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R 290  
no. 75-629

U.S. Geological Survey

Open-File Report 75-629

1975

ACOUSTIC-REFLECTION PROFILES

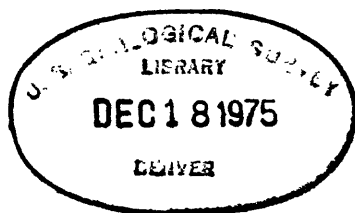
R/V POLARIS, NOV.-DEC., 1970

OFFSHORE SOUTHERN CALIFORNIA

PORT HUENEME TO POINT LA JOLLA

Chief Scientist: G. W. Moore

This report is preliminary and has  
has not been edited or reviewed for  
conformity with Geological Survey  
standards or nomenclature.



NOTE - Abbreviations used in this log include:

HR System - A high-resolution seismic-profiling system operating at 1,000 joules with two porcupine high-resolution cages, each having 50 electrodes.

DP System - A deep-penetration seismic-profiling system operating at 33,000 joules.

Unless otherwise noted, filter settings for each profiling system remained at the following levels:

for high-resolution - 725/170 hz

for deep-penetration - 125/31 hz

Where settings varied, the new figure is listed in the remarks column at the start of each new track line.

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
				November 20, 1970
	0755			leave dock at Port Hueneme
	0810			streaming gear and timing
1	0840		170° 5.5 Kt	
	0843	1-4		(HR) 420/100 hz
	0851	1-10		
	0855			(HR) 125/20 hz
	0907	1-20		
	0923	1-30		
	0939	1-40		
	0956	1-50		
	1011			Spark to main recorder off - trying to remove 60 hz noise.
	1012			power off about 30 seconds
2	1115			(HR) 725/280 hz
	1122	2-96		
	1133	2-90		
	1224	2-60		
	1242	2-50		
	1246			HR off $\approx$ one minute
	1316	2-30		
	1359		098°	
	1403	2-1		

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
3	1454		080°	HR on with one cage
	1500		135°	
	1502	3-1		
	1516	3-10		
	1637	3-60		
	1712	3-80		
	1803	3-109		
4	1804		050°	
	1833	4-40		
	1905	4-20		
	1934	4-2		
	1948			Underway into Marina Del Rey
	2000			at dock
				D.P. system plagued by 60hz noise. Problem not isolated by end of day
				November 21, 1970
	0758			Underway from Marina Del Rey
	0807			D.P. system not in use
5	0838		150° 6kt	250rpm
	0840	5-1		
	0854	5-10		
6	0857		205°	
	0908	6-10		

Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
6	0951	6-40		
	1024		5KT	230 rpm
	1036	6-70		new electrode on HR
	1111	6-90		
	1158			replace one electrode - power now 1000 joules
7	1225			(HR) 725/250 hz
	1228	7-90		
	1318	7-60		
	1410	7-30		
	1444	7-10		
8	1500		190°	
	1530			sea choppy
	1552	8-30		
	1628	8-50		
	1702	8-69		
	1704			
9	1713			(HR) 725/170 hz
	1722	9-70		
	1740	9-60		
	1814	9-30		
	1904	9-10		
	1919			harbor entrance

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
	1918	9-1		
end 9	1920			
	2000			docked at San Pedro
				November 22, 1970
	0640			leave dock at San Pedro
	0705			testing equipment
10	0739	10-3		(DP) 76/16 hz (HE) 725/170 hz
	0750	10-10		
	0836	10-40		
	0922 <del>0922</del>	10-70		
11	0929			
	0937	11-90		
	1029	11-60		
	1118	11-30		
	1150	11-10		
12	1200			(DP) 47/16
	1214	12-10		
	1240		/SKT	210 rpm
	1247	12-30		
	1324	12-50		
	1345			sea coming up
	1410			pulled in one electrode on HR

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
	1425			DP off to change stylus
	1428			DP on again.
	1432			both electrodes firing on HR system
13	1439			(DP) 47/16 hz
	1542	13-50		
	1555		5.5KT 230rpm	
	1617	13-30		
	1651	13-10		
end 13	1701			
	1735			docked at Newport Beach
				November 23, 1970
	0430			leave dock at Newport Beach
	0506			power on
14	0512			(DP) 47/16 hz
	0515	14-1		
	0530	14-10		
15	0537			(DP) 47/16 hz
	0540	15-3		
	0551	15-10		
	0607	15-20		
	0623	15-30		
	0639	15-40		

