76020Sei

GEOPHYSICS LOG

Dillon I

FAY 017

Port Everglades, Fla

20/06/76 1600Z

to Charleston, S.C.

29/06/76

FAY 017 100215 76020

SCI. PERS

Bill Dillon, Chief Sci.

Watches	Seismic	Navigation/G
4-8:	Lin Morse Doug Edsall ~~[illegible]~~	Scott Heald
8-12:	Elizabeth Winget Jack Redman ~~[illegible]~~	Charlie Paull
12-4:	Deborah Hutchinson Al Zupan ~~[illegible]~~	Paul Bereznak

G/Navigation
Perry Parks
Don Moller

Airguns/Recorders
Frank Jennings
Felicity Oram (through 22-06-76)

Lab Temp: 62° F

FAK 017

21 June 1976 13:15 Z

Seismic Data started ~~beg~~ being taken.
Nav.
NV-1, NV-2, NV-3, in Data box at Nav Lab. - Nav. Printouts continuous. still on Teletype and Linepunter. Plotter in Operation.

Gravity - Printout - two copies kept in separate covers. - changed once a day at same time as Paper Tape - Nav letter same as gravity tape I.D. - Time of changes choosen by good Nav fixes although roughly 2000. Paper tape will run continuously for whole cruise Presently GR-1 finished and Running on GR-2

22 June 1976 0330Z

SParker Roll #1
Line #1 and Part of #2

Start: Beginning of Cruise
End ~~0317~~ 22 June 1976 0317Z

Seismic Tape SA-1
21 June 1976 1545Z
22 June 1976 0248Z
Line #1 and Part of #2

22 June 1976 15:50 Z

3.5 KHz Roll #1
Start - beginning of Cruise
End 22 June 76 1328Z
Line 1 to 2A

23 June 1976 0025Z

Seismic Tape SA-2

22 June 76 0305Z
22 June 76 1555Z
Part of line #2 - Part of line #3

23 June 76
SParker Roll #2
0331, 22 June 76 - 1735, 22 June 76
lines 2+3

23 June 76

Seismic Analog tape SA3
22 June 76 - 1605
23 June 76 - 1033

23 June 76
Sparker Roll #3 Fay 17
22 June 76 1735 Z
23 June 76 1831 Z
lines 3 & 4

23 June
Airgun Roll #1
21 June 76
23 June 76, 0736 Z
lines 1-3

23 June 76
3.5 KHz roll #2
22 June 76 1343 Z
23 June 76 2340 Z
lines 2 & 4

24 June
Sparker Roll #4
23 June 76 1836 Z line 4
to 24 June 76 1946 Z line 5

Tape SA4
23 June 1042 Z
23 June 2303 Z

Tape SA5
23 June 2312 Z
24 June 1117 Z

Tape SA6
24 June 1123 Z
" " 2344 Z

3.5 KHz roll #3 24 June 0800 - 25 June 0406 Z
lines 4-7

June 25 '76

tape SA 7
24 June 2351 Z to 25 June 1208 Z

Sparker Roll #5
24 June 1848 - 25 June 1817
lines 5C - 8

tape SA 8
25 June 1214 - 26 June 76 0008 Z
lines 7, 8, 9

June 26

3.5 roll 4 lines 7-9
Sparker roll #6
25 June 76 1821 Z
26 June 76 2148 Z
lines 8-11

3.5 KHz roll #5 lines 9-11
26 June 0519 - 27 June 0145 Z

tape SA 10 lines 10-11
26 June 1243 - 27 June 0112 Z

June 27
Nav plot roll #1 21 June 76 1125 Z
26 June 1118 Z

tape SA 11 Fay 017
27 June 2126 - 27 June 1327 Z

June 27 tape SA 12
27 June 1335 – 28 June 0155 Z
lines 13–15

Sparker roll 7
26 June 2151 – 27 June 2126
lines 11–14

June 28
tape SA-13 lines 15, 15A, 15B, 15
28 June 0204 – 28 June 1422 Z

3.5 KHz roll #6 lines 11–15
26 June 0155 – 28 June 0008

3.5 KHz roll #7 line 15A
28 June 0008 – 28 June 0931

June 29
sparker roll 8 lines 14–15
2131, 27 June – 1802 Z, 28 June

sparker roll #9 To line 17
28 June 1802 – 29 June 1212

airgun roll #2 lines 3–17
29 June 0745 – 29 June 1212 Z

3.5 roll #8
28 June 0943 – 29 June 0845

3.5 roll #9
29 June 0853 – 1212

tape SA 15 found tape
tape SA 14 28 June 1432 – 29 June 0258

29 June 76 15:00Z

3.5 KHz Rolls 1 - 9

Packed in Three Boxes.

Box 1 of 3 (Rolls 1, 3, 4)
Box 2 of 3 (Rolls 2, 5, 6)
Box 3 of 3 (Rolls 7, 8, 9)

Will Stay on board.

NAV Teletype Printouts.

Put in Two Folders

One copy also has Lineprinter output

One will Stay on Board.

