LEG 1 JULY 80
LEG 2 SEPT-OCT 80

CRUISE LOG

R/V NEECHO

WESTERN RHODE ISLAND SOUND

UNIBOOM SEISMICS
3.5 kHz SUBBOTTOM
SIDE-SCAN SONAR

NAVIGATION BY LORAN-C

C. O'HARA - CHIEF SCIENTIST
S. WOOD-NEEDELL - GEOLOGIST
F. JENNINGS - ELECTRONIC TECHNICIAN
P. LOVO - BOAT OPERATOR

MECH 80-1
80016
101143

CRUISE NEE-80-1

80016 sei

U.S. GEOLOGICAL SURVEY
OFFICE OF MARINE GEOLOGY
WOODS HOLE, MASS. 02543

OPS										
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	ROLL (DAY)	COMMENTS AND OBSERVATIONS		UNI. TAPE
							EPC #1	EPC #2	SSS	
							1 (10)	1 (10)	1 (10)	1
							2 (12)	2 (12)	2 (12)	2
							3 (14)	3 (14)	3 (13)	3
							4	4	4 (15)	4
										5 (13)
										6
										7 (14)
										8 (½ of tape)

ENGINE HRS

9	0642	1715
10	0650	1835
11	0640	1720
12	0900	1645
13	0630	1805
14	0700	1716
15	0700	1230

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION	
09	07	80	1213					
			1215				14376.4	43974.7
			1230				379.8	974.6
			1245				365.9	974.8
			1300				376.6	974.7
			1315				386.6	974.4
			1330				396.4	974.5
			1345				405.9	975.3
			1400				415.1	975.4
			1406				14424.2	43975.0
			1415					
			1430				433.8	974.8
		c/a	1443.44				442.1	974.9
		c/c	1453.33				441.4	980.0
			1500				435.6	980.4
			1503				433.1	980.0
			1505				431.4	979.7
			1515				422.3	979.6
		c/a	1528				409.8	980.2
		c/c	1535				409.9	985.3
			1545				418.4	985.3
			1600				431.1	984.8
			1613.16				442.0	984.7

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.
						START LINE 1a - just west of Sakonnet Point
						UNIBOOM, SIDE-SCAN, 3.5 KHz
						3.5 KHz + 7 KHz not working well -
						T1 700 out - Position?
						side-scan down
						" " " ON
						c/a con't line 1a
		C/C				EOL 1a BOL 2a
						OLD EPC DOWN DELT CHANGE
						DALK ON
						c/a con't line 2a
		C/C				EOL 2a, BOL 3a
						End line 3a call it a day

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
10	07	80	0920				14359.9	43948.5
			0935				14359.9	43938.6
			0950				14360.3	43928.9
			0955				14360.4	43928.0
			1005				14359.7	43920.8
			1020				14360.3	43909.9
			1035				14359.9	43900.1
			1050				14360.1	43890.1
			1058				14360.1	43884.8
			1105				14365.1	43885.2
			1111				14369.8	43885.4
			1120.04				14370.2	43890.5
			1120.40				14370.2	43890.9
			1122.59				14370.2	43892.3
			1135				14369.8	43899.9
			1150				14370.1	43908.9
			1156.57				14370.0	43913.3
			1159				14369.9	43914.5
			1210				14369.6	43921.6
			1220				14370.1	43928.0
			1230				14370.2	43934.5
			1235.45				14370.1	
			1245				14370.0	43944.5
			1250				14370.0	47.7
			1305				14370.1	43957.6
			1320				14369.8	43967.7
			1335				14369.9	43977.8
			1338.29				14369.8	43980.1
			1350				14378.8	43979.9

ROLL#1 555

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							START SEISMIC LINE #1 UNIBOOM + SIDE-SCAN SONAR
							SLOW DOWN - SHIP TRAFFIC
							BACK UP TO SPEED.
							c/c c/a CONTINUE LINE #1
							c/c BEGIN LINE 2 (END LINE 1)
							BEGINE CHANGE BELT ON UNIBOOM RECORDER #1
							CAUTION ON TIMES TO 1150
							COMPLETE BELT CHANGE-UNIBOOM —
							TIME CORRECTED
							BEGIN CHANGE BELT ON UNIBOOM RECORDER
							COMPLETE CHANGE RE-SYNC CLOCK-RECORD.
							BEGIN REPLACE PAPER ON SIDE SCAN SONAR RECORDER
							RESTART - RE-STOP SIDE SCAN (PEN CUTTING PAPER)
							RESTART SIDE SCAN SONAR RECORDER - CONTINUE LINE #2
							c/c CONTINUE LINE 2

