



COASTAL AND MARINE SCIENCE AT THE WOODS HOLE FIELD CENTER (WHFC)

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97006 S12

SEISMIC/GEOPHYSICS LOG

SHIP AND CRUISE: GYRE 97006 Leg 1  
APR 14-14, 1997

AREA: Gulf of Mexico

DATES: April 5-25, 1997

CHIEF SCIENTIST: Dave Twichell

# GYRE 97006 GEOPHYSICS LOGBOOK

## 4-14 APRIL, 1997

**Chief Scientist - Dave Twichell**  
**Area - Gulf of Mexico**

System identifiers:

- 0 = Nothing
- 1 = Navigation
- 2 = SIS-7000 sidescan sonar
- 3 = 2-channel seismic system with large GI gun
- 4 = 3.5-kHz subbottom profiling system
- 5 = EDO acoustic ranging system for sidescan

SYST.	JD	GMT	LINE	TAPE	NAV.	DISK	FILE	COMMENTS
0	94	1930						Depart Galveston - SIS-7000 checked out in the water, MudSeis all put back together, and everything seems in order.
0	95	1650						About 10 nm from deployment point. Umbilical attached to Bob. A lot of fuel oil and hydraulic oil on deck - one of the hatch covers on the fantail was not tightened down, so it is greasy on deck.
2	95	1802						Bob in water and going down. In about 1000m water. Bob seeing the bottom - about 800 m off.
1	95	1808	1				1	Start nav disk 1. Coming around to start line # 1.
2	95	1809	1a				Dive1.dt	Start saving Bob data.
4	95	1816	1a					3.5-kHz on and recorded on the EPC.
0	95	1836	1					Increase speed from 2 to 3 kt to regain steerage.
0	95	1920	1					Slow ship speed from 3.5 to 3 kt- fish rolling a lot at 3.5 kt.
5	95	1958	1					EDO batfish put in water for getting range to Bob. Seems to work when not paying wire out, but when wire is going out, nose is down, and get no return. Going 3 kt, but Bob still has a 23 deg roll. Wind is out of the NE at about 10-15 kt, so ship is crabbing a bit which may be part of the problem.

2	95	1945	1	1	l1f1.dat	Start Line 1 - start file l1f1.dat
1	95	1954		1		Nav out
1	95	1955	1			Nav back on line
2	95	2000	1			Stop paying wire out, 1040 m wire out.
2	95	2019	1			Paying wire out- start at 1040 m wire out.
2	95	2025	1			Stop paying wire out at 1155 m wire out.
Airgun is going into the water.						
2	95	2057			l1f1.dat	Pay wire out for Bob.
2	95	2100	1	1	l1f1.dat	1226 m wire out - stop paying wire out.
4	95	2059	1			Time is off by 10 minutes on 3.5 record.
Record says 2049 when time is actually 2059.						
2	95	2109	1		l1d2.dat	Start new file, and turn gain down a bit- getting very dark in the far range. Bob still rolled 18-20 deg to port.
2	95	2130	1	1	l1f2.dat	Start paying wire out.
2	95	2134	1	1		Stop paying wire out - 129 m wire out.
2	95	2240	1	1	l1f2.dat	Pay wire out
2	95	2245	1	1	l1f2.dat	Acoustic range seems to be working.
Acoustic range seems to be working. Acoustic range seems stable so Barry is sending slant range nav to ISIS, so now using fish nav rather than ship nav.						
2	95	2253	1	1	l1f2.dat	End of file
2	95	2253	1	1	l1f3.dat	Start L1F3.dat because of change from ship to fish navigation.
2	95	2254	1	1	l1f3.dat	Getting a lot of dropped lines in sidescan and subbottom. Not radio transmission. Seems to be the connection where the deck cable attaches to the slip ring.
2	95	2300	1	1	l1f3.dat	End file-checking slip-ring for bad connection. Switching to WIN 95 and will be writing to hard disk on Aleutian.
2	95	2300	1	Disk	l1f4.dat	Bob back on. Noise seems improved. Start writing sidescan and subbottom to hard disk on Aleutian.
2	95	2345	1	Disk	l1f4.dat	Bringing wire in - start at 1425 m.
2	95	2347	1	Disk	l1f4.dat	Stop bringing wire in at 1353 m. Lots of dropouts in the record while bringing wire in.
2	96	0044	1	Disk	l1f4.dat	start wire out
2	96	0049	1	Disk	l1f4.dr	stop wire at 1449
4	96	0052	1	Disk	l1f4.dat	3.5kHz off
2	96	0109	1	Disk		Bringing Bob aboard. No transmission on

starboard side. Weather is supposed to pick up through the night and into tomorrow, so we are bringing it aboard now while weather still is reasonable.