Magnetometer - One roll

NAV. Plotter Roll # 2 of 2

27 June 76 ~ 13:00Z

29 June 76 1535Z

Stuck inside Roll # 1

Going TO Woods Hole (carried out)

Data Tape Locator Forms NV and SA
Seismic Log.
Air Gun rolls (2 of 2)
Hand Plot on mylar of Navigation
Nav Plotter rolls (2)
Nav Log (2 of three copies.
Nav teletype (1 of 2) and lineprinter output
Magnetometer Roll (1 of 1)
Sparker rolls (9 of 9)
Composit Navigation Data Tape.

Left On Fay - ~~Three~~ Four Boxes

Two Boxes Nav Tapes.
Box 1 of 2 NU-1 - NU-12
Box 2 of 2 NU-13, NU-14

Seismic Analog tapes

SA-1 - SA-11 (in one box by themselves) (SA-12 - SA-15 is mixed Box)

Mixed Box
SA-12 - SA-15
Second copy of nav, teletype printout
Box 1, 2, 3, of 3 35 KHz rolls.

Third Nav log copy left at navigation

Left in Storage locker under Bridge of FAY

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD	N	W
20	06	76	1600	+04			.	.
							.	.
21	06	76	0855				.	.
							.	.
21	06	76	1200				29°22'89.8	088°44'69.6
21	06	76	1215				29°24'18.6	088°44'48.1
21	06	76	1230				29°25'50.5	088°44'27.0
21	06	76	1245				29°26'86.0	088°44'03.5
21	06	76	1300				29°28'26.2	088°43'82.5
21	06	76	1315				29°29'56.4	088°43'58.6
			1331				293122.	8043 29.
			1345				293262.6	80430 7.2
21	06	76	1400				293407.6	8042 80.2
			1415				.	.
			1430				.	.
21	06	76	1445				293767.2	8042 60.3
			1500				293890.2	8042 21.9
			1515				294041.5	8041 81.7
			1530				294186.9	8041 52.6
			1545				294336.0	8041 27.3
21	06	76	1600				294483.0	8040 96.1
							46 .	.
			1615				2946.35.	40.74.9
			1630				29 47.861	80 40.520
			1645				29 48.331	80 40.232
			1617				~~51.486~~	~~39.515~~
			1700				51.486	39.515
			1715				53.005	39.277
			1730				54.535	39.019
			1741				.	.

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							Depart Port Everglades, Fla. for line 1 ETA 1100Z 21 Jul.
							Prepare to stream gear for line 1
							Winget + Redman
							1400 - NAV CLOCK + RECORDER OFF
							1428 NAV CLOCK ON - FIX OK @ 1439 - 29.37186N 80.42708W
							1500 NAV CLOCK OFF - 7 SEC
							~1525 POWER DOWN ON SPARKER; BACK 1536
							~1554 POWER DOWN ON SPARKER
							DELAY ON TURNOVER AT 00 ON CLOCK +2-4 SEC.
							(MARK ON COUNT)
✓✓							NEW WATCH: Hutchinson, Zupan, Bereznak (nav)
							Minisparker still down - blank record, power failure Frank is looking into.
							Frank turned sparker off (EPC recorder).
							1657 C/C to head for position 2 - result of nav system error small course adjustment
							Sparker back on - had to change the circuit breaker

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
21	06	76	1745	+ 04	008	6	29°	56.096	80°	38.761
			1800		008	6.1	29°	57.648	80°	38.478
			1815		008	6.0	29°	59.175	80°	38.241
			1816							
			1830		008	6.7	30°	00.074	80°	38.040
					008	6.5	30°	02.328	80°	37.716
			1843							
			1845		008	6.5				
			1900		008	6.8	30°	03.912	80°	37.467
			1915		008	5.8	30°	05.581	80°	37.288
			1930		009	5.8	30°	07.344	80°	37.451
			1938					8.408		36.288
			1945		007	5.7	30		80°	
			2000		007	6.0	30	10	80°	36.032
			2015		007	5.8	30	11	80°	35 77.0
			2030		008	5.8	30°	13'	80°	35 94.0
			2045		008	6.5	30°	15'	80°	35 70.2
21	06	76	2100		008	6.5	30°	16'	80	35 40.1
			2115		008	6.4	30	18	80	35 04.2
			2130		008	6.4	30°	20'	80	34 81.2
			2145		008	6.3	30	21'	80	34 53.5
			2200		008	6.2	30	23	80	34 26.8
			2215		008	6.1	30	25	80	34 01.0
			2230		008	6.2	30	26	80	33 76.0
			2245		008	5.9	30	28	80	33 50.2
			2300		008	6.2	30	29	80	33 24.3
			2315		008	6.1	30	31	80	32 99.1
			2330		008	6.0	30	32	80	32 76.1
			2345		008	6.1	30	34	80	32 50.0

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO STA	
✓	✓	✓		✓		
						Filter changed - Airgun Recorder 16 - 205 Hz
						THIS LAB IS FREEZING - There's about a 20° gradient
						as one walks into the lab. Woe to the Gods of Electronics
						Frank looking at 3.5 KHz - cleaned pens. (carbon build up)
						New black Rubber mats in the lab
						AIRGUNS DOWN TEMP TO CHANGE PENS ON RAYTHEON #1 - one
						6cm pen but all three change. Frank bled compressors. Ok now
						New watch Linda Day
						Rate/track position looks bad. Day
						relieved for Dinner
						Pen adjustment btwn 2230 - 2245