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
10	07	80	1351	.30	165		14379.8	43979.9
			1405				14379.8	43972.2
			1415				14380.2	43966.4
			1420				14380.1	43963.6
			1435				14379.9	43954.8
			1436				— .	— .
			1450				14379.8	43946.2
			1505				14380.1	43937.3
			1520				14379.9	43928.4
			1535				14379.8	43919.8
			1540				14380.1	43916.9
			1545				14380.4	43913.4
			1600				14379.9	43905.1
			1615				14379.9	43896.3
			1630				14380.1	43887.5
			1634	30		c/a	14380.1	43884.9
			1645				14387.8	43885.3
			1648				14390.1	43885.0

ROLL#1 UNI #1
#1 UNI #2
LORAN SILENT 700 TAPE

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							C/C END LINE 2 BEGIN LINE 3
							BEGIN CHANGE PAPER ON UNIBOOM RECORDER #2
							RESTART UNIBOOM RECORDER #2 CONTINUE LINE 3
							SLOWED FOR SHIP
							RESUMED SPEED CONTINUE LINE 3
							DATA GAP IN SIDE SCAN
							CHANGE UNIBOOM #2 RECORDER TO 3.5 KHz
							BEGIN REPLACE PAPER AND BOT UNIBOOM #1
							RESTART UNIBOOM 1
							C/C CONTINUE LINE #3 C/a
						→	END OF LINE #3. END OF DAY'S RECORDING

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION	
11	07	80	1107	.45			14390.1	43979.3
			1119	.30			14390.1	43971.7
			1120				14390.0	
			1135				14389.9	43961.3
			1150				14389.9	43950.8
			1205				14390.4	43940.4
			1220				14390.1	43929.8
			1230				14389.8	43922.8
			1245				14389.7	43912.3
			1300				14390.0	43901.4
			1315				14390.1	43890.7
			1323		c/a		14390.0	43885.2
			1330				14395.3	43884.9
			1335	30	c/a		14399.7	43884.9
			1345				14399.9	43891.6
			1400				14399.5	43901.5
			1414	30			14400.0	43911.4
			1415				14400.0	43912.0
			1415	30			14400.0	43913.0
			1430				14400.0	43922.5
			1445				14400.0	43932.6
			1500				14400.1	43942.8
			1513					
			1514				14400.1	43953.1
			1515				14400.5	43953.1
			1517				14400.2	43952.9
			1530				14399.9	43962.0
			1532	30			14399.9	43964.2
			1545				14400.0	43972.1
			1549		c/c		14400.0	43975.5
			1553				14403.0	43975.7

TAPE #3
TD 700 TAPE
[redacted]

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA
						BEGIN LINE #4 → TD700 DOWN – FIXES RECORDED EVERY 15 MIN UNIBOOM AND SIDE SCAN SONAR
						C/A AND FISH TRAP IN LINE
						C/A ON LINE AGAIN
						C/Adjustment CONTINUE LINE 4
						END LINE 4 BEGIN LINE #5
						TD SIDE SCAN SONAR RECORDER DOWN
						SIDE SCAN SONAR ON – CONTINUE LINE 5
						END TAPE #3 BEGIN TAPE #4
						C/A FOR SAIL BOAT RACE
						BACK ON COURSE CONTINUE LINE 5
						REPLACE [redacted] BELT ON UNIBOOM EPC RECORDER #4 [redacted]
						UNIBOOM #1 RECORDER FIXED [redacted]
						C/C LINE 1A
						END OF DAY – HEAVY SEAS.