2 96 1530 1 After Bob was recovered last night because the starboard transducer was not transmitting, Tom, Barry, and Twig think they found a bad termination in one of the cables, so they reterminated it and it cured overnight. This morning we tried launching at about 1230Z in seas that were a little rougher than what we had done before. On the first deployment, the cable running across the top of the fish from the acoustic release to the ranging transducer got pulled out, so we had to bring Bob back aboard. The bow got well banged up and some of the flotation was lost. The second deployment went smoother, but once the umbilical was payed all the way out, Tom fired it up for a surface test, and a fuse blew immediately, but not immediately enough. The umbilical had come unplugged in all of the rolling around, so when Bob was fired up, the arcing at the end of the umbilical must have been quite spectacular. Bob was recovered again with more banging against the transom, so now he looks like a hockey player who has just eaten a puck. The cable presently is being reterminated, and hopefully will be ready in 6 hours or so.

3 96 1555 The weather is picking up, and the forecast shows winds picking up from their present 20 kt to 25+ kt later this afternoon and through the night. Twig is taking the time now to balast the streamer and test it so that when the weather does improve, we will be ready to launch it right away.

3 97 1326 Weather still isn't too great, but coming over onto a line to deploy the airgun and start running some seismic lines across the upslope part of the channel system. Bob will have to wait until the weather calms down a bit more.

3 97 1420 2 GI gun and streamer in the water. Coming around on to the first seismic line which will be Line 2.

1 97 1423 1 Start logging navigation.

3 97 1435 2 GI gun operating, so coming over onto Line 2.

3 97 1603 GI gun system still not working, so changing to NW to run with the sea and make it a bit calmer.

3 97 1925 Thwarted again. GI gun and streamer aboard, and nav is off. Seas have built through the day to 10-12 ft and gusts up to 40 kt. Needless to say the seismic data had room for improvement. There were problems with the system, but the data was so noisy it was virtually impossible to trouble shoot.

3 98 0055 Deploy GI gun and streamer for another try, seas have decreased 6-8 ft, winds decreased as well.

3 98 0105 GI gun and streamer in the water, and

tuning it up now.

5	99	0145				Julian day on nav computer was off by one
day - was reading 098 when should have been 099.						
3	99	0150				Seismic system still not working. Just
getting noise on the display.						
3	99	427				Hauled in the streamer part way to test the
first channel. Turns out that the weighted section was bad, so it was taken out, and now it looks like						
the seismic system is working.						
3	99	0447	2			Change speed to 4 kt and come over to get
back on line.						
3	99	0514	2	Disk	l2f1.sgy	Start logging seismic data.
1	99	0513	2			Start nav disk number 2.
4	99	0522	2			3.5 is on. It is a bit noisy, but is showing
some subbottom information.						
3	99	0709	2		l2f1.sgy	eol 2, end l2f1.sgy
3	99	0710	2		l2f2.sgy	turning to start line 3, continue logging data
to file l2f2.sgy						
3	99	0753	2		l2f3.sgy	Still in turn. MudSeis crashed...Brought the
program back up and started file F3.						
3	99	0802	3	Disk	l3f1.sgy	SOL 3
3	99	1232	3			End Line 3.
4	99	1320	3-4			Time on 3.5 recorder is off by 10 minutes -
reads 1320 when should be 1330.						
3	99	1324	4	Disk	L4F1.sgy	Start Line 4 of the seismic survey. Running
GI gun with 2-channel streamer, 3.5-kHz and nav. Will run on this line for about 2 hr then recover the						
gear and deploy the Bob fish.						
3	99	1549	4	Disk		End Line 4 - stop to haul seismic gear to
deploy Bob.						
2	99	1732	5	Disk		Bob in the water, both ducers are working.
Come around on to line, and now putting the streamer in for the GI gun. Bob set to scan 3 km to each						
side - total swath of 6 km.						
3	99	1806	5		l5f1.sgy	SOL 5
2	99	1832	5		not logging	BOB not working yet, no data logging.
2	99	1903	5	no	not logging	There were some telemetry problems
which seem to be solved now, but the power on the stbd side cannot be adjusted, and is set at the low						
level. Thus the signal, at best, is very weak.						
2	99	2204	5			1428 m wire out - still not working.
Seems to be transmitting, but is not receiving on either sidescan or chirp subbottom. Altimeter does						
seem to work though.						
3	100	0403	6		l6f1.sgy	SOL 6, GI gun seismics

