1403	4000	1730	17.00	4	12000	
	1975	1969	1430	"	1730	"	"	"	
	1975	2063	✓	"	"	"	"	"	LAST SHOT TAPE 1975 GUPS OFF FOR <sup>OR</sup> CHECK
	1976	2102	1509	"	1770	"	"	"	1519Z SB#424
	1977	2196	1536	4000	1670	"	"	"	
	"	2231	1546	3500	"	"	"	"	CHANGE DELAY → 3.5 SEC
	1978	2291	1604	"	1690	"	"	"	
	1979	2393	1634	"	1685	"	"	"	Missed 3 to 5 Shots
	1980	2484	1702	"	1600	"	"	"	
	1981	2583	1729	"	1600	"	"	"	
	1982	2678	1757	"	1590	"	"	"	
	1983	2773	1824	"	1550	"	"	"	
	1984	2868	1852	"	1550	"	"	"	
	1985	2963	1920	"	1510	"	"	"	
	1986	3058	1947	"	1500	"	"	"	Delay → 4.0 → @ <sup>SP</sup> 3064
	1987	3152	2015	3.0	1490	"	"	"	Delay → 3.0 @ <sup>SP</sup> 3133
	1988	3246	2042	"	1490	"	"	"	
	1989	3339	2109	"	1550	"	"	"	
	1990	3434	2137	"	1590	"	"	"	
	1991	3528	2204	"	1650	"	"	"	5040 Buoy # 425 @ 2203

R/V ~~ROBERT D. CONRAD~~ Vema

Cruise: V3618

Line: 100

RECORDING LOG  
MCS

offshore Kenya

DFS IV (79)

Format: 56-B

BPI: 800

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay	Depth fms	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
12/11/80	1992	3623	2232	3.0K	1630	17.0	4	12K	
	1993	3717	2259	"	1630	"	"	"	
	1994	3811	2327	"	1720	"	"	"	
	1995	3905	2354	"	1800	"	"	"	Delay → 3.5 @ SP 3909
12/12/80	1996	3999	0021	3.0K	1790	"	"	"	
	1997	4091	0048	"	1760	"	"	"	
	1998	4184	0115		1665				
	1999	4277	0142		1630				
	2000	4371	0210		1625				
	2001	4464	0237		1600				
	"	4509	0250			17.0 18.8			pop rate to 18.8 (SP = 5.2K)
	2002	4558	0305		1570	18.8			
	2003	4651	0334		1510				
	"	4673	0340	3500 3000					TB delay to 3000 ms.
	2004	4744	0402	3000	1435				
	2005	4838	0431		1400				
	2006	4932	0500		1380				SB #426 - @ 0510
	2007	5025	0529						Tape 2007 rewound by itself after a few shots. Transferred to TPK-2
		5033	0532						
	2008	5036	0532		1525				

R/V ROBERT D. CONRAD *Vema*

Cruise: V36-18

Line: 100

## RECORDING LOG

MCS

offshore Kenya.

DFS IV

Format: SEG-B

BPI: 800

(80)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. L. ms	Comments
12/12/80	2009	5129	0601	3000	1290	18.8	4	12000	Tape ID on header not set to 2009
	2010	5222	0629		1335				
	2011	5316	0658		1320				
	"	5338	0705	$\frac{3000}{2000}$	<del>1320</del>				TB delay to 2000 ms.
	2012	5408	0727	2000	1285				
	"	5426	0732	$\frac{2000}{2500}$					TB delay to 2500 ms Note:
	"								at the TB delay change approx
	"								11 shots were missed. Don't know why.
	2013	5501	0755		1305				
	2014	5595	0824		1390				
	2015	5701	0857		1360				Something went wrong - TPX1 was shut
	2016	5796	0926		1340				came up. Missed $\approx$ 10-15 shots.
	2017	5890	0955		1330				Incremented SP 9 shots @ SP 5727
	2018	5986	1024		1230				SB 427 @ 0908
	2019	6081	1054	2.0K	1100	change delay to 2.0s.			Tape ID not correct on 2015 - reads
	2020	6125	1123	1.2% <sub>1.0</sub>	960				2014
	"	6227	1138	1.0	—				A Delay to 1.0 sec.
	2021	6268	1151		825				
	2022	6361	1220		650				
	—	6394	1230		—				LAST SHOT LINE 100



Line: 101

# RECORDING LOG

M C S

Offshore Kenya

(81)

DFS IV

Format: SEG B

BPI: 800

[illegible]

