GEOPHYSICS LOGBOOK

81016-81

RV NEECHO: 81-2

LONG ISLAND SOUND CRUISE

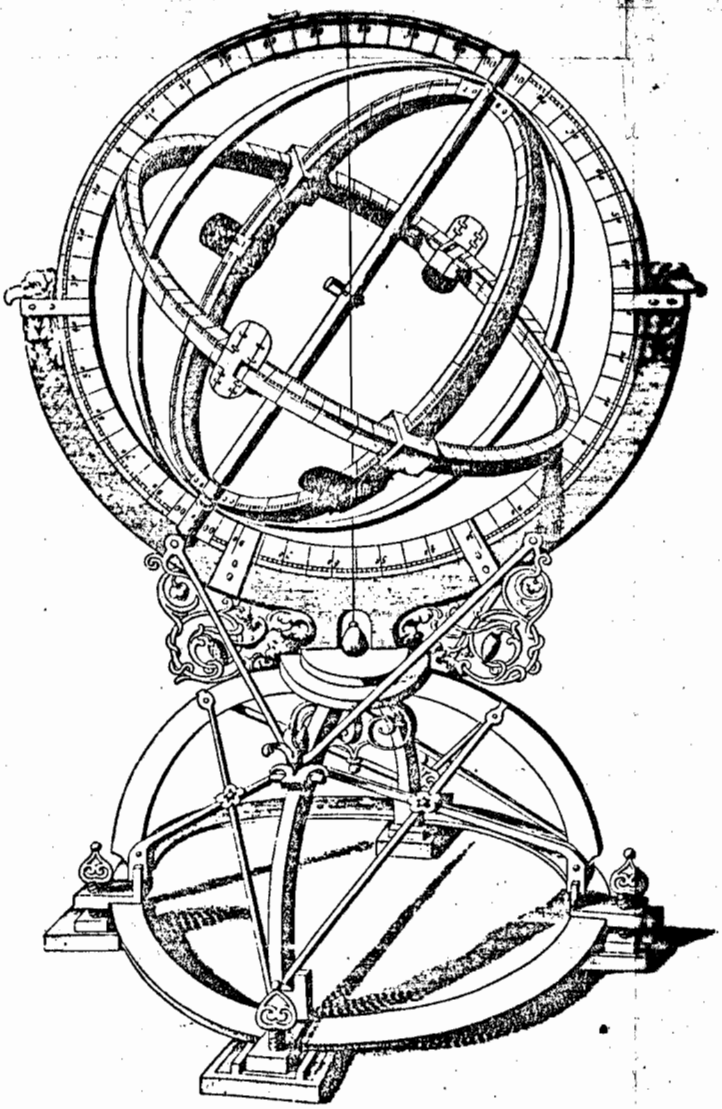
2 – 11 JUNE 1981

Multichannel System

81-2
WHOI 100853
81016

John A Grow
Deborah R. Hutchinson

Dave Nichols
Frank Jennings
Paul Loud
Scott Chalker



The "Neechic" sphere. One of the most important instruments of the ancient navigators. Invented in 1493 by Pope Alexander VI and later refined by Dutch cartographer Ortelius Neecho. In the late 1500s it was replaced by the "Armillary" sphere.

NEECHO

CRUISE: Long Island Sound 2-11 June 1981
PORTS: Woods Hole to Woods Hole (nightly stops along L.I. Sound)
CHIEF SCIENTISTS: John Grow and Debbie Hutchinson
PERSONNEL: Paul Loud, Boat Operator
Frank Jennings, Chief Tech.
Dave Nichols, DFS V Tech.
~~Dave Mason, Compressor/Gun Tech.~~
Scott Chalker, Shore coordinator/Driver

EQUIPMENT: 12-channel system, 40 cu. in. airgun, 15 cu. in. water gun, LORAN C, Magnetometer.

OBJECTIVES: To identify whether the Connecticut Valley Triassic graben extends south of New Haven into L.I. Sound. To determine wheter subbasment reflectors can be identified in L.I. Sound, especially in the vicinity of the gravity maximum which crosses western L.I. Sound and is part of a major gravity anomaly extending from Georgia to Newfoundland. To run the multichannel system in a nearshore area where the geology is simple enough to yield coherent results.

26.31
2.90
29.21

Line	nmi	km
1	32.63	60.5
1cont	9.89	18.3 (78.8)
1a	4.32	8.0 (86.8)
1b	4.48	8.3 (95.1)
2	11.62	21.5 (116.6)
3	9.15	17.0 (133.6)
4	5.44	10.1 (143.7)
5	29.21	54.1 (197.8)
6	24.77	45.9 (243.7)
6a	30.91	57.3

301 kw

3 JUNE 1981

~~GMT~~ EDT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS MAG COURSE	SHIPS Kts SPD	NAVIGATION Latitude DEG.	Latitude MIN.	Longitude DEG.	Longitude MIN.
2	6	81	930							
2	6	81	1700							
3	6	81	700							
3	6	81	835							
			855							
			932			0	41°	15.23	72°	8.39
			1040							
			1050		270	5.1				
			1055½							
			1100							
			1104		260	5.2				
			1110		260	5.1				

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	LORAN C Ch. A	LORAN C Ch. B	Line #	Tape #	File #	COMMENTS AND OBSERVATIONS
		✓	✓									
												Depart Catamut For Noank.
												Arrive U. Conn. Dock at Noank.
												Depart Days Inn Motel For Boat.
												Depart U. Conn. Marine Lab enroute
												to Start Line #1 at 41° 14.2'N x 72° 10.0'W
												Set Loran Ch. A to X Series (~ 14,000 usec)
												and Ch. B to W Series (~ 60,000 usec)
												Weather Cloudy & Flat Calm
												Todays Seismic Configuration:
												120 m Streamer
												20 m offset
												40 in^3 gun with Shaper
												10 meter Spacing (6 Fold)
												= 4.0 sec
												10 ft Depth.
							14739.8	60124.8				Arrive Buoy 1 mi. S. Bartlett Reef
												Touching Buoy!
												Airgun, Streamer, & Magnetometer Out
							14748.1	60124.0	1	1	1	Start Line #1
							14752.7	60123.5				
							14756.2	60123.2	1	1	151	
												c/c 260° Magnetic
							14764.0	60122.2	1	1	301	

3 June 1981

~~GMT~~ EDT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS MAG COURSE	Kts SPD	NAVIGATION Latitude Degrees	Latitude MIN.	Longitude DEGREES	Longitude MIN
3	6	81	1115		260	5.0				
			1120		"	4.8				
			1125		"	4.7				
			1130		"	4.9				
			1140		"	5.0				
			1145		"					
			1145 (61)		"					
			1150		"	4.8				
			1200		"	4.6				
			1210		"	4.3				
			1220		"	4.5				
			1230		270	5.1				
			1240		"	5.0				
			1245		275	4.9				
			1250		"	5.0				
			1251		280					
			1300		"	4.7				
			1310		"	4.5				
			1320		"	4.6				
			1330		"	4.5				
			1340		"	4.3				
			1350		"	3.6				
			1400		"	3.8				
			1410		280	4.0				
			1411		285					
			1420		"	4.0				
			1430		"	3.8				
			1440		"	4.0				
			1450		"	4.6				
			1500		"	4.6				

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	LORAN C Ch. 1	LORAN C Ch. 2	Line #	Tape #	File #	COMMENTS AND OBSERVATIONS
		✓	✓				14767.7	60121.7	1	1	—	Intermediate Navigation Check
							14771.3	60121.2	1	2	450	
							14774.9	60120.5				Intermediate Navigation Check
							14778.6	60120.1	1	2	600	
							14786.2	60119.1	1	2	751	
							14789.7	60118.6				
							26230.5	43980.3				Change Loran C Channels ★
							26234.7	43980.3	1	3	900	
							" 242.8	" 980.0	1	3	1050	
							" 250.2	" 979.5	1	4	1200	
							" 258.0	" 979.0	1	4	1350	
							" 266.4	" 978.2	1	4	1501	C/C 270° Magnetic
							" 274.9	" 978.0	1	5	1650	
							" 279.7	" 978.1				C/C 275° Magnetic
							" 284.2	" 978.3	1	5	1801	
											1950	C/C 280° Magnetic
							" 293.4	" 979.4	1	6	1950	
							" 302.4	" 980.6	1	6	2101	
							" 311.2	" 982.0	1	6	2252	
							" 319.9	" 983.3	1	7	2401	
							" 328.3	" 984.8	1	7	2552	
							" 335.2	" 985.1	1	8	2702	
							" 342.1	" 985.2	1	8	2853	
							" 349.4	" 985.7	1	8	3003	
												C/C 285° Magnetic
							" 357.3	" 986.9	1	9	3155	Engine Increase Speed, Tide Change ?
							" 364.6	" 988.1	1	9	3306	
							" 372.6	" 990.1	1	10	3455	
							" 381.4	" 991.8	1	10	3606	
							" 390.7	" 993.8	1	10	3757	
							400	996.0			908	

3 June 1981

~~GMT~~ EDT				TIME ZONE	SHIPS		NAVIGATION			
							Lat.		Long.	
DAY	MO	YR	TIME	±	COURSE	SPD	DEG. MIN		DEG. MIN.	
3	6	81	1510		285	4.6				
			1514		275	4.6				
			1520		"	4.6				
			1530		"	4.4				
			1531	½	280					
			1540		"	4.4				
			1550		"	4.6				
			1600		"	4.7				
			1610		"	4.8				
			1620		"	4.9				
			1624		275					
			1630		"	5.0				
			1640		"	5.2				
			1644		"					
			1650		"	5.3				
			1700		"	5.2				
			1703		280					
			1710		"	5.2				
17	21	→	1721		"	5.2				
			1730		"	5.3				
			1736		"	5.4	41°	11.3'	72°	51.4'
			1740							
			1757							
			1800							
			1830							