3	100	0850	6	3	l6f1.sgy	EOL 6
3	100	0900			l6f2.sgy	transit south to start of line 7
3	100	0908	6	3	l6f3.sgy	change from 4 sec trace length to 5 seconds
- water bottom multiple near 4 seconds						
3	100	1033	7	3	l7f1.sgy	Start of Line 7
3	100	1510	7	3		eol 7
3	100	1512	8	3	l8f1.sgy	sol 8
3	100	1934	8	3	l8f1.sgy	EOL 8
3	100	2307	9		l9f1.sgy	Start of Line 9
3	100	2310	9		l9f1.sgy	Note the Julian day on Mudseis is off by
one. It displays JD 99 when it really is JD100.						
3	101	0135	9	3	l9f1.sgy	gun misfiring, problem with compressor
3	101	0208	9	3	l9f1.sgy	gun firing, fixed JD on Mudseis to 101
3	101	0448	9	3	l9f1.sgy	EOL 9
3	101	0450		3	l9f2.sgy	continue recording transit to line 10
3	101	0645	10	4	l10f1.sgy	Start of line 10
4	101	0645	10	4		Start of line 10.
3	101	0709	10	4	l10f2.sgy	Start file 2 on line 10. Increased recording
time to 6 seconds in order to ensure data is recorded down past the first multiple.						
1	101	0508		3		In transit to line 10. Started new nav disk
# 4. Also went to straight GPS -- Losing the differential beacon from Galveston (the signal to noise						
ratio is dropping to less than 10%).						
0	101	1034	10	4	l10f3.sgy0	End line 10. Transit to beginning of line 11.
Recording transit line data as l10f3.sgy.						
3	101	1302	11	4	l11f1.sgy	SOL 11
3	101	1947	11	4	l11f2.sgy	EOL 11. Starting turn to line 12.
1	101	1947	11	4		EOL 11.
3	101	2028	12	4	l12f1.sgy	Start of line 12
1	101	2028	12	4		Start of line 12.
0	101	2300	12		l12f1.dat	End file to increase record length from 6 to
8 sec						
0	101	2302	12		l12f2.sgy	Start recording file two with a 6 second
record.						
3	102	0440	12	4	l12f2.sgy	EOL 12
3	102	0442		4	l12f3.sgy	transit to line 13
3	102	0532	13	5	l13f1.sgy	Start of line 13
1	102	0532	13	5		Start of line 13.
0	102	0952	13	5		Differential GPS navigation is unstable.

Megapulse receiver having problems staying locked on to beacon

0 102 1020 13 3.5KHZ signal very weak  
0 102 1120 13 Streamer seismic data became quite noisy  
for the previous 10-15 shots. Seems to have become normal at this point. The bridge reports that there is a vessel about 8 mile away and has been in the area for some time. It too could be on a seismic mission and we are receiving some direct or refracted arrivals.

3 102 1332 14 4 l14f1.sgy EOL 13 - SOL 14 change in course  
3 102 1544 14 4 l14f1.sgy EOL 14  
3 102 1544 15 4 l15f1.sgy SOL 15 change course to west  
3 102 1652 End line to haul airgun and check chafing gear.

3 102 1725 15 4 l15f2.dat Gun back in the water and running again.

Continuing on line 15.

3 102 1839 15 5 l15f2.sgy End of line 15.  
1 102 1839 15 5 End of line 15  
3 102 1855 16 5 l16f1.sgy Start of line 16  
1 102 1855 16 Start of line 16  
4 102 2217 16 5 No echo returns from 3.5 system. Turning system off.

3 102 2247 16 airgun misfiring. Pressure in the bottles way down. Unplugged the trigger - probably a problem with the compressor

3 102 2301 16 plugged trigger back in. had to let compressor build some pressure.

5 102 2311 16 eol 16

5 102 2313 16 l16f2.sgy start transit line

3 103 0003 17 l17f1.sgy start line 17

3 103 0409 17 5 l17f1.sgy EOL 17

3 103 0421 18 6 l18f1.sgy SOL 18

3 103 0706 18 6 l18f1.sgy End of line 18

1 103 0706 18 6 End of line 18

3 103 0706 19 6 l19f1.sgy1 Start of line 19. Dog leg off line 18, hence it starts right away.

1 103 0706 19 6 Start of line 19. Dog leg off line 18, hence it starts right away

3 103 731 19 6 l19f2.sgy Started a new file. l19f1 is a loop which comes around to the start of the dog leg and can be disregarded (streamer was not straight out behind the boat).

3 103 0938 19 6 l19f2.sgy airgun misfiring. pressure down in the bottles. taking trigger off to allow compressor to build pressure back up. trigger pulled at pin 311 (according to mudseis)

3 103 0954 19 6 l19f3.sgy started firing again - gave it a new file  
name.  
5 103 1106 19 eol 19  
5 103 1107 20 l20f1.sgy Start line 20  
3 103 1230 20 l20f1.sgy compressor problems again - low pressure  
gun misfiring. unplugged the trigger.  
3 103 1255 20 l20f2.sgy back on line. compressor needed oil.  
3 103 1315 20 l20f2.sgy0 break from line, streamer caught in gun,  
hailed the gun and streamer, EOL 20. Weather too rough to redeploy for the last three hours, so end of  
survey. Heading for Galveston.