Twichell/ FARNELLA Gulf of
Schwab FRNL F3-90-GM Mexico
March 25-April 8, 1990
SEISMIC LOG

104738

90001

U.S.G.S.
GEOPHYSICS
LOG

SHIP FARNELLA

CRUISE NO. 90-3

DATE 25 March

CHIEF SCIENTIST Twichell/Schwab

F3-90-GM

LIST OF DATA LOGS & RECORDS

✓ – USGS GEOPHYSICS LOGBOOK
SOL, EOL, HOURLY POSITIONS, SPECIAL EVENTS, COMMENTS

✓ – USGS SUMMARY LOG
SOL, EOL, NAVIGATION SYSTEM COMMENTS

✓ – USGS ACOUSTIC EQUIPMENT LOG (3.5 KHz - FARNELLA) ✓
SOL, EOL, SCALE CHANGES, COURSE CORRECTIONS, ROLL NUMBERS ETC

✓ – USGS ACOUSTIC EQUIPMENT LOG (4.5 KHz - SeaMARC)
SEE ABOVE

✓ – 4.5 KHz SeaMARC Sub-bottom VCR Logbook
TAPE #/ START & END TIMES, LINE #

– 4.5 KHz SeaMARC Sub-bottom 9-track TAPES (2)
9/10 per D. Tolchell - data poor to nonexistent

✓ – SeaMARC Sidescan Data 8mm exabyte tapes

– Navigation Diskettes (10 sec?)

– ABC Merged Navigation & Gravity Tapes

✓ – Williamson & Associates Logbook ✓

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* M/V FARNELLA  USGS  90-3  MARCH/APRIL 1990 *
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WEST NET

ORIGIN 26 DEG 10 MIN NORTH 86 DEG 30 MIN WEST

TRANSPONDER	FREQ	CODE	X(EAST)	Y(NORTH)	Z(DEPTH)	RMS	LATITUDE	LONGITUDE
A 34482	9.0/ 9.5	C	13904.1	8946.2	2952.8	14.66	26 14.845	86 21.656
B 42617	9.0/10.0	E	18030.8	8174.7	2998.3	4.72	26 14.427	86 19.179
C 34480	9.0/10.5	D	16773.9	12256.2	3006.3	5.68	26 16.638	86 19.993

AVERAGE SOUND VELOCITY = 1500.00 M/SEC

POLYWOG AT 20 METERS - 3 KNOTS FOR SURVEY POINTS
DATA FILES USED FOR SURVEY CRUNCH: WESTA1.DAT, WESTB2.DAT, WESTC2.DAT

	AB	AC	BC
BASELINE LENGTH (METERS)	4198.2	4380.9	4270.6
BASELINE BEARING (DEGREES)	100.6	40.9	342.9

EAST NET

ORIGIN 26 DEG 40 MIN NORTH 85 DEG 15 MIN WEST

TRANSPONDER	FREQ	CODE	X(EAST)	Y(NORTH)	Z(DEPTH)	RMS	LATITUDE	LONGITUDE
A 44381	9.0/ 9.5	C	5711.4	6894.6	3188.9	3.78	26 43.734	85 11.558
B 44365	9.0/10.5	D	7985.0	3083.7	3230.4	3.87	26 41.670	85 10.187
C 35855	9.0/11.0	B	10273.1	6900.3	3193.0	3.48	26 43.737	85 08.808

AVERAGE SOUND VELOCITY = 1504.93 M/SEC

POLYWOG AT 65 METERS - STOPPED FOR SURVEY POINTS
DATA FILES USED FOR SURVEY CRUNCH: EASTA1.DAT, EASTB3.DAT, EASTC2.DAT

	AB	AC	BC
BASELINE LENGTHS (METERS)	4437.6	4561.7	4449.9
BASELINE BEARINGS (DEGREES)	149.2	89.9	30.9

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST DAVID TWICHELL / WILLIAM SCHWAB