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION	
			~~0~~				~~14468.1~~	~~80.~~
12	07	80	1008				14452.4	43969.9
			1015				14447.4	43970.0
			1030				14435.8	43969.6
			1045				14423.6	43969.8
			1100				14411.5	43970.2
			1115		088		399.2	970.5
			1130				387.5	970.1
			1145				375.4	970.2
			1200				363.9	970.1
			1215				352.6	969.8
			1220				348.8	970.0
			1227 39				14348.5	43964.8
			1230		265		14350.3	43964.8
			1245				14362.7	43965.3
			1250				367.0	65.2
			1252				368.7	65.2
			1300		280		375.6	65.0
			1315				14388.0	43965.1
			1330				399.9	965.0
			1338				407.1	964.
			1340				~~411.6~~	~~65.~~
			1345				14411.6	43965.0
			1345 30					
			1400				14423.7	43964.7
			1415				435.3	43965.0

SSS #2

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA	
							TELEDYNE HYDROPHONE EPC #2
							BEGIN LINE 5a UNIBOOM REC. #1, 2 SIDE SCAN
							c/o CONTINUE LINE 5a
							c/o END LINE 5a BEGIN LINE #6
							BEGIN CHANGE BELT EPC RECORDER #1
							END CHANGE #1 CONTINUE LINE 6 BEGIN CHANGE BELT EPC #2
							END CHANGE BELT ON EPC #2 CONTINUE LINE 6
							SLOW FOR BOAT TRAFFIC
							LOST UNIBOOM RECORD
							REGAIN UNIBOOM

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
12	07	80	1430				14447.8	43964.9
			1443	c/c			14458.9	43965.0
			1445		160		14459.2	43963.4
			1450		c/c		14458.4	43959.8
			1500				14449.4	43959.9
			1515				14436.4	43960.2
			1520				14431.9	43960.2
			1522				30.2	60.1
			1528		c/c		14424.7	60.5
			1530				25.0	61.4
			1545				14424.9	43971.8
			1600				14424.9	43982.2
			1615				424.9	43992.3

ROLL 2 EPC 1
ROLL 2 EPC 2

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							c/c END LINE #6 BEGIN LINE #7
							c/c END LINE #7 BEGIN LINE #4a
							BEGIN CHANGE BELT ON EPC RECORDER #1
							END BELT CHANGE ON EPC RECORDER #1.
							END OF LINE #4a BEGIN LINE 6a
							END LINE 6a END OF DAY. off (JONES LEDGE).
							CHANGE PAPER EPC #1 (#2 → July 12)

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION	
13	07	80	0734.15				14410.2	43985.6
			0735					
			0745				14409.9	43980.2
			0800				14409.9	43967.9
			0815				14410.3	43957.2
			0830				14410.0	43946.8
			0845		16861		14409.8	43935.7
			0900				14409.9	43924.6
			0915				14409.9	43914.1
			0930				14410.0	43903.4
			0945				14409.6	43892.9
			0956		c/a		14410.3	43885.1
			1000				14413.9	43885.1
			1007		c/c		14419.9	43884.9
			1015				14420.0	43890.6
			1030				14420.2	43901.2
			1038				14420.0	43906.8
			1045				420.2	911.8
			1100				14420.0	922.0
			1115				14419.8	43932.2
			1130		35557		14420.0	43942.3
			1145				14420.3	43952.7
			1200				14420.3	43962.8
			1215				14420.1	43973.1
			1220					
			1228		c/a		14420.2	43981.9
			1230				14422.3	43982.1
			1238.30		c/c		14430.0	43981.8
			1245				14430.4	43977.3
			1250				14430.1	43973.5

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							BEGIN LINE 8 OFF R"2" BRENTON REEF.
							LOST UNIBOOM - BLEW BREAKER - CIRCUIT.
							RESET CLOCK TI SILENT 700.
							c/a CONTINUE LINE 8
							END LINE 8 BEGIN LINE 9
							⋮
							- SIDE SCAN SONAR RECORDER PROBLEM.
							BRENTON REEF
							c/a CONTINUE LINE 9.
							c/c END LINE 9 BEGIN LINE 10
							CHANGE BELT ON EPC RECORDER # 1