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
22	06	76	000	+ 04	007	6.1	30°	3555.2	80	3221.8
			0014				30	3696.7		3299.6
22	06	76	0015		14.5	5.8	30	3704.1	80	3198.4
			0030		14.5	6.1	30	3851.5	80	3152.6
			0045		14.5	5.8	30	3993.0	80	3111.5
22	06	76	0100		14.6	5.9	30	4130.8	80	3082.7
			0115		14.5	5.9	30	4280.7	80	3024.1
			0130		14.5	5.7	30	4425.1	80	2983.4
			0145		14.5	5.7	30	4564.4	80	2940.3
22	06	76	0200		14.5	5.8	30	4704.1	80	2900.0
			0215		14.5	5.5	30	4845.5	80	2859.1
			0230		14.5	5.7	30	4982.5	80	2815.3
			0245		14.5	5.6	30	5121.3	80	2774.5
22	06	76	0300		14.5	5.6	30	5258.1	80	2731.5
			0315		14.5	5.3	30	5396.5	80	2690.3
			0330		14.5	5.8	30	5534.5	80	2650.9
			0345		14.5	5.6	30	5671.2	80	2608.9
22	06	76	0400		14.5	5.9	30	5709.0	80	2565.8
			0415		14.5	5.8	30	5944.2	80	25.234
			0430		14.6	5.9	31	00.850	80	24.850
			0445		14.6	5.9	31	02.294	80	24.452
22	06	76	0500		14.6	6.0	31	03.723	80	23.953
			0515		14.6	6.0	31	05.169	80	23.505
			0530		14.6	5.9	31	06.582	80	23.101
			0545		14.6	5.7	31	08.009	80	22.668
22	06	76	0600		14.6	5.7	31	09.429	80	22.223
			0615		14.6	6.0	31	10.861	80	21.786
			0630		14.6	6.0	31	12.276	80	21.347
			0645		14.0	6.1	31	13.598	80	20.640
22	06	76	0700		14.6	6.0	31	15.093	80	20.491
			0715		14.6	6.1	31	16.547	80	20.054

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							New watch Winget ; Redman
							END LINE 1 COMMENCE LINE 2
							0045:00 NAV RECORDER STOPPED ; RESUMED 0047.31
							0119.8 SPARKERS TURNED OFF ; ON
							0130 air gun recorder stopped, cleaned, resumed
							0138 " " pressure down to change heads
							My blood is congealing; Frostbite = workmen's comp?
							0248 Replace tape. STARTED 0305
							STOPPED ROLL 0317 {Changed roll on sparker; resumed 0331 / {New belt on sparker
							New watch: Hutchinson / ZUPAN
							≈0426 AIR GUN DOWN - BROKEN AIR HOSE (FRANK + FELICITY WORKING ON IT)
							0512 AIR GUN FIXED AND RECORDING
							MINISPARKER BREAKDOWN ≈0525 ; NEW BELT 0529 BACK ON
							0626 AIR GUN OFF TO CHANGE PENS -

GMT				TIME ZONE	SHIPS		NAVIGATION		
DAY	MO	YR	TIME	±	COURSE	SPD			
22	06	76	0730	+04	146.0		31 17989	80	19612
			0745		146.0		31 19444	80	19216
22	06	76	0750		146.9		31 20883	80	18742
			0800						
			0815		14559		31 22371	80	18269
			0813						
			0830		14.55.8		31° 23' 80.0	80	17842
			0845		14.56.1		31° 25' 21.4	80°	17406
			0900		14.45.7		31 26 62.4	80	16962
			0915		14.65.8		31° 28' 02.9	80	16588
			0930		14.55.9		31° 29' 41.2	80°	16134
			0945		14.66.0		31° 30' 79.7	80°	15727
			1000		14.55.3		31° 32' 16.4	80	15308
			1015		14.85.6		31° 33' 50.7	80	14917
			1030		15.15.5		31° 34' 85.2	80	14518
			1045		11.05.4		31° 36' 18.2	80	14038
			1052		40.05.5		31 36847	80	13834
			1100		40058		31° 37' 39.2	80	13330
			1114						
			1115		40056		31 38486	80	12235
			1130		40057		31° 38' 57.3	80	11140
			1145		40052		31° 40' 65.6	80	10078
22	06	76	1200Z		40056		31° 41729	80	09057
			1215		40064		31 42828	80	07986
			1230		40061		31 43996	80	06802
			1245		40061		31 45162	80	05695
22	06	76	1300		40060		31 46286	80	04555
			1315		40061		31 47437	80	03415
			1330		40059		31 48601	80	02292
			1345		40160		31 49744	80	01175

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							Minisparker down to clip electrodes.
							clear bit on sparker recorder
							Circle? for c/c begin Leg 2A
							change filter settings sparker to 350 - 4000 from 650 - 4500?
							1128 change filter - sparker to 350 - 3000
							1147 change filter sparker to 350 - 4500
							change watch - REDMAN & WINGET
							change paper 3.5 KHz stopped 1328Z 22 June 76 1343 OK