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
15	0655	15-50		
	0700			switching electrodes on HR system
	0706			timing
16	0716			(CDP) 76/16hz
	0724	16-85		
	0732	16-80		
	0748	16-70		
	0804	16-60		
	0820	16-50		
	0840	16-37		
	0857			reduce speed 235 to 225 rpm
	0909	16-19		
	0923	16-10		
	0938	16-1		
17	0939			(CDP) 160/63hz
	0946	17-1		
	1004	17-10		
	1024	17-20		
	1025			navigation radio transmission
	1038			trouble discovered and corrected in DP system
	1049	17-35		
	1057	17-40		



## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
	1118			HR recorder off
18	1132			(DP) 160/63 hz
	1138	18-128		
	1151	18-120		
	1209	18-109		
	1223	18-100		
	1240	18-89		
	1255	18-80		
	1311	18-70		
	1327	18-60		
	1342	18-50		
	1358	18-40		
	1406			About 2min time loss on DP recorder.
	1414	18-30		
	1430	18-20		
	1446	18-10		
	1459	18-1		
end 18	1500			
	1540			docked at Oceanside
				November 24, 1970
	0420			leave dock at Oceanside
	0444			power on

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
19	0502			(DP) 160/63 hz (HR) 725/130 hz
	0503	19-5		
	0510	19-10		
	0528	19-21		
	0544	19-30		
	0604	19-40		
	0618	19-47		
20A	0619			(DP) 160/63 hz (HR) 725/130 hz
	0620	20A-1		
	0640	20A-11		
	0658	20A-20		
	0718	20A-30		
	0748	20A-40		
	0752	20A-47		
20B	0756			
	0758	20B-1		
	0816	20B-10		
	0836	20B-20		
20C	0849			(DP) 160/31 hz (HR) 725/130 hz
	0851	20C-1		
	0909	20C-10		
	0929	20C-20		

Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
	0945	20C-28		
21	0947			(DP) 160/31 hz (HR) 725/130 hz
	0948	21-1		
	1006	21-10		
	1026	21-20		
	1048	21-31		
	1055	21-35		
22	1117			(DP) 160/31 hz (HR) 725/130 hz
	1118	22-134		
	1127			one cage off on HR system
	1126	22-130		
	1128			both cages on again on HR system
	1142	22-120		
	1158	22-110		
	1215	22-100		
	1231	22-90		
	1245			one electrode on HR system
	1247	22-80		
	1302			one new electrode on HR (working on other)
	1304	22-70		
	1318			HR system off
	1326			HR system on (one electrode)

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
22	1342			both electrodes on HR system
	1337	22-50		
	1339	22-49		
	1353	22-40		
	1410	22-30		
	1432	22-17		
	1444	22-10		
	1452	22-02		
end 22	1458			
	1535			docked at Oceanside
				November 30, 1970
	0815			leave dock at Oceanside
23	0854		2500 / 55KT 235 rpm	(DP) 160/25 hz (HR) 725/130 hz
	0855	23-10		
	0924	23-20		
	0940	23-30		
	0944			trying second hydrophone streamer on DP system
	0956	23-40		
	1000			one electrode on HR has been off
	1009			both electrodes on
	1012	23-50		rain squalls
	1016		/S.KT 220 rpm	

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
23	1030	23-60		
	1048	23-70		
	1055	23-74		power off on HR system
23A	1057		090°	(DP) 160/25 hz (HR) 725/130 hz
	1059	23A-1		power on - HR system
	1112			DP power off one minute NO time loss
	1117	23A-10		
	1123			one electrode on HR down to remove kelp - on again
	1124			other electrode off;
	1125			both electrodes on
	1137	23A-20		
	1148			one electrode on HR off for one minute
	1157	23A-30		
	1217	23A-40		
	1237	23A-50		
	1246			one electrode on HR down to remove kelp - on again
	1257	23A-60		
	1309	23A-66		
end 23A	1310			changing Electrode on DP system
23B	1341			(HR) 725/130 hz
	1342	23B-1		
	1401	23B-10		

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
23B	1421	23B-20		
	1441	23B-30		
	1446			one electrode on HR system
	1501	23B-40		
	1515	23B-47		
23C	1517			(DP) 160/31 hz (HR) 725/130 hz
	1523	23C-5		
	1533	23C-10		
	1553	23C-20		
	1613	23C-30		
	1633	23C-40		
	1646	23C-46		
23D	1647			(DP) 160/31 hz (HR) 725/130 hz
	1648	23D-1		
	1706	23D-10		
	1726	23D-20		
	1746	23D-30		
	1806	23D-40		
	1822	23D-48		
23E	1824			(DP) 160/31 hz (HR) 725/130 hz
	1826	23E-1		
	1844	23E-10		