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
13	07	80	1251	.39	170	6.2	14430.0	43972.4
			1300				14429.9	43966.2
			1310				14429.9	43959.5
			1315				14429.4	43959.2
			1320				14430.4	43957.2
			1325				14430.7	43954.3
			1330				14429.7	43950.8
			1345				14429.5	43939.6
			1400				14429.9	43928.2
			1415				14430.3	43916.5
			1430		175		14429.8	43905.2
			1445				14429.8	43893.7
			1457		c/a		14430.2	43885.0
			1500				14432.9	43884.9
			1508		c/c		14439.8	43884.9
			1515				14440.0	43889.6
			1530				14440.7	43900.2
			1545				14439.8	43911.0
			1600				14440.0	43921.7
			1615				14440.3	43932.2
			1630				14439.9	43943.0
			1645				14439.9	43954.0
			1700				14440.1	43964.8
			1715				14440.0	43975.9
			1727				14439.7	43985.4

SSS #3

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							GRABBED POT BUOY-LINE / RELEASING POT
							KEEPING SPEED LO - BOAT TRAFFIC / POT RELEASED
							" " "
							REGAINING SPEED / CSE.
							HEAVIER SEA STATE ↓
							c/a CONTINUE LINE 10 END SSS ROLL #3 BEGIN CHANGE SSS PAPER
							RESTART SSS RECORDER CHANGE IN SEA STATE
							END LINE 10 BEGIN LINE 11
							END OF LINE 11 END OF DAY!

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION	
14	07	80					→ .	→ .
			0815				14450.8	43966.9
			0822		168	6.4	14450.1	43963.6
			0830				14450.1	43957.2
			0845				14449.9	43945.7
			0900				14450.2	43934.2
			0915				14449.8	43922.9
			0930				14450.2	43910.9
			0945				14449.9	43898.9
			1000				14449.9	43887.6
			1003.30		c/a		14449.9	43884.9
			1015		c/c		14459.9	43884.6
			1030				14460.1	43896.6
			1040				14460.2	43900.6
			1045				14460.0	43908.4
			1050.57				14460.0	43913.0
			1100				14460.0	43920.2
			1115				14460.2	43932.1
			1130				14460.0	43943.9
			1145				14459.9	55.1
			1146		c/a		14460.1	55.2
			1150.45				64.9	54.9
			1155		c/c		69.6	54.8
			1200				70.6	51.2
			1215				69.6	39.6
			1220				70.1	35.7
			1230				70.3	28.1
			1245				69.9	16.9
			1300				69.9	04.2
			1305				69.8	00.1

EPC #1 Roll #3

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO.	STA.
						STARTED LINE #12 OFFSHORE DUE TO FISH NETS AND FISHING BOAT SETTING NETS JUST S OF 14450/43973
						VERY CALM SEAS. ✓ WE W BELT EPC #1
						BEGIN LINE #12 #1: SYLVESTER PHONE #2: TELEDYNE PHONE.
						c/a CONTINUE LINE 12
						c/c END LINE 12 BEGIN LINE 7
						CHANGE PAPER ON EPC RECORDER #1.
						BEGIN TAPE ON TI. SILENT 700
						c/a CONTINUE LINE 7
						CLOCK RESET
						c/c END LINE 7 BEGIN LINE 13
						STOP SIDE SCAN SONAR RECORD TO REPLACE PEN / RESTART
						SLIGHTLY REDUCE SPEED TO IMPROVE SIDE SCAN SONAR RECORD.
						SLOWING SPEED FOR BOAT TRAFFIC

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
19	07	80	1308				14469.9	43897.4
			1315				14470.2	43892.4
			1324		cpa		14470.1	43885.1
			1330				14475.0	43884.6
			1336		c/c	5.6	14479.9	43884.9
			1345			↓	79.9	8[illegible]
			1400				79.9	905[illegible]
			1415			5.8	14478.9	43912.6
			1430				80.0	43923.2
			1445				14479.7	439[illegible]
			1500				14480.0	43945.0
			1507		c/c		79.9	950.0
			1515				14471.3	43950.5
			1518.30			7.0		
			1524				14461.1	43949.8
			1530				14456.2	43949.7
			1545				14432.3	43950.1
			1553		c/c		14434.9	43950.3
			1600				14434.9	439[illegible]
			1615				14435.2	43963.9
			1630				14434.5	43973.6
			1645				14435.0	43983.5