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
22	06	76	1400	+04	40.2	5.7	31° 50879	80°	01063.1	
			1415		40.0	5.7	31 51972	79	58942	
			1430		40.0	5.9	31 52082	79	57864	
			1445		39.7	5.7	31 54115	79	56792	
22	06	76	1500		40.3	5.7	31 55215	79	55784	
			1515		40.2	5.3	31 56276	79	54710	
			1530		39.2	6.0	31 57295	79	53684	
			1535		c/c	6.2	31 57180	79	53422	
			1545		49.0	5.6	31 58377	79	52430	
22	06	76	1600		49.0	5.5	31 59307	79	51183	
			1615		49.1	5.5	32 00222	79	49956	
			1630		49.1	5.5	32 01127	79	48756	
			1645		49.1	5.2	32 02027	79	47536	
22	06	76	1700		49.1	5.6	32 02893	79	46351	
			1715		49.1	5.9	32 03831	79	45041	
			1730		49.1	5.8	32 04790	79	43749	
			1745		49.2	6.3	32 05748	79	42476	
22	06	76	1800		49.2	5.7	32 06688	79	41176	
			1815		49.2	6.0	32 07629	79	39889	
			1830		49.2	6.5	32 08598	79	38577	
			1845		49.2	5.7	32 09579	79	37225	
22	06	76	1900		49.2	6.5	32 10553	79	35947	
			1915		49.2	6.1	32 11537	79	34602	
			1930		49.2	6.2	32 12498	79	33227	
			1945		49.2	5.6	32 13496	79	31878	
22	06	76	2000		49.2	5.9	32 14497	79	30486	
			2015		49.2	6.2	32 15503	79	29090	
			2030		49.2	6.6	32° 16'537	79	27702	
			2045		49.1	6.3	32° 17'552	79	26179	
			2100		49.1	6.3	32° 18'569	79	24757	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							~1430 Some possible NAV Trouble. Cleared.
							STARTED FIRING 160 inch gun ~1520
							22 June 96. Dillon I FAY 017 - Slightly past line for SAT fix
							Change heading. Commence line 3 @ 1535
							Change tape - 1557 - on again 1605
							New Watch: Hutchinson / Zupan
							1735: change sparker gages - on 1742 start roll #3
							Maggie on 4 inch/hr Blue 100 ft/inch
							relieved watch

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
22	06	76	2115	+04	52.8	6.6	32°	19'613	79°	23'336
			2130		49.1	5.8	32°	20'643	79°	21'958
			2145		49.2	6.6	32°	21'671	79°	20'596
			2200		49.2	6.0	32°	22'689	79°	19205
			2215		49.1	6.1	32°	23'672	79°	17783
			2219							
			2222		49.0	6.1	32	24137	79	17105
23	06	76	0616		050	6.4				
			0638				32	22765	79	19121
			0645		49.2	4.9	32	23.129	79	18.601
23	06	76	0700		49.2	5.0	32	23.995	79	17.442
			0715		49.2	5.7	32	24.871	79	16.210
			0730		49.3	5.9	32	25.792	79	15.002
			0745		49.2	5.7	32	26.731	79	13.665
23	06	76	0800	7 04	49.3	6.2	32	27696	79	12386
			0815		49.4	6.0	32	28675	79	11079
			0830		49.3	5.5	32	29613	79	09737
			0845		49.2	5.6	32°	30'573	79	08382
			0900		49.3	5.7	32	31568	79	07050
			0915		49.6	5.8	32	32577	79	05731
			0930		48.9	5.9	32°	33501	79	04335
			0945		49.4	6.0	32	34515	79	03008
			1000		49.9	6.0	32°	35518	79	01654
			1015		51.8	5.9	32	36497	79	00301
			1017	40sec						
			1019				32	36700	79	00000
			1030		61.0	5.7	32	37233	78	58764

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							Maggie secured
							3.5kHz, Sparker & air gun secured
							take Felicity to Charleston for ear check
							Felicity met coastguard behind breakwater en route to Charleston for hearing check.
							watch: Hutchinson, Tupan,
							All gear back in the water - airguns, minisparker, 3.5 kHz, gradiometer, frank paddling w/ airgun records
							Analog tape restarted at 229.3
							On track again at 0638[30]
							Change pages roll on airgun: 0736 - 0745 Start #2 roll
							change watch
							1010 Change pens on air gun recorder
							turning to begin line 4
							on line 4
							thank heavens for convenient scales!!! ☹