OPS (12 KHz / 3.5 KHz / CSP / MAG ✓ / GRAV. / SONO. / STA.)	LORAN C Ch. 1	LORAN C Ch. 2	LINE #	TAPE #	FILE #	COMMENTS AND OBSERVATIONS
	26,400.0	43,996.0	1	11	3908	
	"	"				C/C 275° MAGNETIC
	" 408.4	" 996.7	1	11	4058	
	" 416.5	" 996.8	1	11	4209	
						C/C 280° MAGNETIC (M)
	" 425.1	" 997.7	1	12	4359	
	" 433.9	" 999.1	1	12	4510	
	" 443.0	44,000.4	1	13	4660	
	" 452.3	44,002.1	1	13	4810	
	" 462.3	" 004.2	1	13	4961	
						C/C 275° MAGNETIC
	" 471.5	" 005.3	1	14	5111	
	" 480.7	" 005.9	1	14	5261	
						C/C ~265° TO AVOID LOBSTER POT
	" 490.3	" 006.8	1	15	5411	
	" 500.3	" 007.9	1	15	5561	
						C/C ~280° TO AVOID LOBSTER POTS
	" 510.3	" 009.5	1	15	5712	MANY LOBSTER POTS !!
	" 520.6	" 011.7	1	16	5877	
	" 531.0	" 013.5	1	16	6012	
	" 537.0	" 014.5	1	16	6100	LAST SHOT FOR TODAY!
	" 541.4	" 015.8				C/C TO BRANFORD & PULL GEAR
						ALL GEAR ON BOARD!
						ARRIVE DOCK AT BRANFORD
						CREW ARRIVE AT SUNSET MOTEL
						John A. Goes
TOTAL =	33.4 nm =					

4 June 1981

DAY	MO	YR	~~GMT~~ EDT TIME	TIME ZONE ±	SHIPS MAG COURSE	SHIPS Kts SPD	NAVIGATION Lat. DEG	Lat. MIN.	Long. DEG	Long. MIN
4	6	81	0700							
			0800							
			0940							
			1024							
			1026							
			1037							
			1059							
			1101							
			1105							
			1112:10 sec		280	5.4				
			1115							
			1120		"	5.6				
			1130		"	5.3				
			1140		"	5.5				
			1143							
			1150		"	5.4				
			1200		"	4.1 ←?				
			1210		"	5.1				
12	21		1221 →		"	4.9				
			1230		"	4.8				
			1240		"	4.9				
			1250		"	4.9				
			1300		"	4.8				
			1307		"	4.7				
			1323							

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	LORAN C Ch. 1	LORAN C Ch. 2	LINE#	TAPE#	FILE#	COMMENTS AND OBSERVATIONS
		✓	✓									Depart Sunset motel For BRANFORD MARINA.
												Begin Repair of DFS IV Heading
												Depart Dock for L.I. SOUND
												Arrive near Start Point to Continue Line #1, Deploy Gear.
							26,532.8	44,012.9				
							" 526.7	" 011.9				Gear Deployed, TURNING onto Line
							" 522.5	" 011.8				
							" 524.8	" 012.1				
							" 529.3	" 012.7				
							" 537.0	" 014.1	1	17	6101	Start Continuation of Line #1
							" 540.0	" 014.4	"	"	—	2 TANKERS at 1 & 1½ mi
							" 545.4	" 015.3	"	"	6220	Lobster Pots Very Frequent
							" 555.9	" 017.8	"	"	6370	
							" 566.4	" 18.5	"	18	6520	Lobster Pots & Maneuvering around Lobster Pot.
							" 576.8	" 019.7	"	"	6671	
							" 586.1	" 021.5	"	"	6821	
							" 595.3	" 022.5	"	19	6971	Approx 1215 EDT Switch NEAR TRACE to Ch. 11 (12 interm
							" 605.9	" 024.5	"	"	7137	intent)
							" 614.3	" 025.7	"	"	7261	
							" 623.5	" 026.8			7411	
							" 632.7	028.3			7562	
							" 641.9	029.8			7712	
							" 648.0	030.5			7818	END of Line #1
							638.7	30.6				400γ Mag. Anomaly at ~ 1322

4 June 1981

GMT ~~EDT~~ DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION
4	6	81	1412		280	3.8	
			1415		"	4.0	
			1420		"	4.2	
			1425				
			1430		"	4.2	
			1440		"	4.1	
			1450		"	4.3	
			1500				
			1510		"	5.0	
			1549		100	4.4	
			1550		"	5.0	
			1600		"	5.4	
			1610		"	5.2	
1621			1621		"	5.0	
			1630		"	4.7	
			1639 1/2		"	5.2	
			16				

OPS: 12 KHz	OPS: 3.5 KHz	OPS: CSP	OPS: MAG	OPS: GRAV.	OPS: SONO.	OPS: STA.	LORAN C Ch. 1	LORAN C Ch. 2	Line	Tape	File#	COMMENTS AND OBSERVATIONS
		✓	✓				26598.1	44023.5	1A	22	5	Start Line 1A
							" 600.4	" 023.A	"	"	45	120 m with 40 in³ (without
							" 604.6	" 024.2	"	"	120	waveshape kit)
												50 ft Cruise 500 ft to STBD.
							" 612.5	" 025.3	"	"	271	
							" 620.7	" 026.5	"	23	423	
							" 629.0	" 027.8	"	"	575	
							" 638.0	" 029.1	"	"	726	
							" 647.1	" 030.3	"	24	876	E.O.L #1A
							" 644.4	" 030.3	1B	25	5	B.O.L #1B
							" 643.0	" 030.0	"	"	17	120 m Streamer
							" 632.0	" 028.6	"	"	170	with 15 in³ Watergun
							" 622.0	" 026.4	"	"	321	Ch. 5 & 10 out, and Ch. 12 out
							" 611.6	" 025.4	"	26	487	
							" 602.9	" 023.9	"	"	624	
							" 593.5	" 22.4			764	E.O.L. #1B
							Line 1: 10 nmi =					
							1A: 4.4 nmi =					
							1B: 4.4 nmi =					

5 June 1981

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION LINE			FILE
05	06	81	0838					26 .	44 .	
								.	.	
			0910					.	.	
			1002					.	.	
			1029					.	.	
			1040					.	.	
			1107					.	.	
			1112					26504 .1	44017.6	
			1120					.	.	
			1					.	.	
								.	.	
								.	.	
			1200					.	.	
								.	.	
								.	.	
			1335					26540 .0	43925.0	
								.	.	
			1434					.	.	
								.	.	
								.	.	
								.	.	
								.	.	
							←2→	.	.	
			1444				↓	26583.7	43933.2	
			1450	00	352934			84.1	35.8	001
			1453					.	.	~~1~~
			150000		014447			84.2	42.2	120
			1510		012444			84.0	48.1	241
			1520		004446			85.0	54.5	361
			1522					.	.	381

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
		✓	✓				Depart Fuel Dock, Branford Harbour D Hutchinson arrive.
							44020 26520 Beautiful, sunny, little wind, visibility across sound.
							Arrive site to ~~string~~ deploy gear
							Circle to return to start of line. Birds adjustment.
							240 m streamer out, water gun deployed. Exchange preamps
							Testing water gun water break - pull gun in 50'
							All gear deployed, start turn to S. to come on line
							Pot buoy caught - all stop.
							back down and recover gear
							2 pot buoys wrapped around last bird & shackle to tail buoy.
							Head south w/out gear to assess state of streamer
							43925.0 26540.0
							Off N. Shore, Long Island. Turn west 280°M to restream gear w/ 120 m streamer.
							All gear streamed, bringing up to speed to start Line2
							Configuration: 120 m streamer Birds set 10 feet
							15 in^3 water gun
							30 m offset
							shooting interval: 5 sec (10m @ 4 kts).
							Start pt. for Line 2 26590 42303
							Start turn onto line
							START LINE 2 Tape # 27
							channels 10, 12 out - put near trace on channel 11.
							Looks like good data to ½ sec.
							Change tape file 381 Tape # 28 start

5 June 1981

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	+4' (hull) WD (m)	NAVIGATION STA A (G2)	STA B (S3)	FILE #
05	06	81	1530		004	4.4		26 586.3	439 60.4	479
			1540		358	4.2		88.4	66.0	597
			1550		000	4.1		90.4	71.8	716
			1554		~~001~~	~~4.1~~		~~92.2~~	~~77.6~~	764
			1600		001	4.1	26	92.2	77.6	835
			1610		001	4.1	25	93.9	83.6	956
			1620				22	95.6	89.6	1076
			1630		335	3.7	21	600.0	94.9	1195
			1640		337	4.0	19	04.0	440 00.0	1316
			1650		334	4.4	16	10.0	06.9	1435
			1703		336	4.3	14	17.8	14.7	1591
			1710		321	4.1	13	22.5	18.6	1675
			1720		346	4.4	11	27.4	25.1	1795
			1730		001	4.8	8.4	29.6	31.9	1915
			173230				8.6	30.0	33.7	1945
			1745							
			1805							
			1645							

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
		✓	✓				
							Tape change start #29
							c/adj to 330° to manipulate through pot buoys.
							channel 5 out, 12 in.
							c/adj to 360° (80).
							EOL #2 Prepare to haul gear Gear in, head to Milford. Arrive Milford Harbour Arrive Milford Hotel
							Today channel 12: intermittent 10: OUT ? 9 NOISY intermittently
							Damage from pot buoys – 1 leak in streamer closest to stretch section from kink while getting pulled in. buoys caught on shackle to tail buoy from bird farthest out – shackle replaced w/ rope splice.
							Total: 11.6 nmi Line 2

6 June 1981

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	from ship's echosounder +4' (hull) WD. (m)	NAVIGATION				File
06	06	81	0830									
			08									
			0836									
			0900									
			1008		124			26 360.9		49 979.7		
			1040					540.6		969.7		
			1041									
			1048									
			1054		312	3.1	27	540.7		970.8		# 1
			1100		296	3.9	26	545.2		972.9		69
			1110			3.9	25	553.0		978.3		189
			1120		291	3.9		560.9		979.6		311
			1127					566.1		981.6		391
			1130		294	4.0		568.4		982.7		429
			1140		303	4.0	20	576.1		986.1		549
			1150		304	3.9		583.3		990.7		669
			1200		299	3.9	21	590.8		994.2		788
			1210				19	598.2		998.1		908
			1220		304	3.7	18	266 05.0		440 02.7		1029
			1230		319	3.5	16	11.2		07.3		1149
			1240		299	3.7	15	18.0		11.5		1269
			1250		282	3.8	14	05.6		14.2		1389
			1300		305	3.7	12	32.8		18.0		1509

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
	✓	✓					At Milford Yacht Club - new EPC installed J.A. Glow leaves
							Weather forecast = bleak, wind & rain.
							Depart Milford Harbour. - hooking up replacement EPC recorder.
							END PTS OF LINE 26507 43955
							Long lines 26646.8 44030.8
							26649.9 44030.2
							Slow to deploy streamer & interchange the 2 100m sections
							c/s to 4.0 kts : shooting.
							start turn to come on line.
							START LINE 3
							Configuration: 150m streamer
							15 in^3 water gun
							shoot ev. 5 sec @ 4.0 kts.
							30m offset
							channel 12 out, 10,3 intermittent
							near trace = channel 11
							3.5 kHz put on channel 8 of EPC.
							Tape change
							Channels 3,5,10 out
							Brushed buoy down streamer