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							REGAINED SURVEYING SPEED.
							c/a CONTINUE LINE 13
							c/c END OF LINE 13 BEGINNING OF LINE 14
							c/c END LINE 14 BEGIN LINE 15
							START BELT & CHANGE PAPER ON EPC RECORDER #2 ROLL #3 EPC#2
							SSS RECORDER CLEANING
							COMPLETE PAPER/BELT CHANGE EPC #2
							c/c END LINE 15 BEGIN LINE 7a
							END LINE 7a END OF DAY

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION		
15	07	80							
			0948.30						
			0949.15				~~15.5~~		
			0954				14415.5	439~~88~~86.8	
			1000				15.2	83.0	
			1015				15.0	73.4	
			1022						
			1030				15.3	63.6	
			1035.49				15.4	59.8	
			1045				07.4	60.5	
			1047.30				05.1	60.2	
			1100				05.3	68.7	
			1115				04.7	79.2	
			1116.21				04.6	80.0	
			1130				14391.9	80.3	
			1132				390.0	80.1	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	ROUGH SEAS!
							MINISPARKER TEST UP WEST PASSAGE / FUEL AT WICKFORD.
							SET CLOCK UNIBOOM AND SIDE SCAN SONAR
							START LINE 8a
							CLEAN SSS RECORDER
							END LINE 8a BEGIN LINE 4a
							END LINE 4a BEGIN LINE 9a
							END LINE 9a BEGIN LINE 2a
							END LINE 2a

GMT				TIME ZONE	SHIPS		NAVIGATION
DAY	MO	YR	TIME	±	COURSE	SPD	
16	07	80					
			0945				
			1200				

G. 1

OPS							COMMENTS AND OBSERVATIONS	G. HUND L. MOUNT
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.		
							MINISPARKER ~~UNIBOOM~~ AND SIDESCAN SONAR	
							UNIBOOM OUT OF OPERATION	
							INITIAL MINISPARKER INTERFERENCE WITH SIDE SCAN	
							NO SURVEY - EQUIPMENT MALFUNCTION	
							RETURN TO ENDEAVOR DOCK, URI.	

NECH 80-1 Leg 2 Mon Sep 29, 1980

GMT				TIME ZONE	SHIPS		NAVIGATION		
DAY	MO	YR	TIME	±	COURSE	SPD			
29	09	80						14 .	43 .

UNIBOOM SEISMICS - EDO SIDE SCAN
WESTERN RHODE ISLAND SOUND
R/V NEECHO

O'HARA
JENNINGS
TIRREY
CONLEY

MON SEPT 29, 1980

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	EDT	COMMENTS AND OBSERVATIONS
								~~[illegible] 15~~ ~~[illegible]~~ LINE 16
							1342	14350.2 43949.3
							1345	
							1347.5	14347.9 43949.9
								CC to line 16
							1255	143501 439501
								on line 16
							1300	14350.4 4395 0.3
							Sea State:	Rocking & Rolling as you may be able to tell from handwriting
							1305	143504 4356.4
							1310	14350.5 43959.9
								still Lostamp ~~[illegible]~~ on unibom no record
								Rusty driving - Frank working on recorders
							1316	14 350.7 43 963.4
								poor record
							1320	14350.9 493 65.6
								14350.9 49365.6

GMT				TIME ZONE	SHIPS		NAVIGATION
DAY	MO	YR	TIME	±	COURSE	SPD	

Neecho

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	LOCAL TIME EDT	COMMENTS AND OBSERVATIONS		
							~~1324~~	[redacted]		Line 16
							1325	14350.1	4 39 68.1	
							1330	14349.1	43971.2	
							1335	143494	439 74.3	
							1340	14350.1	43977.5	
							1342	sidescan off for cleaning for few seconds (≈15 sec)		
							1346	14350.2	43981.7	
							1350	143 50.1	439 83.8	
							get ready for c/c to continue line 3A			
							1352	commence turn		EOL 16
							1352			SOL 3A cont
							1355	14348.3	43985.2	seas considerably calmer in here
							1400	143 45.1	43984.5	
							1405	143 41.5	439 85.0	
							1407	c/a line 3A con't		
								14340.0	43985.?	
							1410	14340.3	43983.3	