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD	hat			
23	06	76		+04						
23	06	76	1033		061	5.9	32 37.4	78 58.4		
			1042				32 37.8	78 57.5		
			1045		061	5.9	32° 37 97 4	78 57 26 0		
			1100		061	5.8	32° 38 71 3	78 55 72 2		
			1115		061	5.4	32° 39 44 3	78 54 17 3		
			1130		061	6.0	32 40 18 0	78 52 62 2		
			1145		061	6.7	32 40 89 6	78 51 04 1		
23	06	76	1200		061	6.0	32 41 60 6	78 49 47 0		
			1215		61.1	3.8	32 42 13 5	78 48 31 7		
			1230		60.8	3.9	32 42 09 9	78 47 50 0		
			1245		60.8	5.9	32 41 57 3	78 48 71 0		
			1258		60.8	5.3	32 40 95 3	78 49 50 0		
23	06	76	1300		60.8	5.4	32 40 86 9	78 50 16 2		
			1315		61.0	5.9	32 41 09 9	78 50 53 9		
			1330		61.1	5.7	32 41 80 2	78 49 04 2		
			1345		61.1	6.7	32 42 52 9	78 47 49 3		
23	06	76	1400		61.1	7.2	32 43 28 7	78 45 85 5		
			1415		61.1	5.4	32 44 03 1	78 44 27 4		
			1430		60.1	5.9	32 44 75 5	78 42 71 3		
			1445		61.1	5.4	32 45 47 4	78 41 14 0		
23	06	76	1500		61.2	5.9	32 46 19 7	78 39 62 3		
			1515		61.2	5.4	32 46 91 6	78 38 05 2		
			1530		61.2	6.1	32 47 65 1	78 36 51 2		
			1545		61.2	5.6	32 48 39 5	78 34 91 6		
23	06	76	1600		61.2	6.9	32 49 16 4	78 33 29 2		
			1615		61.3	6.8	32 49 96 0	78 31 51 9		
			1630		61.3	6.6	32 50 74 5	78 29 79 8		
			1645		61.3	7.0	32 51 56 1	78 28 05 1		
			1700		61.3	6.7	32 52 51 9	78 25 93 8		

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							Tape stopped - change #3 off
							Tape resumed #4 on
							Change belt on sparker 1155
							1155 - 1158 replace belt in sparker
							NEW WATCH - ← switch from Timex to Bulova Winget & REBMAN
							1205 Airgun pulled for check. Recorder running
							1222 starting to circle to pick up missed lines -
							1225 guns back on -
							1231 change sparker firing 1/2 sec sweep
							1258 Back on line - crossed line
							1318 Back on Line - Running Line
							1510 Jennings checking pens on airgun recorder OK.
							increase spd to 6.2-6.3 kts
							New watch: Hutchinson / Zupan
							1607: minsparker down to change belt - one pen missing - back on at 1611

GMT				TIME ZONE	SHIPS			NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD	WATER DEPTH				
23	06	76	1715		61.4	5.5		32 53 31.4		78 24 26.2	
			1730		61.4	7.3		32 54 10.6		78 22 52.4	
			1745		61.4	6.5		32 54 93.0		78 20 72.9	
23	06	76	1800		61.4	6.3		32 55 77.0		78 18 99.6	
			1815		61.4	7.2		32 56 52.2		78 17 22.7	
			1830		61.4	6.8		32 57 34.7		78 15 51.6	
			1845		61.5	6.6		32 58 14.4		78 13 76.4	
23	06	76	1900		61.5	6.1		32 58 73.3		78 12 49.8	
			1915		61.5	6.5		32 59 51.8		78 10 79.6	
			1930		61.5	6.4		33 00 28.8		78 09 08.4	
			1945		61.5	7.1		33 01 06.9		78 07 35.0	
23	06	76	2000		61.5	6.8		33 01 84.8		78 05 64.8	
			2015		61.5	6.6	~~59.7~~	33 02 63.8		78 03 93.6	
			2030		61.5	7.4	59.7	33 03 42.0		78 02 17.7	
			2045		61.5	7.1	59.1	33 04 22.6		78 00 41.3	
23	06	76	2100		61.5	6.5		33 05 28.5		77 59 59.0	
			2115		61.5	6.8	~~61.6~~	33 05 86.1		77 56 80.4	
			2130		61.6	6.5	61.6	33 06 69.2		77 55 02.3	
			2145		61.6	6.5	62.6	33 07 50.5		77 53 26.6	
			2200		61.6	6.7	60.1	33 08 31.8		77 51 41.9	
			2215		61.6	6.6	59.1	33 09 14.5		77 49 60.6	
			2230		61.7	6.8	58.5	33 09 97.1		77 47 79.1	
			2245		61.8	7.3	59.0	33 10 81.6		77 45 98.3	
			2300		61.7	7.2	58.9	33 11 63.0		77 44 15.0	
			2315		61.6	7.9	57.0	33 12 41.7		77 42 34.7	
			2330		61.8	6.4	60.1	33 13 25.2		77 40 55.6	
			2345		61.9	8.1		33 14 11.6		77 38 69.3	
24	06	76	0000		61.6	7.8	60.0	33 14 89.7		77 36 86.0	
			0015		61.8	7.5		33 15 75.6		77 35 01.8	
			0030		61.3	7.0		33 16 54.6		77 33 15.8	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							increased spd to 7 knts ~ 1725
							new roll + strip for minisparker off from 1831-1836
							new roll #4
							Assumed watch
							2303 Mag Tape Stop back on 23 12 30
							2312 Maggie resumed
							2320 CHANGE PENS ON AIRGUN RECORD
							2340 3.5 down to change paper - Help paper on paper change!!!
							New watch 160 cu in GAR began 0020 24 Jan 76
							0008 finally resumed 3.5 KHz after much hand wringing + hair tearing