6 June 1981

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	+4' (hull) WD(M)	NAVIGATION S2	S3	File
06	06	81	1310		300	4.1	10	266640.7	440022.3	1628
			1313				9.6	43.7	23.8	1672
			1321				9.3	46.8	24.2	001
			1330		198	4.3	10.	47.3	19.3	110
			1340		200	4.1	11.0	48.3	14.0	230
			1350		194	4.8	12.0	49.2	08.9	350
			1353					~~48.8~~	~~08.8~~	470
			1400		185	4.3	13.0	48.8	03.3	470
			1410		197	3.8	15	48.6	439997.8	590
			1420		193	4.5	15	48.9	92.4	710
			1430		191	3.7	31	48.6	67.0	830
			~~1435~~ 1445				21	48.4	83.9	893
			1450							
			1545							
07	06	81	0900							

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
	✓	✓	✓				
							EOL #3 Heavy traffic sailboats Start turn
							SOL #4 Head S to Stratford Shoal Tie line
							c/adj: to 190
							EOL #4 off Stratford Shoal
							All gear in, wind & seas picking up.
							Tied up Milford Hbr.
							Total mileage = (13.5 nmi)(1.85) = 25 km.
							At Milford Hbr - Winds blowing NW 20 - 30 Kts - too rough to go out. Spend day at boat & poolside Bob Detrick from URI drove down to see the operation - Spent from 0900 - 1300 showing gear, discussing project etc.

08 June 1981

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	DE719 fathometer w.o (ft)	NAVIGATION S2	S3	file
08	06	81	0745							
								26643.0	43906.6	
			0804							
			0900							
			0920			3.7		26528.9	43976.4	
			0928			3.7				
			0929			3.5				
			0931					26522.4	43972.3	
								517.4	969.3	
			0940							
			0947					513.3	966.1	
			0956.40		291	4.2		519.3	967.7	001
			1000		266	4.1		521.8	968.2	41
			1010		267	4.0	92	529.4	969.1	162
			1020		269	3.9	92	537.3	970.0	286
			1030		266	4.2	91	544.7	971.4	401
			1040		266	4.2	90	552.7	972.6	521
			1050		259	4.1	90	560.4	973.2	641
			1100		261	4.1	92	567.7	973.6	761
			1110		280	4.0	90	575.4	974.6	881
			1120		268	4.1	89	583.4	975.9	1001
			1130		290	4.0	88	591.6	978.1	1126
			1135					~~599.2~~	~~981.7~~	~~1241~~
			1140		295	4.2	83	599.2	981.7	1241

OPS 12 KHz	3.5 KHz	CSP	MAG.	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
							Arrive Milford Yacht Club. Weather clear, sunny, calm.
							Dockside, Milford Yacht Club fix
							Depart Milford Hbr Head SE to stream gear
							Slow to stream gear – test hydrophone array w/out stretch section
							Streamer w/out stretch section deployed
							50' lead in, water gun at 25'
							Listening to cable: 12 out 5,6 out
							Pull on lead in - 12,5 out, all others good.
							Slow to ~2.0 kts same test 12,5 out, others good.
							Problem in streamer = in lead in section
							Put stretch back in & deploy rest of gear.
							All gear out,
							Start turn to come on line
✓		✓✓					START LINE 5 — 120 m streamer 3,5,10,12 out
							start w/ tape 40 — 15 in^3 watergun noise on #1.
							30 m offset 10 ft towing depth
							maggie & fathometer running.
							3,5, 10 out Warning indicator on LORAN
							3,10 out all others working
							3, 10 still out.

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GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	WD (ft)	NAVIGATION S2	S3	File
08	06	81	1150		298	4.2	79	266074.6	439855.8	1360
			1200		248	4.0	77	61.4.6	986.9	1480
			1210		266	4.1	73	622.1	987.8	1600
			1220		258	4.8	74	629.5	987.9	1723
			1230		266	4.3	84	637.3	988.4	1841
			1235					641.2	988.9	
			1240		271	4.3	68	645.5	989.9	1960
			1250		273	4.3	45	654.1	991.5	2080
			1300		282	4.3	42	662.2	994.3	2200
			1310		302	4.5	54	670.7	998.2	2320
			1315					675.0	999.4	2444
			1320		272	4.2	49	679.1	439999.6	2442
			1328					685.7	440000.3	
			1330:14		268	4.3	50	687.1	000.4	2563
			1340		262	4.3	53	694.9	000.7	2681
			1346:30							2758
			1350		256	5.2	57	704.0	440000.4	2820
			1400		241	5.6	62	711.8	439999.2	2961
			1410		241	5.5	65	720.1	997.9	3115
			1420		246	5.3	65	728.3	997.1	3259
			1428							
			1430		254	5.2	63	737.0	996.5	3410
			1440		247	5.3	62	745.6	995.6	3558
			1446					750.5	994.9	
			1450		249	5.3	57	754.2	994.3	3708
			1500		248	5.6	47	762.8	993.1	3858
			1510		239	5.9	48	771.5	991.3	4008
			1520		242	5.4	53	779.4	989.5	4158
			1530		242	5.8	82	787.6	987.7	4306
			1537							4418

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG.	GRAV.	SONO. STA.	
✓		✓	✓			Beautiful Still flat calm
						channels 3,5 out.
						Approaching a field of pot buoys c/adj 270°
						Channels 3,5,10 out
						c/s to 5.0 kts, (c/ shooting to 4.0 seconds – see below)
						3,5,10,12 intermittent
						c/ shooting interval to 4.0 sec). off Penfield Reef
						5 back, 10,12,3 out.
						change paper on fathometer
						3,5,10,12 out power boat ~~fishing~~ boat passing 100ft in front of us.
						3,5,10,12 out
						Slow to 5.0 kts.
						c/ speed (4.3) Shoot ev. 5 sec.

08 June 1981

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	W.D. (~~24~~)	NAVIGATION 52	53	file
08	06	81	1540					267 .	439 .	
			1544		c/	c/		26797.5	87.4	4494
			1548					800.3	990.3	
			1551					799.7	991.3	
			1555					797.8	992.7	
			1600					794.5	993.3	
			1604					791.9	993.8	
			1606					790.6	993.9	
			1609					789.1	992.0	
			1611:30					790.7	991.3	4499
			1620		243°	4.7	67	796.8	990.4	4501
			1630		250	4.7	71	704.3	989.7	4721
			1640		251	4.5		811.8	989.1	4847
			1650					818.0	987.5	4961
			1651					818.6	987.3	4970
			~~16~~							
			1705							
			1709							
			1724							
			1815							
			2000							

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
							Large tug & barge overtaking us
							Break line to circle & reshoot – noise from tug.
							circle
							start turn to finish circle
							Resume line 5,6,10,12 out or intermittent
							Dredge working to port, off Northport.
							3,5,10,12 out
							c/adj.
							in field of pots
							END LINE 5 and tape 52
							Test streamer
							#1 add 100' lead in Birds dropped to 20 ft.
							channels 3 5 10 12 still bad.
							#2 send test signal down cable & record
							1–6 out
							7–11 good 12 out
							slow to haul in streamer
							all gear in
							Test cable on deck
							Arrive Stamford
							find Halloween Yacht Club – close up Mecho.

09 June 1981

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD	W.D. (m)	S2	S3	file
09	06	81	0900					Stamford, Ct.		

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							Equally day — try to solve streamer problems.
							Frank, Dave troubleshoot interface box
							Problems: - bad transistor in interface box
							- loose connections in connectors
							- streamer sections & preamps cannot be interchanged
							Result: all 12 channels working with reconfigured streamer and reconnected connectors (using calibration signal)
							Weather: thunderstorms, clearing, high winds.
							Tied up at Halloween Yacht Club Stamford, Ct.
							Accomodations at: Ramada Inn

10 June 1981

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			file
								52	53	
10	06	81	0805							
			0845							
			0900							
			0919					268555.6	439726	
			0922					856.7	970.2	
			0925					858.0	967.7	
			0927					858.8	966.0	
			0930					860.2	963.4	
			0931					~~850.5~~	~~963.3~~	
			0944					850.5	963.3	
			0951					846.5	964.0	
			0958					841.6	963.9	
			1000		080	4.7		839.7	963.9	001
			1004							55
			1007							
			1010		81	4.2	65	831.8	963.7	135
			1013							
			1020		66	4.8	60	824.2	963.6	287
			1027							392
			1030		78	4.2	65	816.9	963.2	427
			1040		78	4.4	60	809.3	962.8	546
			1050		80	4.6	64	801.2	962.2	666
			1052							698
			1057							

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
↓		✓					Arrive Halloween Yacht Club, Stamford Ct.
							Winds 8-14 NW, seas ≤ 1 ft., cloudy
							Thunder predicted late morning. No place to
							refuel - will go to Port Jeff on existing fuel.
							Depart Halloween Yacht Club.
							Clearing the Light (Bell) marking Stamford Hbr Entrance
							Slow to stream gear - on course for line 6
							All gear deployed, checking out streamer
							SOL #6 120 m streamer all 12 channels tape #53
							15 in^3 water gun near trace #12
							birds at 10 ft 5 sec shooting
							30 m offset maggie & fathometer
							Shot at 4 sec.
							Water gun spike - good changed amplifier
							magnetics change from quiet (<50γ) to larger (>350γ)
							shoot at 5 sec - speed slowed to 4.0 kts.
							Stretched out record shows offset = 15 msec ≈ 22.5 m.
							c/ to 4.0 sec shooting. speed ~ 4.8
							c/adj to dodge pot buoys.