LINE (START / END)	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	SEISMIC SYSTEM
JD 084	1436?				LEAVE INT'L SHIP	REPAIRS TAMPA, FLORIDA
085	0136					START GRAVITY SURVEY LINE 1
	0215		242	11.8		EOL GRAV 1
	0217		231	11.6		SOL GRAV 2
0336 3.5 KHz BEGINS	0644		239	12.0		EOL GRAV 2 / SOL GRAV 3
	0849		250	12.0		EOL GRAV 3 / SEISMIC LINE 4
	1313		032	6.2		EOL S4 / SOL S5
086	0208		010	9.7		EOL S5 / SOL S6
	0238		006	11.1		EOL S6 / SOL S7
	0318		299	7.7		EOL S7 / SOL S8
	0405		286	9.3		EOL S8 / SOL TRANSPONDER #1
	0449		019	2.4		DEPLOY TRANSPONDER "A"
	0450		018	2.4		EOL TRAN 1
	0452		105	8.1		SOL TRAN 2
	0519		010	2.8		DEPLOY TRANSPONDER "B"
	0519		010	2.8		EOL TRAN 2
	0521		004	2.3		SOL TRAN 3
	0545		009	2.3		DEPLOY TRANSPONDER "C"
	1525		144	6.6		EOL TRAN 3
	1533		266	9.2		SOL LINE 1
	1730		016	1.8		DEPLOY SEAMARK
	2048		145	6.6		POWER FAILURE IN LAB
	2320		085	2.9		EOL 1
	2321		085	2.9		SOL 2
087	0605		264	2.7		EOL 2
	0607		266	2.6		SOL 1
	0613		261	2.6		EOL 1
	0613		261	2.6		SOL 1A
	0655		209	3.5		EOL 1A
	0657		194	3.6		SOL 1
	1435		076	2.0		EOL 1
	1436		093	4.0		SOL 2
088	0009		259	1.6		EOL 2

LOOPING BACK & FORTH UNTIL SEAMARK IS WORKING PROPERLY

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST TWICHELL / SCHWAB

LINE START / END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	POSITION, COMMENTS ~~SEISMIC SYSTEM~~
JD 84	1436	90/03/25				Cast off from dock -
					Streamed wire + terminated cable	
					Deployed Western Xponder net	
JD 86						
SOL 1	1730	90/03/27	16	1.8	Deployed Sea MARC	
					26 14.41	-086 35.76
	1800	90/03/27	25	2.8	26 15.69	-086 34.84
	1900	90/03/27	86	5.7	26 15.92	-086 28.30
	2000	90/03/27	97	4.1	26 15.87	-86 22.86
	~2015	circuit	blowout	in	lab	
	2019	90/03/27	took down	nav.	& put in other system	
					strange nav, Mikes	working on it
	2115				26 15.83	-86 17.58
EOL 1 SOL 2	2202				26 15.73	-86 15.20 EOL 1 @ 23:20 SOL 2
JD 87	0000	90/03/27			26 16.12	-86 07.84
	0053				26 14.5	-86 07.4
	0100		277	3.9	26 14.54	-86 07.75
	0200		265	2.8	26 14.20	-86 11.76
	0300		266	3.1	26 13.94	-86 14.84
	0400		263	3.1	26 13.74	-86 17.97
	0500		264	2.8	26 13.51	-86 21.03
	0600		259	2.6	26 13.29	-86 24.00
EOL 2	0613				started turn back to line 1 (a)	EOL 2 LOOPING 1 BETWEEN LINE 1 & LINE 2 UNTIL SEAMARC IS WORKING
	0630		253	2.6	26 13.13	-86 25.47
SOL 1	0700		194	3.6	26° 11.98	-86 26.71 SOL 1
	0800		328	5.0	26 11.76	-86 30.11
			UPDATED TRANSPONDER POSITIONS:			
			(A)		26° 14.845 N	-86° 21.656 W
			(B)		26° 14.427 N	-86° 19.179 W
			(C)		26° 16.638 N	-86 19.933 W
	0900		68	4.5	26° 14.98	-86 28.70