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
24	06	76	0045	+04	62.0	8.1	33° 17'42.4	77°	31'32.2	
			0100		61.5	8.7	33 18'26.9	77	29'40.2	
			0103		127.9	7.4	33 18'47.6	77	28'92.2	
			0115		127.8	8.0	33 17'72.2	77	27'55.5	
			0130		127.9	6.7	33 16'65.8	77	26'11.5	
			0145		128.9	9.0	33 15'60.4	77	24'47.6	
24	06	76	0200		128.1	6.3	33 14'63.5	77	22'95.6	
			0215		127.9	6.5	33 13'63.3	77	21'49.2	
			0230		128.2	7.8	33 12'66.3	77	20'96.6	
			0245		128.2	6.3	33 11'66.9	77	18'47.9	
24	06	76	0300		128.3	6.9	33 10'66.2	77	16'95.3	
		-	0314		128	6.6	33 09'71.8	77	15'55.5	-
			0315		129.3	6.3	33 09'64.0	77	15'32.6	
			0330		129.2	7.6	33 08'53.4	77	13'77.2	
			0345		129.2	6.6	33 07'50.5	77	12'18.3	
24	06	76	0400		129.2	6.7	33 06'35.7	77	10'61.3	
			0415		129.2	5.8	33 05'25.8	77	09'03.8	
			0430		129.3	7.2	33 04'18.8	77	07'43.9	
			0445		129.2	6.0	33 03'12.1	77	05'91.8	
24	06	76	0500		129.2	6.0	33 02'06.9	77	04'41.0	
			0515		129.4	6.6	33 01'00.3	77	02'83.2	
			0530		129.2	6.5	32 59'96.0	77	01'35.1	
			0545		129.2	6.3	32 58'91.6	76	59'83.2	
24	06	76	0600		129.8	7.2	32 57'86.7	76	58'32.3	
			0611	Chongqing	[illegible]	5.1	32 57'06.9	76	57'20.7	
			0615		229.0	4.4	32 56'88.3	76	57'42.0	
			0630		228.9	5.7	32 56'16.6	76	58'49.0	
			0645		228.9	5.8	32 55'25.9	76	59'76.1	
24	06	76	0700		228.9	6.1	32 54'34.1	77	00'94.0	
			0715		228.8	6.6	32 53'45.2	77	02'18.6	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							Course Change:
							Commence line 5 0103 24 Jun 76
							CONSTANT ERROR IN DIGITAL DISPLAY? (depth)
							Off line ~100 m to North passing C-5 CALDRILL @ 0314
							New watch: Hutchinson / Zuran
							can't see bottom on 3.5KHz; (160) big air guns turned on at ~0445
							193.0 end of line 5A on tape, end of line 5A, start 5B
							change belt on minisparker - 0700 - 0703
							decreased from 8 ~~down~~ to 6.5 knots ~ 0728

GMT				TIME ZONE	SHIPS		NAVIGATION			water depth
DAY	MO	YR	TIME	±	COURSE	SPD				
24	06	76	0730		228.9	4.6	32 52579	77 03355		
			0745		229.0	3.7	32 51930	77 04191		
24	06	76	0800		228.8	4.0	32 51310	77 05084		
			0815	+04	228.7	3.8	32 50684	77 05976		504.4
			0830		228.9	4.2	32 50006	77° 06849.		502.5
			0845		228.9	4.0	32° 49' 336	77° 07736		504.0
			0900		228.9	3.8	32 48691	77 08628		500.2
			0915		228.7	5.3	32 48044	77 09533		495.5
			0930		228.7	3.4	32 47389	77 10421		494.8
			0945		228.9	4.0	32 46731	77 11281		490.0
			1000		228.7	4.1	32° 46.077	77 12186		487.8
			1015		228.5	4.0	32° 45437	77 13070		490
			1030		228.6	4.6	32 44780	77 13949		491.4
			1045		230.3	3.1	32 44104	77 14797		
			1100		323.5	3.7	32 43482	77 15704		
			1115		323.6	6.5	32 44653	77 16820		468.7
			1117		323.6	6.5	32 44877	77 17015		466.2
			1123							
			1130		323.6	6.9	32 45928	77 18037		
			1145		323.6	6.4	32 47226	77 19107		427.6
24	06	76	1200		323.6	4.9	32 48364	77 20142		414.2
			1215		323.6	5.2	32 49507	77 21101		390
			1230		323.6	5.3	32 50606	77 22086		373
			1245		323.5	5.9	32 51737	77 23083		354
			1300		323.5	5.9	32 52917	77 24111		
			1315		323.5	6.1	32 54114	77 25124		
			1330		323.5	5.7	32 55336	77 26206		
			1345		323.5	6.0	32 56556	77 27311		
24	06	76	1400		323.5	6.8	32 57795	77 28340		
			1415		323.5	6.6	32 59029	77 29468		

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO STA	
						Assumed watch
						Changing course to Line 5C
						1117 CHANGE #5 OFF MAG. TAPE 1123 #6 ON Tape restored
						Change watch Winget - Redman
						Maintain 60 depth - increase readings
						1340 - Changed pressure in air gun & checked. (Set backwards when put in last time.)
						1414 Pulled spacer array to clip terminals; Resume 1428