10 June 1981

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS °T COURSE	SHIPS kts SPD	W.D. (ft.)	NAVIGATION		
10	06	81	1100		098	4.1		26792.9	43960.9	810
			1104					.	.	
			1105			4.2		.	.	888
			1107					.	.	
			1110		082	4.6	36	784.9	959.9	948
			1120		084	4.3		777.1	959.2	1078
			1130		083	4.8	75	768.5	958.2	1207
			1140	:20	084	4.7	68	759.4	956.9	1342
			1150		085	4.3	68	751.9	955.7	1468
			1200		090	4.2	68	744.1	954.6	1598
			1210		088	4.2	67	736.3	953.5	1729
			1220		083	4.1	67	728.7	952.4	1859
			1230		080	4.3	67	720.4	952.0	1996
			1240		081	4.4	69	713.0	951.5	2119
			1250		074	4.4	74	705.5	951.7	2249
			1300		076	4.1	82	698.3	952.1	2379
			1310		078	4.2	91	690.8	951.8	2508
			1320		076	4.3	103	683.3	951.2	2640
			1330		084	4.0	108	675.8	950.7	2769
			1332					6 .	.	
			1340		086	4.2	106	668.0	949.2	2900
			1350		094	4.3	108	660.1	947.9	3029
			1400		088	4.1	111	652.2	946.5	3159
			1410		079	4.1	91	644.7	946.0	3289
			1420		083	4.2	114	637.1	945.4	3419
			1427					.	.	3535
			1430		082	4.1	117	629.3	945.0	3550
			1440		086	4.2	108	621.5	944.1	3679
			1450		083	3.7	101	614.6	943.5	3810
			1500		071	3.7	104	608.0	943.9	3939

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
✓		✓	✓				Winds beginning to pick up. all 12 channels working
							Passing south of red/black buoy. (coarse plots us N of buoy)
							c/ to 4.6 firing rate
							very hard bottom
							light rain
							ch. 4 out
							off Northport 1133 - magnetics go quiet (10-20γ anom.)
							Dark clouds astern ch 4 out
							- noise on EPC - from Power station off Northport??
							↓ rain seems to have stopped
							tug & barge off to port
							lobster boat abrest - warning ds of buoys. ch 4 back
							many lobster pots about
							c/adj for buoy
							White caps around, seas picking up. ch 4 back on

10 June 1981

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS °T COURSE	Kts SPD	W.D. (ft)	NAVIGATION S2	S3	Ake
10	06	81	1510		105	3.7	98	26601.2	43942.6	40641
			1520		96	3.6	91	26594.2	940.8	41822
			1530		82	3.4		587.8	940.4	43000
			1540		76	3.6	82	581.5	940.4	44417
			1550		81	3.6	87	574.9	940.1	45335
			1600		82	3.8	102	567.9	939.4	46652
			1604							
			1617							

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							C/ shooting to 5.1 sec.
							} cross line 2.
							EOL #6 SP 4562.
							slow to haul gear.
							All gear aboard, head for Port Jefferson

11 June 1981

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	JA WD.	NAVIGATION S2	NAVIGATION S3	
11	06	81	0730							
			0750					26613.2	43914.2	
			0755							
			0815					619.0	936.2	
			0825					596.8	938.7	
			0830					587.4	940.5	
			0834					584.2	940.4	
			0838					581.9	940.3	
			0840					580.7	940.2	
			0847					576.1	939.8	
			0852					572.6	939.5	
			0854					570.6	939.4	
			0856					569.7	939.4	
			085610		81	4.8		568.2	939.4	4653
			0900					565.1	939.2	4700
			0904		80	4.5				4740
			0910		86	3.9	134	557.8	938.8	4829
			0913					~~557.8~~	~~938.8~~	
			0915					553.7	938.8	
			0920		76	4.9	134	549.3	938.2	4967
			0925					545.0	937.7	
			0930		89	4.5	133	540.6	936.8	5107
			0935					536.7	936.0	
			0940		88	3.9	133	532.9	935.2	5246
			0945					528.1	934.5	
			0950		92	4.9	130	523.6	933.8	5384

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
✓		✓	✓				Arrive Veecho, Port Jefferson
							Dockside at Port Jeff Pier ~50 ft from end of Pier.
							Depart Port Jefferson — Winds W-NW 10-20 predicted to go light and variable this afternoon
							Arrive - slow to deploy gear following sea ~ 1 ft.
							Streamers, gun over - testing channel 4, 11 out
							maggie out
							channel 11 back satellite clock on.
							SOL 6A 120 m streamer 15 in^3 water gun
							22.5 m offset (15 msec)
							Streamer, gun at 10 ft.
							Fathometer, maggie.
							Continuation of Line 6 along N. Shore Long Island
							5.1 sec shooting
							c/ shooting to 4.3 sec.
							c/ paper speed on EPC to 150 lines/in - has previously been printing 75 lines/in.
							Visibility ahead - difficult due to sun.

11 June 1981

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	fr. DE 719B. ft W.D.	NAVIGATION S2	NAVIGATION S3	Shot Pt No.
11	06	81	0955					26519.0	43933.0	
			1000		86	5.0		514.1	932.2	5525
			1006					509.2	931.6	[illegible]
			1010		85	4.3	127	505.8	931.2	5654
			1015					501.8	930.7	
			1020		84	4.6	133	497.6	930.1	5802
			1025					493.1	929.0	
			1030		92	4.6	128	26488.5	928.2	5942
			1035					483.8	927.5	
			1040		88	5.0	121	478.7	926.8	6081
			1045					473.0	926.0	
			1050		88	5.0	116	469.2	925.4	6220
			1055							
			1100		84	5.1		459.7	924.2	6331
			1103							6379
			1110		92	5.1	110	449.8	922.4	6476
			1115					445.0	921.9	*
			1120		88	5.4		439.8	921.2	6624
			1121							6639
			1126					35.5	20.7	
			1129					33.0	20.4	
			1131					31.5	20.2	
			1135					28.4	20.2	
			1138					26.0	19.9	
			1140					24.4	19.5	
			1145					21.6	19.2	
			1152					17.5	19.1	
			1155							
			11 1156:33							[illegible]
			1157					14.5	18.8	

OPS							COMMENTS AND OBSERVATIONS
12 KHz ✓	3.5 KHz	CSP ✓	MAG ✓	GRAV.	SONO.	STA.	
							~1 min down tape & firing problems ch 4 still out.
							c/ 4 sec shooting.
							Slow to haul in water gun - no break being recorded.
							Gun back in water
							Start shooting - to-test

11 June 1981

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION	S2	S3	
11	06	81	1158.30					26412.9	43918.6	6640
			1200		86	4.2	74	411.4	918.3	6663
			1210		85	4.5	69	403.2	917.6	6810
			1220		81	4.5		394.8	916.9	6960
			1221					.	.	6978
			1230		93	4.4		386.3	915.3	7100
			1240		85	4.3	54	378.1	914.3	7239
			1250		85	4.3	55	370.0	913.6	7378
			1253					66.	.	
			1254					366.8	913.6	~~[illegible]~~
			1300		60	4.2	60	363.3	914.5	7517
			1310		61	4.9	53	356.2	915.9	7656
			1320		56	5.0	48	349.0	918.0	7795
			1330		54	4.6		342.8	920.5	7935
			1340		56	4.6		336.6	922.8	8073
			1350		57	4.6		330.0	925.0	8212
			1400		54	4.4		323.7	927.4	8352
			1412		60	4.4		316.0	929.8	8519
			1420		56	4.4		311.0	931.5	8630
			1430		52	4.8		304.9	933.8	8770
			1440		56	4.6		26298.2	936.0	8908
			1450		58	4.6		291.3	937.8	9047
			1500		54	4.4		284.7	939.4	9186
			1510		59	4.3		278.3	940.9	9326
			1520		56	3.5		272.7	942.4	9465
			1525					.	.	9535
			1530					267.9	944.1	9595
			1540					262.8	945.8	9715
			1550		61	4.1		56.7	47.3	9835
			1558.40					51.8	48.6	9938

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
✓		✓	✓				resume line water gun shot instant good, no cross talk shooting 4.0 sec. interval
							c/ shoot ev. 4.3 sec.
							Large barge to the north
							start c/adj to -70°T - 1-2 ft seas on port quarter
							ch 4, 11 out
							Passing Horton Pt. Light seas increasing
							11, 4 still out. Winds picking up some. Whitecaps all about
							c/ 5 sec shooting.
							ch 11, 4 still out
							EOL #6A

11 June 1981

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION
11	06	81	1615				
			1830				

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							All gear aboard, seas 3-4 feet & white caps all over.
							Arrive Noank, fuel dock.
							END OF CRUISE
							1930 - Nichols, Jennings, Hutchinson return to W.H. via Van.
							12 June 1981 - P. Loud, S. Chalker return to W.H. w/ Necho.

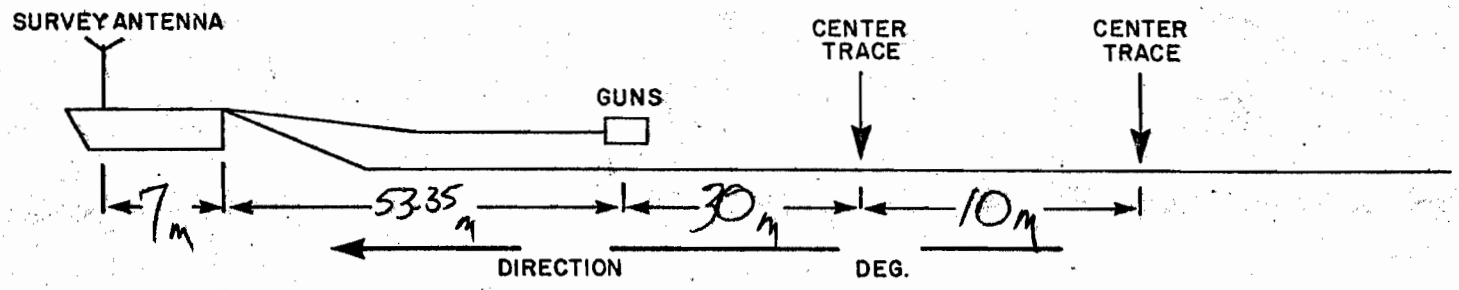
U.S. GEOLOGICAL SURVEY

OBSERVER'S DAILY REPORT

VESSEL Neecho SYSTEM TYPE DFS V DATE 6/3/81

OFFSET 30 meters
LINE NO. 1 DIR 265 DEG.
PROSPECT L.I. Sound
LOCATION Conn.
SAMPLE RATE 1 MS. BPI 1600
RECORD LENGTH 2 SEC.