SEE PAGE 1 for Details

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST Twichell / Schwab

LINE START / END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	POSITION, COMMENTS ~~SEISMIC SYSTEM~~	
JD 87	1000	90/03/28		2.8	26° 15.6'	-86° 25.4'	
	1100		075	4.4	26° 15.96'	-86° 21.95'	
					SPEEDING UP TO	FIX CABLE CROSS-OVER PROBLEM	
	1200		089	2.3	26° 16.26'	-86° 18.17'	
	1300		080	2.2	26° 16.38'	-86° 15.97'	
* EOL 1 SOL 2	1400		078	1.9	26° 16.63'	-86° 13.74'	EOL 1 @ 14:35
	1500		112	3.9	26 16 81'	-86° 10.78'	SOL 2 @ 14:36
	1600		233	2.9	26° 14.70'	-86° 10.11	
	1700		257	2.6	26° 14.16	-86° 12.81	
	1800		257	1.6	26° 13.99	-86° 14.37	
	1900		246	1.4	26° 13.85	-86° 16.06	
	2000		258	1.8	26° 13.75	-86° 17.67	
	2100		293	1.4	26° 13.65	-86 19.60	
	2200		283	1.5	26° 13.41	-86 21.43	
	2300		250	1.5	26° 13.24	-86° 23.13	
* JD 88 EOL 2 SOL 3	0000	90/03/28	252	1.5	26° 13.09	-86° 24.84	EOL 2 @ 0009
	0100		022	3.0	26° 15.14	-86° 25.58	SOL 3 @ 0012
					TURNING ONTO	LINE 3	
	0200		51	3.7	26° 18.01	-86° 23.80	
	0300		99	1.8	26° 18.87	-86° 21.29	
	0400		170	3.0	26° 18.98	-86° 19.04	BEGIN SEAMARC RECOVERY @ 0430
	0500	90/03/29	136	4.6	26° 19.14	-86° 16.79	
	0600		84	2.5	26° 19.24	-86° 14.32	
	0700		103	3.1	26° 18.88	-86° 11.14	
	0800		111	4.8	26° 17.72	-86° 06.79	
* EOL 3	0900		131	4.8	26° 15.65	-86° 02.19	EOL 3 @ 0940
* SOL 4	1000		222	8.6	26° 14.46	-85° 58.94	SOL 4 @ 0945
					SEAMARK UP FOR	REPAIRS, TRANSIT TO LN 4	
	1100		250	8.3	26° 09.37	-86° 06.09	
	1200		339	5.9	26° 11.14	-8.6 10.96	
EOL 4	1505		327°	8.1	26° 25.67N	-86° 17.31W	End Line 4
SOL SS	1536	90/03/29	160°	8.7	26° 22.91N	-86° 19.71W	SOL - SS
	1600		160°	7.9	26° 20.00N	-86° 18.62W	

* - NOT @ TIMES LISTED IN "TIME" COLUMN, SEE COMMENTS FOR TRUE TIMES

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST TWICHELL / SCHWAB

LINE START / END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	POSITION, COMMENTS ~~SEISMIC SYSTEM~~
JD 88	1700	90/3/29	159	8.9	26° 12.27	-86° 15.61
* EOL S5	1800	"	308	8.7	26° 07.81	-86° 17.38 EOL S5 @ 1730
SOL S6	1804	"	333	9.0	SOL 6 26°08.36	-86° 17.76 SOL S6
EOL S6 SOL S7	1842	"			changed to tran	S7 EOL S6 @ 1835
	1845	"	326	7.3	26° 13.54	-86° 19.89
	1900	"	290	8.2	26° 13.47	-86° 21.81
	2000	"	288	7.3	26° 16.02	-86° 30.25
* SOL 4	2100	"	272	7.7	26° 17.22	-86° 37.91 SOL 4 @ 2123
	2200	"	100	3.4	26° 18.07	-86° 36.84 SEAMARC RE-DEPLOYED
	2300	"	099	2.5	26° 18.42	-86° 34.02 TUNING SEAMARC
JD 89	0000	90/3/30	074	2.6	26° 17.95	-86° 31.19 TUNING SEAMARC
	0100		124	2.8	26° 18.27	-86° 28.14
	0200		081	2.6	26° 18.46	-86° 25.22
	0300		82	2.2	26° 18.70 N	-86° 22.41 W
	0330		084	2.7	26° 18.85 N	-86° 21.17 W
	0400		094	2.4	26° 19.10 N	-86° 19.79 W
					(we took a jump when switched to GPS)	
	0500		85	2.2	26° 19.22 N	-86° 17.05 W
	0600		103	2.8	26° 19.35 N	-86° 14.55 W
	0700		92	2.4	26° 19.64 N	-86° 11.87 W
	0800		82	2.3	26° 19.84 N	-86° 09.22 W
EOL 4	0811		104	2.6	26° 19.81 N	-86° 08.69 W EOL 4
	0900		195	2.7	26° 18.30	-86° 07.71
SOL 5	0932		258	3.4	26° 17.18	-86° 08.36 SOL 5
	1000		260	2.0	26° 17.11	-86° 09.52
	1100		264	2.4	26° 16.90	-86° 11.90
	1200		262	2.2	26° 16.68	-86° 13.98
	1300		262	2.1	26° 16.49	-86° 16.15
	1310		264	2.6	26° 16.45	-86° 16.55
	1400		264	1.8	26 16.29 N	-86° 18.62 W
	1500		247	1.9	26° 16.12 N	-86° 20.67
	1600		244	2.2	26° 15.88	-86° 23.26
	1700		254	2.0	26° 15.69	-86° 25.36