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
24	06	76	1430	+04	323.5	6.8	33	00 25.8	77	30 58.0
			1445		323.5	6.0	33	01 50.6	77	31 65.1
24	06	76	1500		323.4	6.9	33	02 76.3	77	32 72.0
			1515		323.4	6.2	33	04 01.1	77	33 81.6
			1530		323.4	7.0	33	05 27.1	77	34 90.8
			1545		323.4	6.2	33	06 55.2	77	36 10.5
24	06	76	1600		323.4	7.1	33	07 01.6	77	37 33.6
24	06	76	1600							
			1615		323	6.6	33°	09.331'	77°	38.596'
			1630		323	6.7	33	10.706	77	39.717
			1645		323	6.1	33	12.008	77	40.869
			1700		323	5.2	33°	13.285	77	42.008
			1715		323	7.1	33	14.566	77	43.140
			1730		323	5.8	33	15.819	77	44.202
			1745		323	7.2	33	17.072	77	45.356
			1800		323	5.9	33	18.374	77	46.489
			1815		323	6.7	33	19.656	77	47.667
			1830		323	6.0	33	20.997	77	48.804
			1845		323	6.1	33	22.320	77	49.991
			1900		323	6.3	33	23.632	77	51.147
			1907							
			1915		323	6.9	33	24.963	77	52.389
			1917							

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO	STA	COMMENTS AND OBSERVATIONS
							1440- Client sparker recorder, replaced belt
							1505 EPC- to 2GR 1/4-3/4 and 2GR edge 0-1/4 to cross shelf edge
							1540 160 gun down - on 1600
✓	✓	✓	✓	✓			NEW WATCH: Zupan, Hutchinson Frank toggled some EPC switches & got the minisparker firing properly again (had been misfiring)
✓	✓	✓	✓				
							3.5 adding extra crisps sporadically. Frank played ≈ 10 min w/ minisparker record (gain adjustment etc)
							The icicles are about to start forming. Chilly a chilly just walked through the lab making his rounds.
							End sparker roll #4 1848 Start sparker roll #5
							Percy & Frank explaining to Catherine the workings of the 3.5 KHz depth display indicator, outgoing pulses, and programming response.
							change minisparker belt 1917-1919
							& fiddle w/ knobs - increase contrast
							Frank, in a perpetual hump, went around the lab

GMT				TIME ZONE	SHIPS		NAVIGATION				water depth
DAY	MO	YR	TIME	±	COURSE	SPD					
24	06	76		+04							
24	06	76	1930	+04	323	6.7	28°	26.324'	77°	53.538'	
			1945		323	7.3	33	27.626	77	54.725	
			2000		323	6.7	33	28.910	77	55.833	
			2015		323.2	7.7	33°	30.195	77	56.968'	
			2030		323.3	6.8	33°	31.417'	77	58.117'	
			2045		323.3	6.1	33°	32.564'	77	59.154'	
24	06	76	2100		323.2	5.8	33	33 891'	78	00.305	020
			2115		323.2	7.1	33	35.121'	78	01.391'	020
			2130		323.1	6.7	33°	36.326'	78	02.442	19.4
			2145		323.2	5.7	33°	37.509'	78°	03.529	18.3
			2200		323.2	5.8	33°	38.672'	78	04.599	17.3
			2215		323.2	7.0	33°	39.950'	78	05.750	17.0
			2230		323.0	7.2	33°	41.363	78	06.950	17.2
			2245		323.5	6.5	33°	42.636	78	08.207	17.6
			2300		322.9	6.4	33°	44.042	78	09.349	16.9
			2315		323.0	6.8	33	45.397	78	10.577	17.0
			2330		323.5	6.0	33	46.695	78	11.815	16.5
			2345		322.4	7.0	33	48.076	78	12.951	
25	06	76	0000	+04	323.2	7.0	33	49.429	78	14.224	15.3
			0005		323.1	7.6	58	33	49.976	78	14.715	13
			0015		247.1	5.9	-40	33	50.099	78	15.726	13
			0030		247.1	5.8	122	33	49.511	78	17.338	13
			0045		247.2	5.9	214	33	48.936	78	18.940	14

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							taping up log sheets for the recorders - when paper, pens etc., changed.
	✓	✓	✓	✓			
							Momentous deliberations presently underway (W. Dillon, F. Jennings, P. Parks) re depth equipment towing at & depth of water we shall soon be entering.
							N.B. 3.5 KHz ≈ 15 ft. below surface
							Airgun Array says ≈ 80 ft below surface
							Maggie ≈ some 12' below surf.
							What will records do if equip towing??
							NEW WATCH:
							All depths for water are 20 M too deep until this point -
							All others after this pt. should be correct.
							2344 - tape stopped for change - 2351 Tape resumed
							New Watch Rodman + Winger
							0005 end line 5C, commence 6. Airgun ret'd to continuous then back to shotpoint line