PRIME NAVIGATION Loran C
CABLE TYPE SEI 10meter/12 channel
TRACE INT. 10 m
SHOT INT. 10 m
WEATHER B-2
OPERATOR Nichols



RECORD				REPRODUCE				
INPUT GAIN (500 OHM IMP)	FILTERS		MAN / IFP	FILTERS		TRIP SENSE	INITIAL GAIN	MODE
	LO/SLOPE	HI		LO	HI			
	18	256	IFP	8	256 Hz	2	4	AGC

DECK NO.	REEL NO.	CONSTANTS			FILE NO.		SP NO.		TIME	
		DAY NO.	LINE NO.	DIR. DEG.	FROM	TO	FROM	TO	START	FINISH
2	1	154	0001	265	0001	387			10:50	11:16
1	2				388	766			11:16	11:41
2	3				767	1150			11:41	12:06
1	4				1151	531			12:06	12:32
2	5				1532	1930			12:32	12:58
1	6				1931	2298			12:58	13:23
2	7				2299	2683			13:23	13:49
1	8				2684	3064			13:49	14:13
2	9				3065	3347			14:14	14:39
1	10				3348	3636			14:39	15:05
2	11				3637	4210			15:05	15:30
1	12				4211	4592			15:30	15:55
2	13				4593	4975			15:55	16:21
1	14				4976	5356	File	6099	16:21	16:46
2	15				5357	5738	IS LAST Good		16:46	17:12
1	16				5739	6100	DATA	File!	17:12	17:36

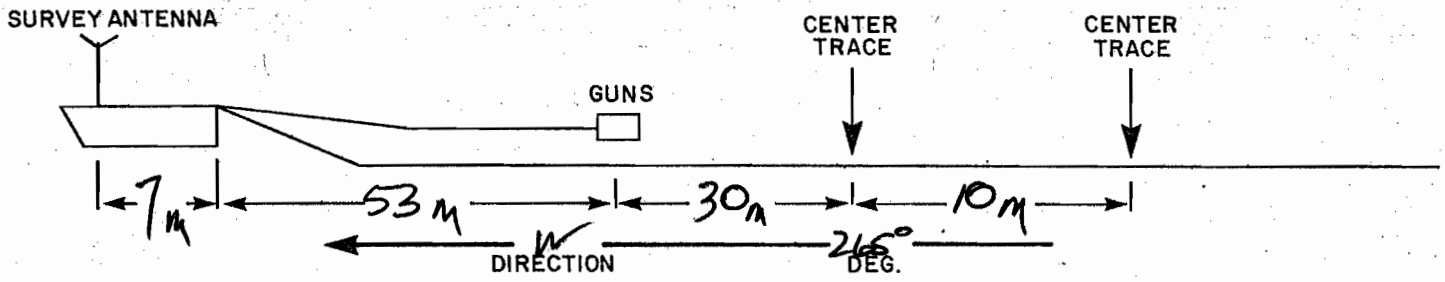
U.S. GEOLOGICAL SURVEY

OBSERVER'S DAILY REPORT

VESSEL R/V Neecho SYSTEM TYPE DFS V DATE 6/4/81

OFFSET 30 METER
LINE NO. 1 cont. DIR. 25° DEG.
PROSPECT L.I. SOUND
LOCATION Branford Conn.
SAMPLE RATE 1 MS. BPI 1600
RECORD LENGTH 2 SEC.

PRIME NAVIGATION LORAN C
CABLE TYPE SEI 12 CHANNEL
TRACE INT. 10 M
SHOT INT. 10 M
WEATHER B-2 FOG
OPERATOR Nichols



RECORD				REPRODUCE				
INPUT GAIN (500 OHM IMP)	FILTERS LO/SLOPE	FILTERS HI	MAN / IFP	FILTERS LO	FILTERS HI	TRIP SENSE	INITIAL GAIN	MODE
36 DB	8/18	36	IFP	8	256	2	4	AGC

DECK NO.	REEL NO.	CONSTANTS DAY NO.	CONSTANTS LINE NO.	CONSTANTS DIR. DEG.	FILE NO. FROM	FILE NO. TO	SP NO. FROM	SP NO. TO	TIME START	TIME FINISH
1	17	155	0001	265	6101	6481			11:12	11:37
2	18	Notes * TRACE #5 & 10 Are			6482	6869			11:37	12:03
1	19	Intermittingly Noisy.			6870	7244			12:03	12:28
2	20	MISSED SP #7245 &			7245	7627			12:28	12:54
1	21	#7246.			7627	7818			12:54	13:07
		END LINE								
		40 in³ Air Gun with WAVE SHAPE.								

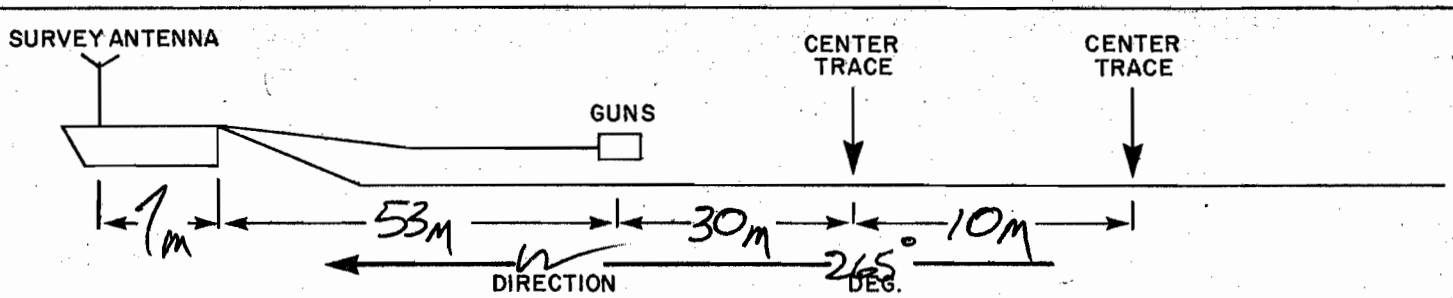
U.S. GEOLOGICAL SURVEY

OBSERVER'S DAILY REPORT

VESSEL R/V Meecho SYSTEM TYPE DFS V DATE 6/4/81

OFFSET 30 meter
LINE NO. 1A DIR 265° DEG.
PROSPECT L.I. Sound
LOCATION NEAR SHORE
SAMPLE RATE 1 MS. BPI 1600
RECORD LENGTH 2 SEC.

PRIME NAVIGATION LORAN C
CABLE TYPE SEI 12 CHANNEL
TRACE INT. 10 M
SHOT INT. 10 M
WEATHER 3-3
OPERATOR Nichols



RECORD				REPRODUCE				
INPUT GAIN (500 OHM IMP)	FILTERS LO/SLOPE	FILTERS HI	MAN / IFP	FILTERS LO	FILTERS HI	TRIP SENSE	INITIAL GAIN	MODE
36 DB	8/18	36	IFP	8	256 A2	2	4	AGC

DECK NO.	REEL NO.	CONSTANTS DAY NO.	CONSTANTS LINE NO.	CONSTANTS DIR. DEG.	FILE NO. FROM	FILE NO. TO	SP NO. FROM	SP NO. TO	TIME START	TIME FINISH
2	22	155	000/A	265	0001	383			14:12	14:37
1	23				384	763			14:37	15:02
2	24				764	676			15:02	15:10

No WAVE SHAPE ON 40in³ AIR GUN

END LINE WITH AIR GUN.

DATA STARTS ON FILE #5.

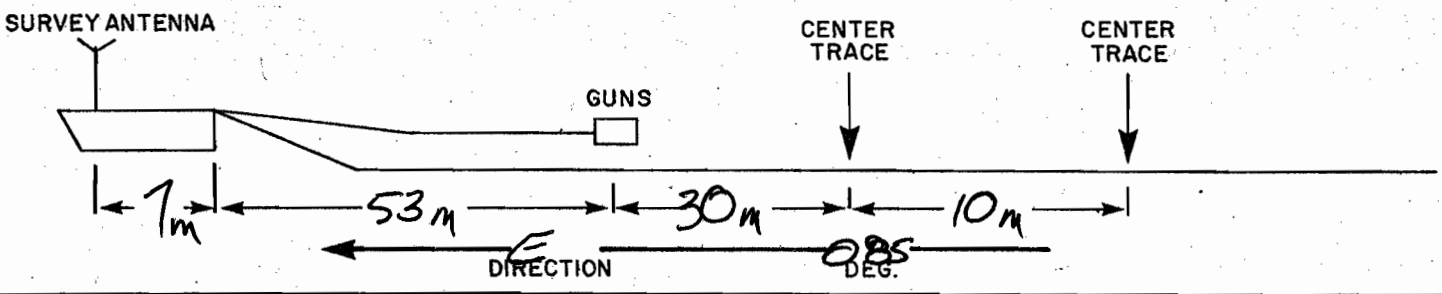
U.S. GEOLOGICAL SURVEY

OBSERVER'S DAILY REPORT

VESSEL Neecho SYSTEM TYPE DFS V DATE 6/4/81

OFFSET 30m
LINE NO. 1B DIR. 085 DEG.
PROSPECT L.I. SOUND
LOCATION NEAR SHORE
SAMPLE RATE 1 MS. BPI 1600
RECORD LENGTH 2 SEC.

PRIME NAVIGATION LORAN C
CABLE TYPE SEI 12 CHANNEL
TRACE INT. 10 meter
SHOT INT. 10 metre
WEATHER B-2 - Good
OPERATOR Michels



RECORD				REPRODUCE				
INPUT GAIN (500 OHM IMP)	FILTERS LO/SLOPE	FILTERS HI	MAN / IFP	FILTERS LO	FILTERS HI	TRIP SENSE	INITIAL GAIN	MODE
36 DB	8/18	36	IFP	8	256 ±2	2	2	AGC

DECK NO.	REEL NO.	CONSTANTS DAY NO.	CONSTANTS LINE NO.	CONSTANTS DIR. DEG.	FILE NO. FROM	FILE NO. TO	SP NO. FROM	SP NO. TO	TIME START	TIME FINISH
1	25	155	0001B	085	0001	383			15:50	16:14
2	26	File #5 is First Data File.			384	764			16:14	16:39
					End Line 1B					
		Shooting 15cu in Water Gun.								