* NOT @ TIMES LISTED IN "TIME" COLUMN, SEE COMMENTS FOR TRUE TIMES

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM
CHIEF SCIENTIST TWICHELL / SCHWAB

LINE START / END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	SEISMIC SYSTEM
JD 89	1800	90/03/30	278	2.4	26° 15.50 N	-86 27.88 W
EOL 5	1855		282	2.5	EOL 5 26° 15.29	-86° 30.13
	1900		256	2.0	26° 15.28	-86 30.33
	1907				ship to relay =	6.7 sec
	2000		252	2.3	26 15.03 N	-86° 32.77 W
					ship to relay =	6.7 sec
	2100		097	3.3	26° 12.78	-86° 31.94
					ship to relay =	5.0 sec
SOL 6	2133		073	2.4	26° 12.83	-86° 29.98 SOL 6
	2200		096	2.9	26° 12.99	-86° 28.74
					ship to relay =	4.6 sec
	2300		070	2.2	26° 13.23	-86° 26.07
					ship to relay =	5.8 sec
JD 90	0000		101	2.6	26° 13.23	-86° 23.44
					ship to relay =	6.0 sec
	0100		095		26° 13.42	-86° 20.88
					ship to relay =	6.0 sec
	0200		088	2.4	26 13.68	86 18.06
					ship to relay =	6.0 sec
	0300		131°	3.1	26 13.86	86 15.39
					ship to relay	6.0 sec
	0400		108	2.5	26° 14.02	86 12.64
					ship to relay	5.9 sec
	0500		100	2.5	26° 14.37	-86° 10.01
EOL 6	0542		65	3.0	26° 14.49	-86° 07.99 EOL 6
	0600		038	3.4	26° 14.75	-86° 07.15
	0610				ship to relay =	5.8 sec, 0620 TRANSPONDER SYSTEM OFF
* SOL 7	0700		359	3.6	26° 17.92	-86° 07.03 SOL 7 @ 7:07
	0800		309	3.4	26° 20.95	-86 07.52
	0830		289	2.5	26° 21.80	-86 08.85
	0900		266	2.5	26° 21.86	-86° 10.50
	0940				NAVIGATION SYSTEM CRASH	CAUSE ? CHANGE SLAVES ?
	1005		233	2.3	26° 21.50	-86° 12.77 NAV ON LINE

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST TWICHELL / SCHWAB

LINE START / END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	POSITION, COMMENTS ~~SEISMIC SYSTEM~~
JD 90	1100		296	2.6	26° 21.43	+86° 14.80
	1200		170	1.6	26° 21.27	-86° 16.69
	1300		276	2.5	26° 21.09	-86° 18.48
	~~1326~~					
EOL 7 SOL 8	1322		236	2.1	26° 20.82	-86° 19.45
	1400		220	1.7	26° 19.86°	86° 20.03
					ship to relay	~6.0 sec
	1500		213	1.7	26° 18.47	-86° 21.08
					ship to relay	6.3 sec
	1600		215	1.8	26° 17.15	86 22.21
					ship to relay	5.8 sec - in Xponder Nav range
	1700		216	1.7	26° 15.83	-86 23.28
					ship to relay	5.8 sec
	1800		200	1.5	26° 14.62	-86° 24.27
	1814				ship to relay	= 5.3 sec
	1900		214	1.5	26° 13.36°	-86° 25.29
	1910		Rho Rho went crazy; switched to slaves WW, released all stations			
					& stepped 3 times.	
	2000		227	1.6	26° 12.10	-86 26.34
EOL 8	2004		206	1.7	EOL 8 26° 12.00	-86 26.41
					transitting to Line 9	
	2030		147	3.6	26° 10.80	-86 26.45
SOL 9	2055		082	3.3	26° 10.38	-86 25.06 SOL 9
	2100		076	3.1	26° 10.38	-86 24.76
					SHIP TO RELAY =	5.5 SEC (?)
	2200		082	2.9	26° 10.67	-86 21.48
					SHIP TO RELAY	= 5.6 sec
	2300		075	2.5	26° 10.90	-86° 18.28
					SHIP TO RELAY	= 5.2 or 6.7 ?
JD 91	0000		050	5.5	26° 11.09	-86° 15.23
					SHIP TO RELAY	= 6.7 sec
EOL 9 / SOL 10	0005		114	5.4	26° 11.09	-86° 14.81 EOL 9 & SOL 10
					SHIP TO RELAY	= 6.5 sec