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
23E	1904	23E-20		
	1924	23E-30		
	1944	23E-40		
	2004	23E-50		
	2024	23E-60		
nd 23E	2025			
	2050			docked at Oceanside
				December 1, 1970
	0605			leave Oceanside
23F	0654	23F-1	5.5KT	230 rpm
	0712	23F-10		
	0732	23F-20		
	0752	23F-30		
	0755			cleaning one HR electrode
	0812	23F-40		
nd 23F	0816			
24	0819			
	0820	24-54		
	0826	24-50		
	0838			two electrodes on HR system
	0840			one electrode off
	0842	24-40		

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
24	0854			both electrodes on HR system
	0858	24-30		
	0913	24-20		
	0929	24-10		
	0939	24-4		
25	0940	25-1	1/5 KT 210 rpm	
	0953	25-10		
	1000	25-20		
	1029	25-31		
	1044	25-40		
	1100	25-50		
	1118	25-60		
	1135	25-70		
	1149			cleaning HR system
end 25	1153			
25A	1204	25A-1		
	1222	25A-10		
	1242	25A-20		
	1302	25A-30		
	1322	25A-40		
	1342	25A-50		
25B	1355			



## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
25B	1358	25B-1		
	1416	25B-10		
	1437	25B-20		
	1456	25B-30		
	1516	25B-40		
	1533	25B-48		
end 25B	1534			
26	1546	26-80		
	1604	26-70		
	1623	26-60		
	1640	26-50		
	1658	26-40		
	1716	26-30		
	1733	26-20		
	1751	26-10		
	1803	26-3		
end 26	1804			
	1840			docked at Newport Beach
				December 2, 1970
	0605			leave Newport Beach
27	0619			firing HR system in harbor.
	0626			slaw DP system

Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
27	0627		165°	225 rpm
	0630			north jetty right abeam
27	0631		206°	turning onto line
	0638	27-3		
	0647	27-10		
	0701	27-20		
	0718	27-30		
	0735	27-40		
	0751	27-50		
	0800			215 rpm reduce speed
	0809	27-60		
	0827	27-70		
	0845	27-80		
	0904			one HR electrode off for changing
	0916			both HR electrodes on
	0918			one HR electrode off
	0929			both HR electrodes on
	0902	27-90		
	0920	27-100		
	0937	27-110		
	0940			HR off, changing recorder
28				

Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
27	0943			
28	0947			
	0954	28-129		
	0958			HR system on
	1008	28-120		
	1030	28-107		
	1042	28-100		
	1100	28-90		
	1117	28-80		
	1120			cleaning kelp off one HR electrode
	1134	28-70		
	1150	28-60		
	1206	28-50		
	1223	28-40		
	1240	28-30		
	1258	28-20		
	1316	28-10		
29	1322	28-6		
29	1326	29-1		
	1342	29-10		
	1403	29-20		
	1427	29-30		

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
29	1451	29-40		
	1517	29-50		
	1541	29-60		
30	1546		340°	heavy roll; 30 kt gusts
	1548	30-45		
	1559	30-40		
	1621	30-30		
	1642	30-20		
	1704	30-10		
	1722	30-1		
	1723			entering harbor
	1724		330°	
end 30	1734			
	1820			docked at San Pedro
				December 3, 1970
	0745			leave San Pedro
	0811			power on; testing DP recorder
31	0907			one HR electrode on
	0908	31-1		both HR electrodes on
	0925	31-11		
	0940	31-20		
	0950			trouble discovered and corrected in DP system

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
31	0957	31-30		
	1014	31-20		
	1030	31-50		
	1047	31-60		
	1104	31-70		
	1120			changing one HR electrode
	1121	31-80		
	1137			both electrodes firing
	1138	31-90		
	1156	31-100		
	1158			DP off to change electrode
nd 31	1205			
32	1209	32-72		
	1214	32-70		
	1231	32-60		
	1247	32-50		
	1304	32-40		
	1320	32-30		
	1324			215 rpm reduce speed
	1337	32-20		
	1354	32-10		
	1411			HR system off

Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
	1416	32-X3		
end 32	1418			
33	1428		280°	
	1429	33-2		
	1445	33-10		
	1508	33-20		
	1528	33-30		
	1549	33-40		
	1556			one HR electrode off
	1607			both electrodes on
	1610	33-50		
	1632	33-60		
	1645	33-66		
34	1647			
	1648	34-85		
	1656	34-80		
	1712	34-70		215 rpm reduce speed
	1729	34-60		
	1747	34-50		
	1806	34-40		
	1826	34-29		
	1842	34-20		

Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
34	1900	34-10		
	1913	34-1		
end 34	1915			
	1945			docked at Marina Del Rey
				December 4, 1970
	0705			fueling
	0802			leave Marina Del Rey
	0819			power on
38	0842	38-1		
	0858	38-10		
	0902			automatic pilot power failure ran off course - returning smoothly
	0916	38-20		
	0932	38-30		
	0949	38-40		
	1005	38-50		
	1013			Swing around smoothly to southwest
	1022	38-60		
38A	1037	38A-1	0020/	
	1055	38A-10		
	1115	38A-20		
38B	1120			Line 38B re-run of 38 across Redondo Canyon
	1122	38B-37B		

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
38B	1128	38B-40B		
	1141			one HR electrode in to clean kelp
	1143			both HR electrodes on
	1145	38B-50B		
	1154	38B-55B		
end 38B	1155			
37	1204			
	1206	37-1		
	1221	37-10		
	1241	37-20		
	1250			one HR electrode out for changing
	1301	37-30		
	1321	37-40		
	1341	37-50		
	1401	37-60		
	1420	37-70		
	1439	37-80		
	1457	37-90		
	1516	37-100		
	1535	37-110		
	1547			HR system shut down
end 37	1551			



## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
36	1555		025° 5.5KT	
	1600	36-132		
	1622	36-120		
	1639	36-110		
	1656	36-100		
	1714	36-90		
	1731	36-80		
	1749	36-70		
	1806	36-60		
	1820			one HR electrode off 2min. to clear kelp
	1823	36-50		
	1839	36-40		
	1855	36-30		
	1912	36-20		
	1929	36-10		
35	1938			
	1942	35-56		
	1950	35-50		
	2005	35-40		
	2020	35-30		
	2034	35-20		
	2050	35-10		

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
2nd 35	2105	35-1		
	2130			docked at Marina Del Rey
				December 5, 1970
	0550			leave Marina Del Rey
	0607			HR system firing
	0611			DP system firing - trouble in system (DP) 170/31 hz
	0621			radar fix; 33°59.6'N, 118°29.4'W
end 39	0624			34°00.0'N, 118°29.6'W
40	0635			(DP) 125/31 hz
	0636	40-4		
	0645	40-10		useable DP records begin ~ 0647
	0701	40-20		
	0718	40-30		
	0735	40-40		
	0752	40-50		
	0809	40-60		
	0825			one HR electrode off to change
	0826	40-70		
	0836			both HR electrodes on
	0838			other HR electrode off
	0842	40-80		
	0847			both HR electrodes on

## Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
40	0849	40-84		
	0855			HR system off to service
nd 40	0857			
41	0918			
	0919	41-61		
	0935	41-50		
	0950	41-40		
	1005	41-30		
	1021	41-20		
	1037	41-10		
	1048	41-2		
42	1050			
	1051	42-2		
	1104	42-10		
	1122	42-20		
	1140	42-30		
	1157	42-40		
	1215	42-50		
	1234	42-61		
	~1251	42-70		
	1254			HR system off to clean
	~1308	42-80		

Scientific Log for R/V POLARIS Nov.-Dec. 1970

LINE NO.	TIME	SHOT POINT	COURSE SPEED	REMARKS
42	1310	42-82		
43	1312			
	1319	43-1		
	1331	43-10		
	1351	43-20		
	1411	43-30		
	1431	43-40		
	1451	43-50		
	1501			HR programmer failure changing to new recorder
	1515			HR system firing
	1511	43-60		
	1517	43-63		
end 43	1522	43-66		
44	1543			
	1545	44-1		
	1603	44-10		
end 44	1614			Power failure - generator blew gasket
	1707		/ 10KT	Increase speed - head for port
	1830			docked at Port Hueneme
				End of Cruise

A-  
SAMPLE DEEP-PENETRATION SPARKER PROFILE  
MADE BY COPY-FLO PROCESS FROM MICROFILM.

SAMPLE OF HIGH-RESOLUTION PROFILE MADE  
BY COPY-FO PROCESS FROM MICROFILM.