3

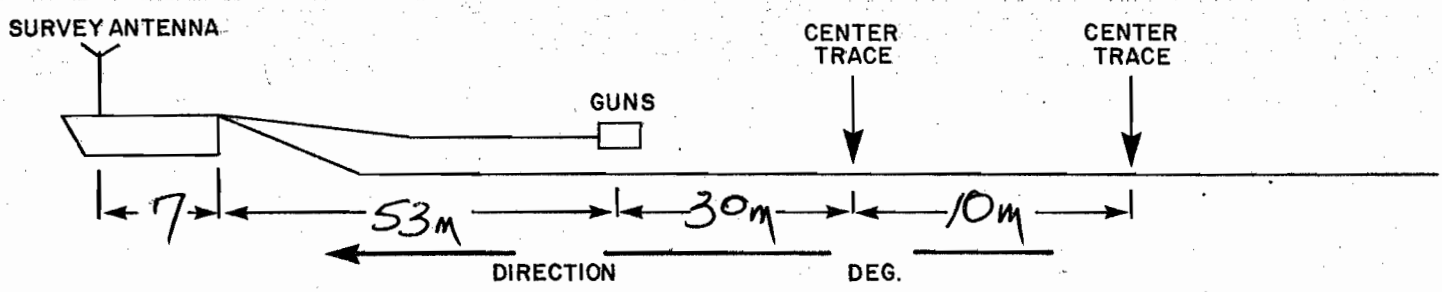
U.S. GEOLOGICAL SURVEY

OBSERVER'S DAILY REPORT

VESSEL Neecho SYSTEM TYPE ~~DFS V~~ DATE 6/5/81

OFFSET 30 M
LINE NO. 2 DIR. 0000° DEG.
PROSPECT LI. Sound
LOCATION STO N L.I. Sound Side
SAMPLE RATE 1 MS. BPI 1600
RECORD LENGTH 2 SEC.

PRIME NAVIGATION Loran C
CABLE TYPE SEI 12 channel
TRACE INT. 10 M
SHOT INT. 10 M
WEATHER B-1
OPERATOR Nichols



RECORD				REPRODUCE				
INPUT GAIN (500 OHM IMP)	FILTERS		MAN / IFP	FILTERS		TRIP SENSE	INITIAL GAIN	MODE
	LO/SLOPE	HI		LO	HI			
36+6 dB	8/18	36	IFP	18	256	2	2	AGC

DECK NO.	REEL NO.	CONSTANTS			FILE NO.		SP NO.		TIME	
		DAY NO.	LINE NO.	DIR. DEG.	FROM	TO	FROM	TO	START	FINISH
1	27	154	0002	North	0001	381			14:50	15:22
2	28	Near Trace #11			382	764			15:22	15:54
1	29				765	1146			15:54	16:26
2	30				1147	1527			16:26	16:58
1	31				1528	1906			16:58	17:29
2	32				1907	1945			17:29	17:32

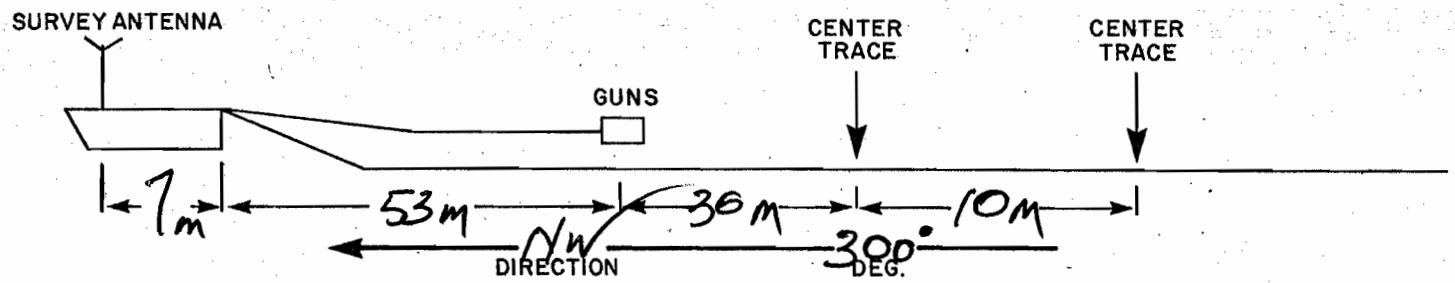
U.S. GEOLOGICAL SURVEY

OBSERVER'S DAILY REPORT

VESSEL Neecho SYSTEM TYPE DFSI DATE 6/6/81

OFFSET 30 m
LINE NO. 3 DIR. NW DEG.
PROSPECT L.I. SOUND
LOCATION
SAMPLE RATE 1 MS. BPI 1600
RECORD LENGTH 2 SEC.

PRIME NAVIGATION LORAN C
CABLE TYPE SEI 12 CHANNEL
TRACE INT. 10 m
SHOT INT. 10 m
WEATHER B-3
OPERATOR Nichols



RECORD				REPRODUCE				
INPUT GAIN (500 OHM IMP)	FILTERS LO/SLOPE	FILTERS HI	MAN / (FP)	FILTERS LO	FILTERS HI	TRIP SENSE	INITIAL GAIN	MODE
3676	8/18	36		08	256	2	2	AGC

DECK NO.	REEL NO.	CONSTANTS DAY NO.	CONSTANTS LINE NO.	CONSTANTS DIR. DEG.	FILE NO. FROM	FILE NO. TO	SP NO. FROM	SP NO. TO	TIME START	TIME FINISH
1	33	157	0003	300	001	383	[illegible]		10:54	11:27
2	34				384	768			11:27	12:01
1	35	TRACE #3 Noisy			769	1142			12:01	12:29
2	36	12 Noisy-Int. Dead			1143	1524			12:29	13:01
		#10 Int. Noisy			1525	1672			13:01	13:14
		#5 Intermittent								
		#3 Int.			END Line #3					

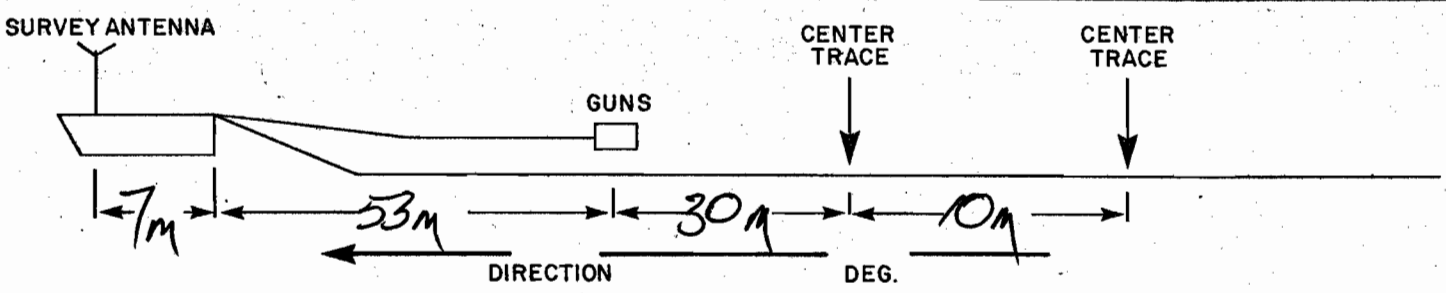
U.S. GEOLOGICAL SURVEY

OBSERVER'S DAILY REPORT

VESSEL Meecho SYSTEM TYPE DFS V DATE 6/6/81

OFFSET 30 meters
LINE NO. #4 DIR. NW DEG.
PROSPECT L.I. Sound
LOCATION
SAMPLE RATE 1 MS. BPI 1600
RECORD LENGTH 2 SEC.

PRIME NAVIGATION Loran C
CABLE TYPE SEI 12 CHANNEL
TRACE INT. 10 M
SHOT INT. 10 M
WEATHER B-3
OPERATOR Nichols



RECORD				REPRODUCE				
INPUT GAIN (500 OHM IMP)	FILTERS		MAN / IFP	FILTERS		TRIP SENSE	INITIAL GAIN	MODE
	LO/SLOPE	HI		LO	HI			
36+6 dB	8/18	36		8	256 Hz	2	3	AGC

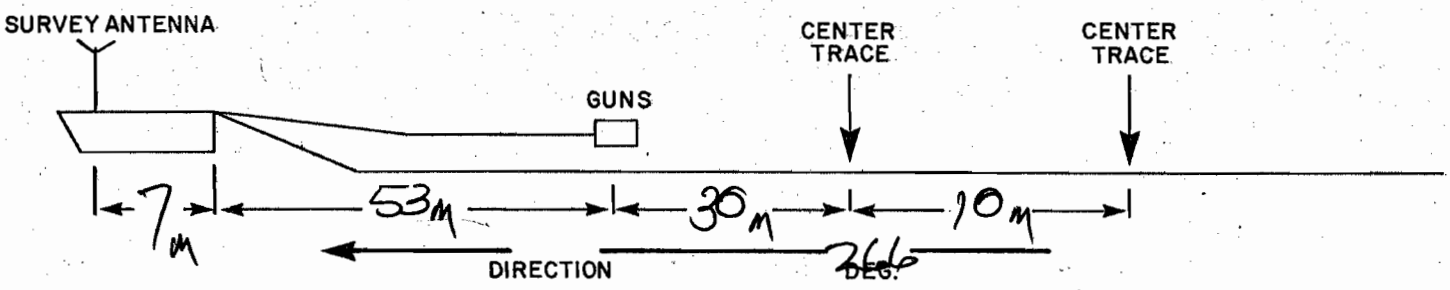
DECK NO.	REEL NO.	CONSTANTS			FILE NO.		SP NO.		TIME	
		DAY NO.	LINE NO.	DIR. DEG.	FROM	TO	FROM	TO	START	FINISH
1	37	157	0004	160	0001	381			13:21	13:52
2	38				382	763			13:52	14:20
	39				764	893			14:20	14:35
		TRACES 3-5-10-12								
		ARE Intermittent.				End Line #4				

U.S. GEOLOGICAL SURVEY

OBSERVER'S DAILY REPORT

VESSEL Neecho SYSTEM TYPE DFS II DATE 6/8/84

OFFSET 30 m — PRIME NAVIGATION LORAN C
LINE NO. 5 DIR. ___ DEG. — CABLE TYPE SEI 12 CHANNEL
PROSPECT LI. Sound — TRACE INT. 10 m
LOCATION ___ — SHOT INT. 10 m
SAMPLE RATE 1 MS. BPI 1600 — WEATHER B-1
RECORD LENGTH 2 SEC. — OPERATOR Nichols



Notch Out RECORD Low Cut Out — REPRODUCE

INPUT GAIN (500 OHM IMP)	FILTERS LO/SLOPE	FILTERS HI	MAN / (IFP)	FILTERS LO	FILTERS HI	TRIP SENSE	INITIAL GAIN	MODE
36+6	8/18	36 ~~256~~		8	256	2	3	AGC