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST TWICHELL / SCHWAB

LINE START / END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	SEISMIC SYSTEM
JD91	0100		034		26° 13.26	-86 12.60
CONTINUE ON	0200		044	2.6	26° 15.62	86° 10.76
LINE 10					ship to relay	6.5 sec - probably 6.9 sec
	0300		026	2.6	26° 17.66	86° 08.98
					ship to relay	6.9 sec
EOL 10-1 SOL 10-2	0330				c/c 053°	1st c/c on line 10
	0400		050	3.1	26° 19.87'N	86° 06.57'W
					ship to relay	6.99 sec
	0500		054	3.0	26° 21.71	-86° 03.81
	0600		057	2.8	26° 23.32	-86° 01.04 W
	0700		055	3.3	26° 25.28	-85° 58.32
	0800		052	2.9	26° 26.99	-85° 55.67
					SHIP TO RELAY =	6.7 sec
EOL 10-2 SOL 10-3	0854				TURN ONTO 10-3	COMPLETED
	0900		076	3.1	26° 28.63	-85° 52.81
					SHIP TO RELAY ~	6.7 SEC
	1000		064	3.1	26° 29.44	-85° 49.72
					SHIP TO RELAY ~	6.9 SEC
	1100		066	2.2	26° 30.08	-85° 47.10
					SHIP TO RELAY	~ 6.9 SEC
	1200		071	2.5	26° 30.88 N	85° 43.99'W
					SHIP TO RELAY	~ 7.0 sec
* EOL 10-3 SOL 10-4	1300		063	2.7	26° 31.68'N	85° 41.04'W EOL 10-3 SOL 10-4 @ 1350!
					ship to relay	6.98 sec
	1400		125°	3.7	26° 32.21'N	85° 37.79'W
					ship to relay	6.98 sec
	1500		100°	2.7	26° 31.76'N	85° 34.95'W
					ship to relay	7.00 sec
	1600		101°	3.0	26° 31.47'N	85° 31.69'W
					ship to relay	6.82 sec
	1700		99	2.6	26° 31.10 N	85° 28.88 W
	1800		112	2.7	26° 30.83 N	85° 25.36 W
	1900		104	2.6	26° 30.40	-85° 22.12

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST TWICHELL / SCHWAB

LINE START / END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	SEISMIC SYSTEM
CONTINUE 10-4	JD 91					
	2000		097	3.7	26° 30.13	-85° 19.03
					SHIP TO RELAY	≅ 7.0 sec
	2100		097	2.8	26° 29.79	-85° 16.05
	2200		105	3.1	26° 29.28	-85° 12.73
					SHIP TO RELAY	≅ 7.0 sec WIRE ~ 5152 ± 10 m
	2256		[illegible]	[illegible]	NAVIGATION STREAM	NOT GETTING TO QMIPS FOR 5 min
	2300		103	3.0	26° 28.81	-85 09.66
					SHIP TO RELAY	≅ 7.0 sec WIRE ~ 5152 m
EOL 10-4 SOL 11	2320				STARTING TURN ONTO LINE 11, Clipping ~1 km off	#10
JD 92	0000				26° 26.53	-85° 07.05 STILL IN TURN
					SHIP TO RELAY	≅ 6.7 sec WIRE ~ 5152
EOL 11	0100		182	3.4	26 23.62	-85° 08.12 EOL 11 @ 0045 WIRE = 4718
	0200		83	3.8	26° 20.53	-85° 05.95 Transit to 12
	0300		26	2.0	26° 22.86	-85° 02.92
SOL 12	0330		003	1.2	Start Line	12 26° 23.75 -85° 02.51
	0400		344	1.9	26° 24.69	-85 02.69
	0500		357	2.0	26° 26.45	-85 03.22
	0600		347	1.8	26° 28.13	-85° 03.80
	0700		347	1.9	26° 30.08	-85 04.39
	0800		344	1.8	26° 31.66	-85° 04.97 FISH 600m off bottom
					SHIP TO RELAY	= 6.6 sec WIRE ~ 4925
	0900		348	1.6	26° 33.37	-85° 05.55
					SHIP TO RELAY	= 6.6 sec WIRE ~ 4925
	1000		344	1.9	26° 35.32	-85° 06.17
					SHIP TO RELAY	6.6 sec WIRE ~ 4925 m
	1100		328	2.0	26° 37.17	-85° 06.75
					SHIP TO RELAY	? WIRE ~ 4925 m
	1200		348	2.0	26° 39.05	-85° 07.38
					SHIP TO RELAY	~ 6.6 sec WIRE ~ 4925 m
	1300		344	1.9	26° 40.86	-85° 08.04
	1400 1500		336 340	2.3 1.4	26° 42.76 26° 44.79	-85° 08.75 -85° 09.26
	1600		328	2.4	26° 46.96	-85° 10.05