LOCAL

GMT DAY	GMT MO	GMT TIME	TIME ZONE ±EDT	SHIPS COURSE	SHIPS SPD	NAVIGATION		
29	09	80 1415	EDT			14341.1	43980.2	
		1416				41.9	80.2	
		1420				44.0	80.4	
		1425				48.1	79.3	
		1430				52.2	79.8	
		1433				55.1	80.1	
		1435				55.1	79.5	
		1440				54.8	76.3	
		1445				55.0	73.5	
		1450				55.1	70.6	
		1455				55.0	67.8	
		1500				54.9	64.9	
		1505				54.9	62.0	
		1509				54.9	60.0	
		1515				59.8	59.8	
		1520				63.8	60.4	
		1522				65.2	60.5	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							still on line 3A con't
							c/c EOL 3A SOL 2A
							c/c EOL 3A SOL 10 A
							c/c EOL 10A SOL 4A
							c/c EOL 4A SOL 11A

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±~~EDT~~	SHIPS COURSE	SHIPS SPD	NAVIGATION		
29	09	80	1525				14364.5	439624	
			1530				64.7	439653	
			1535				65.0	68.4	
			1540				65.0	71.4	
			1545				65.1	75.0	
			1548				65.0	76.9	
			1550				64.8	77.8	
			1555				65.2	80.8	
			1559						
			1600				65.6	83.8	
			1605				69.4	84.2	
			1610				73.5	84.0	
			1612				75.0	83.9	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							sidescan off - paper fouled
							sidescan on
							c/c EOL 11A SOL 3A cont
							slightly off course - running on 43984
							instead of 43985
							EOL 3A
							That's it for today - heading in
							See ya tomorrow

LOCAL

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION		
30	09	80	0735	EDT					
							.	.	
							.	.	
			0858				14500.1	43964.8	
			0905				14499.8	65.8	
			10				501.3	64.9	
			15				02.4	64.4	
			20				00.4	62.7	
			25				00.1	59.1	
			30				00.1	54.9	
			35				00.3	51.5	
			40				00.3	48.3	
			45				00.2	44.7	
			50				00.1	41.2	
			55				000	37.5	
			1000				000	34.0	
			1001				.	.	
			05				00.3	30.6	
			1010				00.2	27.2	
			15				00.2	23.6	
			20				000	19.9	
			25				00.0	162	
			30				00.0	12.5	
			35				00.2	09.1	
			40				00.2	05.4	
			45				00.1	01.8	
			50				00.0	898.1	
			55				00.0	94.6	
			1100				00.2	91.2	
			5				00.3	87.7	
			1109				.5	85.2	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							Leave dock for 2nd time - Ch5 left behind
							heading for beginning of line 17 (43965, 141500)
							Stop - to deploy gear
							Recorders on
							Jockeying for position
							SOL 17 SOL 17
							fishing boat
							Green line
							start turn EOL 17 cc to line 17A

LOCAL

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±EDT	SHIPS COURSE	SHIPS SPD	NAVIGATION		
30	09	80	1115	EDT			1449	5.8	4388	5.4
			20				49	1.9		5.5
			22				90	.3		5.4
			25				90	.3		7.6
			30				90	.4		1.2
			35				90	.0		5.0
			40				90	.0		9.2
			45				90	.0	439	02.8
			50				90	.0		06.4
			55				90	.0		10.1
			1200				90	.1		13.8
			5				90	.1		17.4
			10				90	.2		21.2
			15				90	.1		24.9
			20				90	.2		28.7
			23				90	.0		.
			24					.		.
			25				90	.0		32.2
			30				90	.0		36.0
			35				90	.0		39.8
			40				89	.9		44.1
			45				90	.1		47.9
			50				90	.2		51.0
			55				90	.2		54.7
			1300				90	.3		58.8
			05				90	.1		62.6
			09					.		.
			10				89	.5		64.6
			14				88	.2		62.0
			20				85	.6		59.0