DECK NO.	REEL NO.	CONSTANTS DAY NO.	CONSTANTS LINE NO.	CONSTANTS DIR. DEG.	FILE NO. FROM	FILE NO. TO	SP NO. FROM	SP NO. TO	TIME START	TIME FINISH
2	40	159	0005	266	0001	384			0956	10:29
1	41				385	767			10:29	11:00
2	42	TRACE # 3-5-10-12			768	1148			11:00	11:32
1	43	Intermittently Bad.			1149	1538			11:37	12:09
2	44	TRACE #1 HAS Inter-			1539	?			12:08	12:36
1	45	mittent Noise Spike.				2295				13:08
2	46				2286	2677			13:08	13:40
1	47				2678	3057			13:40	14:06
2	48				3058	3492			14:06	14:35
1	49				3493	3824			14:35	14:58
2	50				3825	4207			14:58	15:23
1	51	LS 4498/ Circle due			4208	4498			15:23	15:45
		[illegible]			[illegible]	[illegible]			[illegible]	[illegible]
2	[illegible]				[illegible]	[illegible]			[illegible]	[illegible]
					[illegible]					

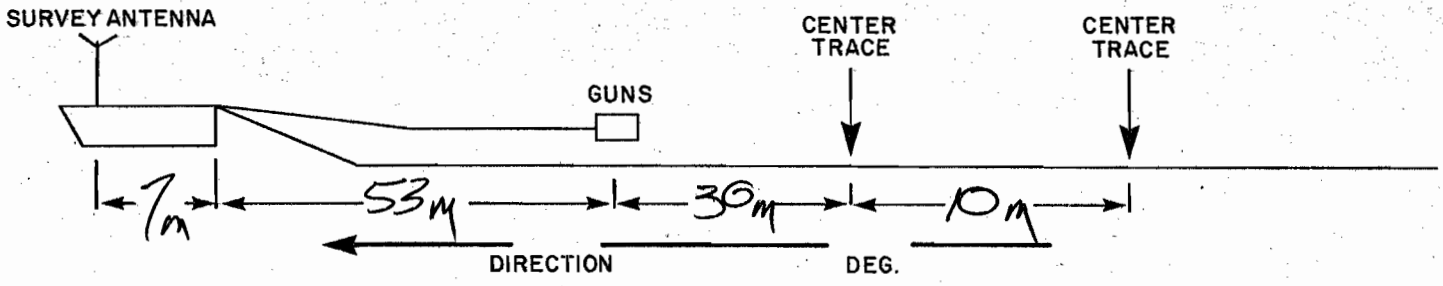
U.S. GEOLOGICAL SURVEY

OBSERVER'S DAILY REPORT

VESSEL Neecho SYSTEM TYPE DFS V DATE 6/10/81

OFFSET [redacted] 22m
LINE NO. 6 DIR. 078° DEG.
PROSPECT L.I. SOUND
LOCATION
SAMPLE RATE 1 MS. BPI 1600
RECORD LENGTH 2 SEC.

PRIME NAVIGATION LORAN C
CABLE TYPE SEL 12 channel
TRACE INT. 10m
SHOT INT. 10m
WEATHER B-1
OPERATOR Nichols



RECORD				REPRODUCE				
INPUT GAIN (500 OHM IMP)	FILTERS		MAN / (FP)	FILTERS		TRIP SENSE	INITIAL GAIN	MODE
	LO/SLOPE	HI		LO	HI			
48+12 ~~36+12~~ dB	8/18	36		8	256	2	3	AGC

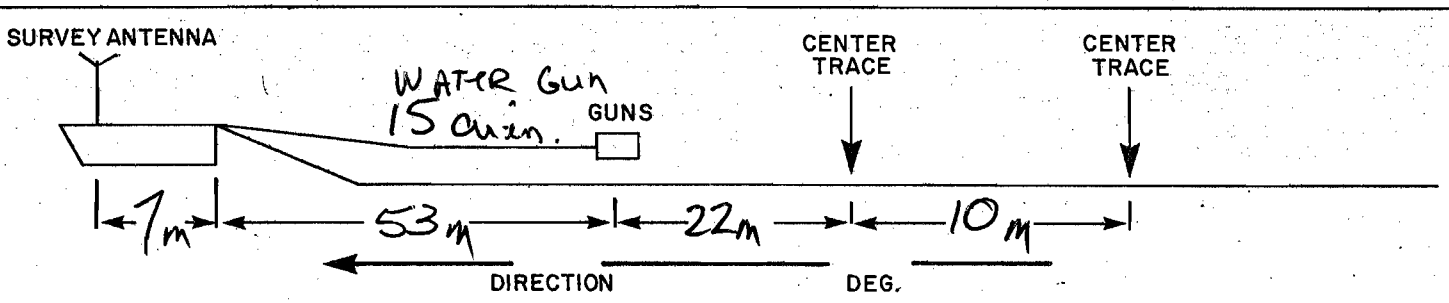
DECK NO.	REEL NO.	CONSTANTS			FILE NO.		SP NO.		TIME	
		DAY NO.	LINE NO.	DIR. DEG.	FROM	TO	FROM	TO	START	FINISH
1	53	161	0006	078	001	382			10:00	10:26
2	54				383	765			10:26	10:57
1	55				766	1144			10:57	11:25
2	56				1145	1528			11:25	11:54
1	57				1528	1905			11:54	12:23
2	58				1906	2288			12:23	12:53
1	59				2289	2669			12:53	13:22
2	60				2670	3057			13:22	13:51
1	61				3058	3440			13:51	14:20
2	62				3441	3818			14:20	14:51
1	63				3819	4202			14:51	15:22
2	64				4203	4584			15:22	15:54
1	65				4585	4964			15:54	16:00

U.S. GEOLOGICAL SURVEY

OBSERVER'S DAILY REPORT

VESSEL Neecho SYSTEM TYPE DFS V DATE 6/11/81

OFFSET 22 meters PRIME NAVIGATION Loran C
LINE NO. 6A DIR. ____ DEG. CABLE TYPE SEI 12 Channel 120m
PROSPECT L.I. Sound TRACE INT. 10m
LOCATION ____ SHOT INT. 10m
SAMPLE RATE 2 MS. BPI 1600 WEATHER B-3
RECORD LENGTH 2 SEC. OPERATOR Nichols



RECORD				REPRODUCE				
INPUT GAIN (500 OHM IMP)	FILTERS LO/SLOPE	FILTERS HI	MAN / IFP	FILTERS LO	FILTERS HI	TRIP SENSE	INITIAL GAIN	MODE
48+12	8/18	36		8	256	2	2	AGC

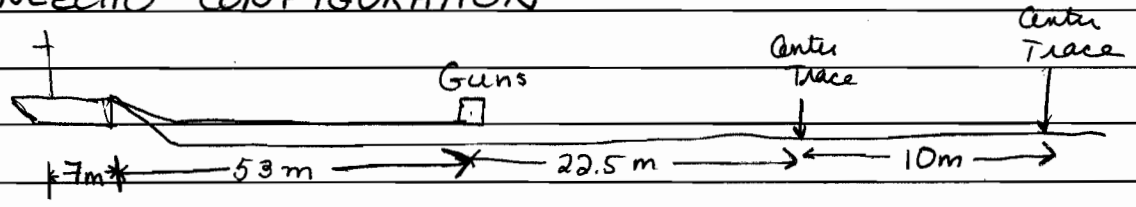
DECK NO.	REEL NO.	CONSTANTS DAY NO.	CONSTANTS LINE NO.	CONSTANTS DIR. DEG.	FILE NO. FROM	FILE NO. TO	SP NO. FROM	SP NO. TO	TIME START	TIME FINISH
1	65	162	0006A		4653	4966			0856	09:20
2	66				4967	5350			09:20	09:47
1	67				5351	5731			09:47	10:15
2	68				5732	6115			10:15	10:42
1	69				6116	6503			10:42	11:12
2	70				6504	6640			11:12	11:21
		Cut Line / phone trouble			[illegible]					
		Resume Line			6641	6882			11:59	12:15
1	71				6883	7263			12:15	12:42
2	72				7264	7646			12:42	13:09
1	73				7647	8026			13:09	13:36
2	74				8027	8409			13:36	14:04
1	75				8410	8791			14:04	14:31
2	76				8792	9175			14:31	14:59
1	77				9176	9555			14:59	15:26
[illegible]	[illegible]				[illegible]	[illegible]			[illegible]	[illegible]

End Survey

ft x .3048 = m

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS

NEECHO CONFIGURATION



50 Lead in: 50ft. 45' fr. stern of Neecho
164 Stretch section: 164'
8 Preamp 8'
222
67.67 2 sections, preamps at front of each section
72.67 6 channels/section

Fairfield Industries Streamer
Seismic Systems, Inc Water Gun 15 in^3
BOLT Air gun 40 in^3
DFSV Texas Instruments Control Module
" " Analog Module
Fairfield Industries Interface
Syntron, Inc command console CC-801 (bird control)
2 Tex. Inst. DFSV Tape Transports
Mountain Systems Extended Header Interface Box
2 Power Supplies (Lambda Model LM G12-RCS) 12V power for DFSV and 2 tape drives
Lambda Electronics Corp Melville, L.I.