SHIP/CRUISE NO./LEG FARNELLA F3-90 - GM

CHIEF SCIENTIST TWICHELL /SCHWAB

LINE (START / END)	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	SEISMIC SYSTEM	
EOL 12	1618	90/04/02			END LINE	12 26°47.48N 85° 10.57W	
JD 92	1700		206	4.1	26° 46.63	85° 12.70	
SOL 13	1711	SOL 13	164	4.4	26° 45.79	85° 12.73 (6.05 sec. ship to relay)	
	1800		151	2.7	26° 43.18	85° 11.72 (6.63 sec. ship)	
	1900		168	3.5	26° 39.81	-85° 10.53	
EOL 13	2000		159	5.1	26° 36.14	-85 09.52 EOL 13	
					SHIP to Relay 6.6 or 7.5 sec, WIRE 5280,		
					BRINGING WIRE IN & SEAMARC UP TO DEPLOY TRANSPONDER		NET
	2037				SEAMARC SHUT DOWN, BRINGING IN WIRE		
	2100		159	5.1	26° 31.33	-85° 07.40	
	2200		163	5.0	26° 26.41	-85° 05.52 WIRE NOW 3000m	
			PROJECTED		TRANSPONDER LOCATIONS FOR EASTERN NET		
					(A) 26° 43.87	-85° 11.79	
					(B) 26° 41.8	-85° 10.4	
					(C) 26° 44.97	-85° 09.15	
					ORIGIN: 26° 40.0	-85° 15.0	
	2300		196	4.7	26° 21.77	-85° 06.38 WIRE NOW 1930m	
JD 93	0000		205	4.2	26° 17.49	-85° 08.29 WIRE NOW 391m	
trspC	0100		008	4.1	26° 13.51	-85° 10.26 TRANSIT TO EAST	NET on line trspC began @ 0025
	0200		000	8.2	26° 21.68	-85° 08.00	
	0300		001	8.7	26° 30.20	-85° 08.50	
	0400		357	8.2	26° 38.71	-85° 08.91	
eol trspC sol trspa	0452	trans. C	deployed		26° 43.87	-85° 09.00 eol trspc sol trspa	
	0500		45	6.0	26° 43.80	-85° 08.81	
eol trspa sol trspb	0547	trans. A	deployed		26° 43.87	-85° 11.77 eol trspa sol trspb	
	0600		120	6.4	26° 42.99	-85° 10.63	
eol trspb sol sp1	0614	trans. B	deployed		26° 41.81	-85° 10.39 eol trspb sol sp1	
	0700		028	5.7	26° 44.64	-85° 08.78	
eol sp1 sol sp2a	0730		004	5.6	26° 45.55	-85° 06.85 eol sp1 sol sp2a	
	0800		256	5.2	26° 44.53	-85° 10.06	
	0900		033	4.3	26° 43.32	-85° 08.04	DOING
	1000		311	2.4	26° 44.52	-85° 08.03	TRANSPONDER NET
	1100		293	4.0	26° 44.42	-85° 09.47	CALIBRATION
	1200		156	2.2	26° 43.94	-85° 12.45	RUNS
	1300		031	3.5	26° 42.36	-85° 09.96	
	1400		240	4.2	26° 41.17	-85° 09.05	