R/V ROBERT D. CONRAD *VEMIA*Cruise: *V3618*Line: *102*

## RECORDING LOG

MCS

*Offshore Kenya*

DFS IV

Format: *SECB*BPI: *800**82*

Date	Tape #	Shot Point #	Time GMT	Trip Delay sec	Depth m	Pop Rate sec	Samp. Rate m	Rec. L. m	Comments
<i>12/12/80</i>	<i>2032</i>	<i>1</i>	<del><i>1754</i></del>	<i>.5K</i>	<del><i>120</i></del>	<i>120</i>	<i>4</i>	<i>1200</i>	<i>Time 1727</i>
	<i>2033</i>	<i>92</i>	<i>1754</i>	<i>11</i>	<i>700</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2034</i>	<i>185</i>	<i>1821</i>	<i>11</i>	<i>790</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2035</i>	<i>278</i>	<i>1848</i>	<i>11</i>	<i>825</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>Delay → 1.0 @ 288</i>
	<i>2036</i>	<i>370</i>	<i>1915</i>	<i>1.0K</i>	<i>890</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2037</i>	<i>462</i>	<i>1942</i>	<i>11</i>	<i>900</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2038</i>	<i>555</i>	<i>2009</i>	<i>11</i>	<i>1000</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>SB 428 @ 2012</i>
	<i>2039</i>	<i>649</i>	<i>2036</i>	<i>11</i>	<i>920</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2040</i>	<i>740</i>	<i>2103</i>	<i>11</i>	<i>980</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2041</i>	<i>832</i>	<i>2130</i>	<i>11</i>	<i>900</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2042</i>	<i>925</i>	<i>2157</i>	<i>11</i>	<i>910</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2043</i>	<i>1017</i>	<i>2223</i>	<i>11</i>	<i>980</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2044</i>	<i>1110</i>	<i>2251</i>	<i>11</i>	<i>1010</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>Delay → 1.5 @ 5P 1113</i>
	<i>2045</i>	<i>1202</i>	<i>2317</i>	<i>1.5K</i>	<i>1025</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2046</i>	<i>1295</i>	<i>2345</i>	<i>11</i>	<i>1035</i>	<i>11</i>	<i>11</i>	<i>11</i>	
<i>12/13/80</i>	<i>2047</i>	<i>1387</i>	<i>0011</i>	<i>11</i>	<i>1100</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2048</i>	<i>1480</i>	<i>0038</i>	<i>11</i>	<i>1110</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>2049</i>	<i>1572</i>	<i>0105</i>	<i>11</i>	<i>1195</i>	<i>11</i>	<i>11</i>	<i>11</i>	
	<i>11</i>	<i>1593</i>	<i>0111</i>	<i>1500</i> <i>2500</i>		<i>11</i>	<i>11</i>	<i>11</i>	<i>TB delay to 2500 ~</i>
	<i>2050</i>	<i>1666</i>	<i>0133</i>	<i>2500</i>	<i>1205</i>	<i>11</i>	<i>11</i>	<i>11</i>	

R/V ROBERT D. CONRAD *Vema*

Cruise: V36-18

Line: 102

## RECORDING LOG

MCS

offshore Kenya

(83)

DFS IV

Format: SEG-B

BPI: 800

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate sec	Samp. Rate ms	Rec. L ms	Comments
12/13/80	—	<del>1745</del>	<del>1745</del>	—	—	—	4	12000	
	2050 (4)	1745	0156	2500		$\frac{17.0}{18.8}$			pop rate to 18.8 (spd = 5.2K)
	2051	1759	0200		1165	18.8			
	2052	1853	0229		1225				
	2053	1947	0258		1265				
	2054	2041	0327		1310				
	"	2126	0353	$\frac{2500}{3000}$					TB delay to 3000 ms.
	2055	2134	0355		1350				
	2056	2228	0424		1375				
	2057	2322	0453		1415				
	2058	2416	0522		1430				
	2059	2509	0551		1435				
	2060	2603	0620		1450				
	2061	2696	0648		1475				
	2062	2790	0717		1485				
	2063	2883	0746		1490				
	2064	2976	0814		1490				
	"	2992	0819		1	$\frac{18.8}{22.2}$			pop rate to 22.2 (spd = 4.4K)
	2065	3070	0848		<del>1510</del> 22.2	22.2			
	—	3156	0920		<del>1510</del>	21.7			pop rate to 21.7 (spd = 4.5K)

R/V ROBERT D. CONRAD *Verna*  
 Cruise: ~~V36~~ V36-18  
 Line: 102

# RECORDING LOG

MCS

*offshore Kenya.*

DFS IV

Format: SE6-B

BPI: 800

(84)

Date GMT	Tape #	Shot Point #	Time GMT	Trip Delay ms	Depth FM	Pop Rate SEC	Samp. Rate ms	Rec. L ms	Comments
2/13/80	<del>2066</del>	<del>3156</del>	<del>0920</del>	<del>3.0K</del>	<del>1515</del>	<del>21.7</del>	<del>4</del>	<del>12,000</del>	
	2066	3164	0923	3.0K	1515	21.7	4	12,000	
	2067	3259	0958		1520	21.2			Δ Pop Rate (SPd 4.6)
	2068	3354	1031		1520				
	2069	3448	1105		1530				
	2070	3543	1139		1540				
	2071	3637	1213		1560				
	2072	3732	1247		1575				(SPd 4.6)
	—	3746	1310		—	25.0			Ship slow ~ 5 minutes ago to 3.0K
	—	3806	1313		—	21.2			Ship slow gone to 25.0
	2073	3826	1321		1585	1			A/S to 14.6" chgs back to 3.0K
	2074	3920	1355	"	1600	"			
	<del>2075</del>	4016	1429	"	1610	"			
	"	4109	1502	"	"	"			"EARL" CHECK GUNS OFF
	2076	4152	1517	"	1605	"			
	2077	4247	1551	"	1610				
	2078	4342	1625		1630				
	2079	4435	1658		1600 30				
	2080	4531	1733	"	1610 35	"			
	2081	4626	1807	"	1680	"			

Line: 102

R E C O R D I N G      L O G  
M C S

BPI: 1572

[illegible]

BPI: 800

[illegible]