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							EOL 17A SOL 18
							unboom down belt change
							unboom up
							EOL 18 SOL 18A

GMT				TIME ZONE	SHIPS		NAVIGATION		
DAY	MO	YR	TIME	±	COURSE	SPD			
30	09	80	1325				1448	3.9	4395	5.5
			30				82	.5	33	.7
			35				80	.6	51	.0
			1337					.	50	.0

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							EOL 18A
							Recorders off
							equipment being pulled
							going in for refueling

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION		
01	10	80	0744				14482.1	43950.1	
			0745				83.1	50.2	
			0751				83.4	50.0	
			55				86.9	50.0	
			0800				91.3	49.8	
			05				95.8	49.8	
			10				14500.3	49.7	
			15				04.9	49.9	
			20				09.3	50.2	
			21				10.1	50.1	
			25				10.5	47.0	
			30				09.9	43.3	
			35				10.0	39.6	
			40				10.1	35.7	
			45				10.1	32.1	
			50				09.9	28.3	
			55				09.7	24.2	
			0900				9.4	20.4	
			04				9.4	19.7	
			5				6.2	19.7	
			12				2.2	20.3	
			15				497.5	20.3	
			22				94.0	20.3	
			25				90.1	20.4	
			26				88.9	20.4	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							deploying gear line 15 cont
							recorders on
							start line 15
							c/c EOL 15 cont SOL 19
							CBA line 19
							Pulling gear, heading in - ROUGH

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
02	10	80	0747	EDT			14348.3	43919.5
			0751				47.3	19.4
			0755				49.4	19.4
			0800				53.8	19.8
			0805				58.4	20.0
			0810				62.8	19.8
			0815				67.7	20.0
			0820				72.0	19.9
			0825				76.6	20.0
			0830				81.3	19.8
			0835				85.8	19.8
			0840				90.6	19.8
			0845				95.1	20.0
			0850				99.9	20.1
			0855				14403.9	20.2
			0900				08.4	20.0
			0902				—	—
			0905				12.7	19.9
			0910				17.2	19.6
			0915				21.5	19.6
			0920				26.1	19.8
			0925				30.8	19.8
			0930				35.0	20.2
			0935				39.3	20.5
			0940				43.8	20.4
			0945				48.3	20.0
			0950				53.3	19.7
			0955				57.5	19.8
			1000				62.0	19.8
			1005				66.5	19.9

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA	
							Deploy gear
							Recorders On
							Continue line 19
							Sidescan down briefly

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION		
02	10	80	1010	EDT			14470.9	43920.0	
			1015				75.4	20.0	
			1020				79.9	20.0	
			1025				84.2	19.9	
			1030				88.7	19.8	
			1031				90.0	19.8	
							.	.	
							.	.	
							.	.	
							.	.	
			1214				14359.3	43960.1	
			1218				59.7	60.2	
			1219				60.2	59.6	
			1230				.	.	
			1235				14359.6	43961.0	
			1240				59.3	58.0	
			1245				60.1	55.0	
			1250				60.2	51.9	
			1253				60.2	49.9	
			1255				62.0	49.8	
			1256				.	.	
			1300				66.4	49.9	
			1305				70.8	50.0	
			1310				75.3	50.0	
			1315				79.7	50.0	
			1320				84.0	49.9	
			1325				88.1	49.9	
			1330				92.5	49.9	
			1335				96.7	49.5	
			1340				14401.1	49.8	
			1345				05.2	50.2	

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

Still on line 19

EOL 19 pulling in gear
will be steaming to pick up the rest of line 15 and
part of line 1

Deplay gear (uni - sidescan)
Recorders ON
Circling while recorders are tuned - knot in hydrophone
Coming to line 1
ON LINE 1 (segment)

c/c to pick up on line 15 EOL1 SOL 15

Sidescan down briefly

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
02	08	80	1350	EDT			14409.4	43950.4
			1355				13.5	50.2
			1400				17.8	50.2
			1405				21.9	50.0
			1410				26.2	49.9
			1415				30.3	49.9
			1420				34.8	50.0
			1421				35.5	50.1

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO.	STA.	
							Still on line 15
							EOL 15
							Bye Bye !