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST TWICHELL / SCHWAB

LINE START / END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	SEISMIC SYSTEM
JD 93	1446				SOL 14	
14	1700		307	2.1	26° 20.72 N	85° 03.74'W launch SeaMARC
						for beginning of line 14
	1800		345	2.6	26° 22.94 N	-85° 04.61 W WIRE OUT
	1900		341	2.9	26° 25.22 N	-85° 05.28 WIRE out
	2000		322	2.3	26° 27.51	-85° 05.92 WIRE OUT
	2100		352	1.7	26° 29.73	-85° 06.51 5541m WIRE
	2200		357	2.3	26° 31.66 N	85° 07.01'W
	2300		344	2.4	26° 33.84 N	85° 07.65'W
JD 94	0000	4 APRIL	353	2.3	26° 36.21	-85° 08.32
	0100		354	2.2	26 38.40	85 08.99
	0200		352	2.1	26° 40.45	85° 09.57
	0300		346	2.1	26° 42.51 N	85° 10.12'W
	0400		351	2.1	26° 44.59 N	-85° 10.75 W
					ship to relay	6.6 sec
EOL 14	0428	EOL 14	350	1.7	26° 45.50	-85° 11.00 W
	0500		344	2.1	26° 46.51	-85° 11.29 W
	0600		230	4.8	26° 47.62	-85° 13.29 W
SOL 15	0426	SOL 15	162	4.1	26° 45.59	-85° 13.29 W
	0700		154	3.2	26° 43.70	-85° 12.74 W
	0800		168	3.4	26° 40.59	-85° 11.79
			CALCULATED		POSITIONS FOR EA	STERN TRANSPONDER NET
				A	26° 43.734	-85° 11.558 9.0/9.5
				B	26° 41.670	-85° 10.187 9.0/10.5
				C	26° 43.737	-85° 8.808 9.0/11.0
				ORIGIN	26° 40.0	-85° 15.0
	0900		153	4.0	26° 37.52	-85° 11.07
					SHIP TO RELAY	= 8.5 sec 6331m WIRE
	1000		170	3.7	26° 34.31	-85° 10.22 6243m WIRE
EOL 15 SOL 16	1042		246	3.8		
	1100		241	2.8	26° 30.94	-85° 10.02 ~6.0 km WIRE
	1200		317	2.7	26° 32.13	-85° 12.80 ~5.5 km WIRE
	1600		300	2.2	26° 33.37	85° 23.82

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST TWICHELL / SCHWAB

LINE START / END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	SEISMIC SYSTEM
JD 94	1700	900404	286	2.5	26°33.68	-85°26.91
CONTINE 16	1800		287	2.3	26° 33.94	-85° 29.67
	1900		256	2.8	26°34.25'N	85° 32.47'W
	2000		282	3.3	26° 34.50'N	85° 35.41'W
	2100		251	2.8	26° 34.77N	85° 38.17'W
	2200		287	2.9	26° 35.10	-85° 41.04
EOL 16	2207		293	2.8	26° 35.15	-85° 41.52
	2300		061	4.7	26° 37.19	-85° 40.31
SOL 17	2305					
JD 095	0000		100	2.6	26° 36.96	-85° 36.47
	0100		097	3.0	26° 36.79	85° 33.48
	0200		085	3.2	26° 36.40'N	85° 30.35'W ~5500 m wire out
	0300		097	2.9	26° 36.07'N	85° 27.27'W VEHICLE HEADING 103°
	0400		097	3.1	26° 35.74'N	85° 24.03'W ← COURSE 096°
	0500		098	2.9	26° 35.35 N	-85° 20.61 W
	0600		099	3.1	26° 34.99 N	-85° 17.21 W
	0700		094	3.2	26° 34.66 N	-85° 13.70W
	0800		082	3.9	26° 34.30	-85° 10.10
EOL 17	0815		103	3.5	26° 34.17	-85° 9.15
	0900		303	3.5	26° 35.97	-85° 08.55
SOL 18	0940		283	3.4	26° 36.77	-85° 10.83
	1000		258	2.7	26° 36.87	-85° 12.03 ~5475 m WIRE OUT
	1100		271	2.3	26° 37.14	-85° 14.57
	1200		284	2.8	26° 37.43	-85° 17.57 5770 m WIRE
	1600		275	2.7	26° 38.62 N	85° 29.14W vehicle head 279° LL 276°
	1700		289	2.3	26° 38.87 N	-85° 31.83
	1800		256	2.2	26° 39.15 N	-85° 34.48
	1900		275	2.6	26° 39.44 N	-85° 37.18 W
	2000		280	2.7	26° 39.71	-85° 40.05
	2100		253	2.8	26° 39.99	-85° 42.83
	2200		276	2.2	26° 40.27	-85° 45.55
EOL 18	2224		281		26° 40.37	-85° 46.64 BEGIN BRINGING IN WIRE