Varian V-75 Proton magnetometer
Raytheon DE 719B fathometer
EPC 3200 graphic recorder (near Trace monitor)
Kinemetrics satellite clock. Model 468DC
BNC box model 7010 (shot control) Digital Delay Generator

SIE, INC (Houston TX) OSCILLOGRAPH MODEL R-10A

Streamer monitor

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION
				LINE NO.	SHOT POINT		CHANNEL OUT 1 2 3 4 5 6 7 8 9 10 11 12 / CHANNEL WEAK 1 2 3 4 5 6 7 8 9 10 11 12
03	06	81	1051	1		8	✓
			1051		13		✓
			1100		151		✓
			1110		301		✓
			1130		611		✓
			1140		761		✓
			1150		901		✓
			1150		902		✓
			1200		1051		✓
			1200		1052		✓
			1220		1350		✓
			1220		1373		
			1230		1509		
			1240		1679		
			1250		1831		
			1250		1836		
			1250		1837		
			1302		1985		
			1325		2307		
			1330		2418		
			1411		3034		✓
			1423		3182		✓
			1440		3456		✓
			1445		3557		
			1501		3764		
			1540		4368		✓
			1605		4715		
			1621		4991	✓	✓

Streamer monitor

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
							COMMENT
							noise on 12
							"
							"
							1420 - increase engine speed from 4.0 to 4.6
							noise on 12
							noise on 12

Streamer monitor

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION CHANNELS OUT 1 2 3 4 5 6 7 8 9 10 11 12	CHANNELS WEAK 1 2 3 4 5 6 7 8 9 10 11 12
			LINE NO		SHOT POINT			
03	06	81	1636	1cont	5168		✓ ✓ .	.
			1700		5569		✓ .	.
			1715		5815		✓ .	.
			1734		6041		✓ .	.
04	06	81	1112		6101		✓ ✓ .	.
			1115		6111		✓ ✓ .	.
			1116		6133		✓ ✓ .	.
			1121		6249		✓ .	.
			1140		6522		✓ .	. ✓
			1215		7083		✓ ✓ .	.
			1220		7120		✓ .	. ✓
			1225		7198		.	. ✓ ✓
			1225		7315		.	. ✓ ✓
			1226		7325		.	. ✓
			1226		7326		.	.
			1250		7550		.	. ✓ ✓
			1302		7752		✓ .	. ✓
							.	.
			1412	1A		5	.	. ✓
			1420		118		✓ ✓ .	.
			1441		442		✓ .	. ✓
			1452		608		✓ .	. ✓
			1458		677		✓ .	. ✓
							.	.
			1549	1B		8	✓ .	. ✓
			1652		47		✓ ✓ .	.
			1601		193		✓ ✓ ✓ .	.
			1608		289		✓ ✓ ✓ .	.

streamer monitor

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							COMMENT
							many course changes to avoid lobster pots
							"
							noise on 12
							noise on 12
							"
							"
							"
							noise on 8
							no first break
							"
							"
							"

Streamer monitor

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION LINE NO.	NAVIGATION SHOT POINT	CHANNELS OUT 1	2	3	4	5	6	7	8	9	10	11	12	CHANNELS WEAK 1	2	3	4	5	6	7	8	9	10	11	12
04	06	81	1608	18 cont.	292								✓							.								.	✓	✓
			1620		466								✓							✓								.	✓	
																				.								.		
																				.								.		
05	06	81	1506	2	185															.								.	✓	
			1508		211															✓								.	✓	
			1510		244															✓								.	✓	
			1532		503													✓		.								.		
			1602		855													✓		✓								.		
			1602		856													✓		✓								.		
			1627		1160															.								.	✓	✓
			1628		1178															.								.	✓	
			1640		1316															.								.	✓	
			1650		1446													✓		✓								.		
			1657		1536								✓							.								.	✓	
			1715		1720								✓							✓								.	✓	
																				.								.		
06	06	81	1054	3	11						✓									✓								.		
			1101		86						✓							✓		.								.		
			1131		437						✓							✓		✓								.		
			1149		654						✓							✓		.								.		
			1223		1076						✓		✓							.								.	✓	
			1231		1168						✓		✓					✓		✓								.		
			1240		1272						✓									✓								.	✓	
			1241		1281						✓									✓								.	✓	
			1258		1467						✓									✓								.	✓	
																				.								.		
																				.								.		
																				.								.		

Streamer monitor

OPS: 12 KHz	3.5 KHz	SP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
							COMMENT
							no first break
							"
							Preamps exchanged
							noise on 7,8
							noise on 12
							noise on 3 Exchange 2 10m sections
							"
							"
							noise on 3
							"
							noise on 1

Streamer monitor

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION CHANNELS OUT 1 2 3 4 5 6 7 8 9 10 11 12	CHANNELS WEAK 1 2 3 4 5 6 7 8 9 10 11 12
			LINE	SHOT				
			NO.	POINT				
06	06	81	1330	4	118		✓	✓ ✓
			1352		409		✓ ✓ ✓	
			1401		495		✓ ✓	✓
			1430		827		✓	✓ ✓
08	06	81	0957	5	6		✓ ✓ ✓ ✓	
			1009		33		✓ ✓ ✓	✓
			1010		48		✓ ✓ ✓ ✓	
			1006		103		✓ ✓	✓ ✓
			1020		292		✓ ✓	✓ ✓ ✓
			1049		629		✓ ✓	✓
			1058		763		✓	✓
			1135		1180		✓ ✓	
			1212		1629		✓ ✓ ✓	
			1309		2305		✓ ✓ ✓	
			1322		2476		✓ ✓	✓
			1343		2706		✓ ✓ ✓ ✓	
			1351		2836		✓ ✓ ✓ ✓	
			1402		2990		✓ ✓ ✓	
			1450		3712		✓ ✓ ✓	✓
			1450		3713		✓ ✓ ✓	✓
			1504		3915		✓ ✓ ✓	✓
			1532		4337		✓ ✓ ✓ ✓ ✓	
			1535		4397		✓ ✓ ✓ ✓ ✓	
			1537		4430		✓ ✓ ✓ ✓ ✓	
			1611		4499		✓ ✓ ✓ ✓	
			1612		4506		✓ ✓ ✓ ✓ ✓	
			1613		4516		✓ ✓ ✓ ✓	

Streamer monitor

OPS 12 KHz	OPS 3.5 KHz	OPS CSP	OPS MAG	OPS GRAV.	OPS SONO.	OPS STA.	COMMENTS AND OBSERVATIONS	
							COMMENT	
							noise on 2	
							noise on 2, ringy source.	
							noise on 1	Head tested w/out stretch section, then stretch section back in
							noise on 1	
							noise on 1	
							"	
							"	
							noise on 6	
							increase speed to 5.0 kts.	
							end of circle.	slow speed to 4.0 kts
							noise on 1	

Streamer monitor

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION CHANNELS OUT 1 2 3 4 5 6 7 8 9 10 11 12	NAVIGATION CHANNELS WEAK 1 2 3 4 5 6 7 8 9 10 11 12
			LINE NO	SHOT POINT				
08	06	81	1615	5 cont.	4545		✓ ✓ ✓ ✓	✓
			1619		4589		✓ ✓ ✓ ✓	
			1620		4611		✓ ✓ ✓ ✓	
			1630		4727		✓ ✓ ✓ ✓	
			1632		4760		✓ ✓✓ ✓ ✓	
				6		4		
					1119			
					2461			
					4627			
					6388			
					11011		✓	
					11099		✓	
					14999		✓	
					19180			✓
					19800			✓
					22555			✓
					23833		✓	
					26055		✓	
					28333			
					33021		✓	
					35611		✓	
					38115			
					40200		✓	
					43200			

Streamer monitor

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							COMMENT
							noise on 1
							noise on 6
							Streamer overhauled, sections put in proper order etc. in Stamford.
							Note: channel 4 in this configuration is the same as channel 10 in the old configuration

GMT				TIME ZONE	SHIPS		NAVIGATION																	
DAY	MO	YR	TIME	±	COURSE	SPD																		
				LINE NO.	SHOT POINT		CHANNELS OUT											CHANNELS LEAK							
							1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
11	06	81	0856	10	6A	4663				✓														
						4731				✓														
						5249				✓														
						5572				✓														
						5719				✓														
						5805				✓														
						5878				✓														
						6341																✓		
						6356																✓		
						6365																✓		
						6379																✓		
						6399																✓		
						6397																✓		
						6434																✓		
						6435																✓		
						6461																✓		
						6530				✓														
				<																				
						6687				✓														
						6836				✓														
						7510				✓														
						8128				✓														
						8542				✓							✓							
						9214																		
						9219																✓		
						9473				✓							✓							
						9601				✓														
						9875				✓							✓							

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
							COMMENT
							shot instant = weak ch 6 = lost after 350 msec
							" " " 1100 "
							" " " 690 "
							" " " 600 "
							" 710 "
							"
							no shot instant
							" " " 680 "
							"
							" " " 340 "
							no shot instant, no firing pulse on shot instant
							" , pulse back. chan. 6 = lost after 700 "
							" " " " " 85 "
							" " " " " 540 "
							" " " " " 940 "
							" " " " " 1100 "
							" " " " " 900 "
							stop shooting to repair hydrophone on gun →
							Good shot instant pulse.
							10 cycles/100 msec = 100 Hz noise on ch 12.
							ch 4 back on.

Line Crossing Calculations
Magnetics

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	COMMENTS AND OBSERVATIONS
							Line 1 1247 55374
							Line 2 1724 55391
							Line 2 1649 55463 oblique xing
							Line 3 1228 55432
							Line 4 1602 55444
							Line 5 1131 55422
							Line 2 1458 55709
							Line 6 1537 55717
							Line 3 1054 55436
							Line 5 1024 55457
							Line 4 1424 55448
							Line 5 1245 56383

LINE	Day	Z		LORANC		UNCORRECTED LAT/LONG		S.P. No.		Total km	Tapes
		SOL	EOL	SOL	EOL	SOL	EOL	SOL	EOL		
1	03 06 81	1050	1736	14748.1 60124.0	26537.0 44014.5	41°15.5' 72°09.0'	41°11.3' 72°51.3	1	6100	60.5	1 - 16
11	04 06 81	1112:10	1307	26537.0 44014.1	26648.0 44030.5	41° 11.3' 72°51.3'	41°10.6' 73°04.3'	6101	7818	18.3 78.4	17 - 21
1A	04 06 81	1412	1510	26598.1 44023.5	26047.1 44030.3	41°10.9' 73°01.5'	41° 10.6' 73°04 2'	1	876	8.0 86.4	22 - 24
1B	04 06 81	1549	1639.5	26644.4 44030.3	26593.5 44012.4			1	764	8.3 95.1	25 - 26
2	05 06 81	1450	1732:30	26584.1 43935.8	26630.0 44033.7	41°00.3' 73° 00.1'	41° 11.4' 73° 02.0	1	1945	21.5 116.6	27 - 32
3	06 06 81	1054	1313	26540.7 43970.8	26643.7 44023.8	41°05.7' 72°53.5'	41° 10.0' 73° 04.0'	1	1672	17.0 133.6	33 - 36
4	06 06 81	1321	1435	26646.8 44024.8	26648.4 43983.9	41°09.8' 73°04.5'	41°04.7' 73°06.0	1	893	10.1 143.7	37 - 39
5	08 06 81	0956	1651	26519.3 43967.7	26818.6 43987.3	41°05.7' 72°51.0'	41°01.1' 73° 27.1'	1	4970	54.1 197.8	40 - 52
6	10 06 81	1000	1600	26839.7 43963.9	26567.9 43939.4	40°57.9° 73° 30.8'	41° 01.1' 72 57.9'	1	4652	45.9 243.7	53 - 65
6A	11 06 81	0956:10	1558:40	26568.2 43939.4	26251.8 43948.6	41°01.1' 72°57.9'	41°09.7' 73°19.4'	4653	9938	57.3 301	66 - 78