AREA

TIME ZONE

SWP	PROGRAM / SCALE	FILTER HI/LO	TAPE NO. START / END	DATA ROLL# START / END	MAGNETICS	COMMENTS

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST TWICHEL/SCHWAB

LINE START/END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	SEISMIC SYSTEM
JD95	2300		040	3.9	26° 42.15	-85° 46.52
SOL 19	2315		095	4.5	26° 42.53	-85° 45.40
096	0000		105	2.3	26° 42.29	-85° 42.49
	0100				26° 41.91	-85° 39.49
	0200		101	3.0	26° 41.65 N	85° 36.56' W fish heading 101° line bearing 096°
	0300		097	3.0	26° 41.28' N	85° 32.97' W fish heading 106° LBR 096°
	0400		92	3.2	26° 41.01 N	85° 29.78
	0500		94	3.4	26° 40.66 N	-85° 26.67
	0600		96	3.1	26° 40.24 N	-85 23.27
	0700		098	2.9	26° 39.81 N	-85° 19.90' W
	0800		100	3.1	26° 39.45 N	-85° 16.38 W
	0900		100	2.9	26° 39.19	-85° 12.87
EOL 19	0925		108	3.9		
	1000		153	5.1	26° 37.10	-85° 09.41 FISH HEADING ~ 145° LBR 329
	1100		334	3.2	26° 37.70	-85° 06.35 FISH HEADING ~ 107° LBR 329
	1200		344	1.7	26° 39.97	-85° 07.75 FISH HEADING 348° LBR 329°
SOL 20	1200		"	"	"	" 495 m WIRE
	1300		327		26° 41.32	-85° 08.66 SETTING UP FOR 1 km SWATH
	1400		319	2.0	26° 42.83	-85° 09.68
	1500		330	2.2	26° 44.32	-85 10.65
	1630		334	4.1	26° 47.05	-85 12.38 SWITCH TO 5 km SWATH
EOL 20	1634				switched NAV to	line 21
	1700		227	4.5	26° 47.28	-85° 14.19
SOL 21	1742		303	3.2	26° 46.75	-85° 16.20
	1800		299	2.3	26° 46.78	-85° 17
	1900		279	2.6	26° 47.06 N	-85° 19.64 W
	2000		261	2.3	26° 47.30 N	-85° 22.28 W
	2100		264	2.4	26° 47.61	-85° 24.87 WIRE ~5656
	2200		279	2.4	26° 47.90	-85° 27.46
QMIPS	2240				QMIPS NOT LOGGING	~2130-2240
EOL 21	2254		284	2.4		
	2300		249	3.6	26° 48.16	-085° 30.34 WIRE 5175
JD 97	0000		124	5.3	26° 44.10	-85° 30.73 WIRE

SHIP/CRUISE NO./LEG FARNELLA F3-90-GM

CHIEF SCIENTIST TWICHELL / SCHWAB

LINE START / END	TIME	YYMMDD	CRS/HDG	SPD	NAVIGATION	SEISMIC SYSTEM
JD 97 SOL 22	0100	90/04/07	096	3.4	26°43.04'N	85°26.91 W SOL 22 wire=5700m
	0200		102	3.5	26°42.61'N	85°23.72'W in rain squall
	0300		083	4.0	26°42.22'N	85°18.89'W
	0400		105	3.8	26° 41.78 N	-85° 15.0 W
	0500		97	3.2	26° 41.37 N	-85° 11.13 W
	0600		98	3.1	26° 41.01 N	-85° 07.52 W
EOL 22	0616		99	3.2	26° 40.88 N	-85° 06.60 W
	0700		336	5.9	26° 42.05 N	-85° 05.65 W
SOL 23	0735		286	2.4	26° 43.47	-85° 06.89
	0800		276	2.7	26° 43.48	-85° 08.27 WIRE ~5040m (WIRE OUT)
	0900		277	2.6	26° 43.77	-85° 11.24 WIRE ~5969m
	1000		255	2.5	26° 44.06	-85° 14.04 WIRE ~6000m
	1100		284	2.8	26° 44.36	-85° 17.04
	1200		283	2.7	26° 44.62	-85° 19.95 WIRE ~?
	1300		260	2.7	26° 44.96	-85° 22.72 WIRE 6000m
	1400		286	3.1	26° 45.27	-85° 25.89
SOL 23 @ 1540	1500		285	2.8	26° 45.54	-85° 28.46
SOL 24	1600		173	5.4	26° 44.52'N	85° 31.10'W c/c to line 24
	1700		129	2.6	26° 43.10	-85° 26.78
	1800		104	3.5	26° 42.67	-85° 23.40
	1900		84	3.6	26° 42.26	-85° 19.31
	2000		104	3.1	26° 41.80	-85° 15.39 WIRE ~6050
EOL 24	2100		096	3.7	26° 41.43	-85° 11.54
	2200					BRINGING IN SEA MARC
	2300					
JD 98	0000					
	0100					
SOL GRAV 3r	0200					
	0300					
	0346					SEAMARC ON DECK
	0400					
	0500					
	0600					
	0700					