GMT				TIME ZONE	SHIPS		NAVIGATION				Water Depth
DAY	MO	YR	TIME	±	COURSE	SPD	# SP				
25	06	76	0100	+04	247.2	5.7	396	33	48396	78 20664	13
			0115		247.2	6.2	401	33	47743	78 22306	14
			0130		247.3	6.1	495	33	47133	78 24037	13
			0145		247.1	6.5	591	33	46555	78 25727	14
25	06	76	0200		247.5	6.0	688	33	45916	78 27529	14
			0209		248.1	6.1	748	33	45509	78 28691	14
			0215		142.9	6.4	015	33	45133	78 28708	14
			0230		142.8	6.3	117	33	43195	78 27546	15
			0245		142.9	6.7	219	33	42668	78 26363	17
25	06	76	0300		142.9	7.4	322	33	41132	78 25163	17
			0315		142.9	7.2	425	33	39801	78 23940	17
			0330		142.9	6.9	527	33	38471	78 22740	19
			0345		143.9	6.9	627	33	37106	78 21480	19
25	06	76	0400		142.9	8.0	730	33	35756	78 20231	20
			0415		143.0	6.3	832	33	34450	78 19107	20
			0430		143.0	5.9	933	33	33154	78 17949	21
			0445		143.0	7.0	1028	33	31891	78 16842	24
25	06	76	0500		143.0	6.7	1126	33	30623	78 15701	24
			0515		143.0	6.0	1224	33	29371	78 14523	25
			0530		143.0	6.0	1322	33	28076	78 13424	26
			0545		143.0	5.3	1421	33	26818	78 12249	26
25	06	76	0600		143.0	5.7	1514	33	25597	78 11170	27
			0615		143.0	7.9	1610	33	24342	78 10066	27
			0630		143.0	6.2	1706	33	23120	78 08920	27
			0645		143.0	5.6	1800	33	21875	78 07886	28
25	06	76	0700		143.0	5.6	1896	33	20633	78 06734	29
			0715		143.0	6.3	1990	33	19421	78 05625	30
			0730		143.0	5.8	2084	33	18209	78 04542	30
			0745		143.0	6.4	2177	33	16990	78 03468	32
25	06	76	0800		143.0	5.3	2272	33	15728	78 02443	33

OPS								COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA		
								0117 change belt on EPC. Resume 0130
								0209 Commence Line 7. SP to manual at 748 and return 0212
								Can't locate tech as can't shut off gun & change pens.
								Aligns down at 0346 to change pens. Resume 669 at 0351
								New Watch: Zupan, Hutchinson
								0410 - 0413 change paper + pens on 3.5 KHz
								new belt on minisparker - 0521 - 0523
								New Watch Morse - Edsall

GMT				TIME ZONE	SHIPS		NAVIGATION						DEPTH
DAY	MO	YR	TIME	±	COURSE	SPD	SP						
25	06	76	0815	+04	143.2	5.9	23641	33°	14.571.	78	01284.		33.7
			0830		143.2	5.8	24577	33	13.396.	78	00166.		33.0
			0845		143.2	6.0	25502	33	12.162.	77	59114.		33.6
			0900		143.2	6.0	26433	33	10.936.	77	58092.		33.2
			0915		143.2	6.0	27355	33	09.812.	77	57023.		37.3
			0926						.		.		
			0928						.		.		
			0930		143.1	5.5	28411	33	08.519.	77	56000.		37.0
			0945		143.1	6.4	29355	33	07.295.	77	54903.		40.9
			1000		143.2	6.7	30322	33	06.054.	77	53763.		41.1
			1015		143.2	6.6	31330	33	04.780.	77	52637.		39.4
			1030		143.2	5.7	32226	33	03.524.	77	51540.		~~23.2~~
			1045		143.2	7.1	33211	33	02.308.	77	50427.		
			1100		143.2	5.7	34163	33	01.056.	77	49335.		148.9
			1115		143.2	6.4	35123	32	59.808.	77	48231.		162.1
			1130		143.2	6.4	36066	32	58.591.	77	47161.		
			1145		143.3	5.4	36999	32	57.391.	77	46044.		180.1
25	06	76	1200		143.2	4.5	37922	32	56.205.	77	45027.		
			1215		143.3	7.0	38855	32	55.017.	77	43968.		228
			1230		143.3	5.8	39777	32	53.798.	77	42918.		244
			1245		143.3	5.8	40688	32	52.621.	77	41861.		253
25	06	76	1300		143.3	6.1	41611	32	51.426.	77	40834.		259
			1315		143.3	6.5	42544	32	50.219.	77	39745.		265
			1330		143.3	6.3	43450	32	48.956.	77	38630.		281
			1345		143.3	6.2	44445	32	47.720.	77	37560.		281
25	06	76	1400		143.3	5.9	45353	32	46.434.	77	36437.		278
			1415		143.3	6.6	46422	32	45.156.	77	35339.		328
			1430		143.3	6.4	47342	32	43.835.	77	34169.		351
			1445		143.3	6.7	48244	32	42.528.	77	32996.		327
25	06	76	1500		143.3	7.2	49144	32	41.228.	77	31839.		412

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO	STA	
							BACK to 10 sec sweep on Air gun - Computer lost Satellite
							BACK to regular operation on air gun
							1208 - Large Tape - 1214 Tape resumed
							New watch - R Brown + Wright
							1225 - 160 in gun started
							1240 Pulled Sparker to clean tips
							1320 Sparker back on
							Depths noted on sparker and 3.5 KHz may be wrong; don't match NAV readouts. Many depths also off? Graph for depth sounding. WH?

GMT				TIME ZONE	SHIPS			NAVIGATION			(m)
DAY	MO	YR	TIME	±	COURSE	SPD	SPH	LATITUDE (n)	LONGITUDE (w)		Depth
25	06	76	1515	+04	143.6	6.5	5043	32°39'821.	77°30'607.		426
			1530		143.3	6.3	5137	32 38 588.	77 29 556.		403
			1545		143.7	6.0	5229	32 37 396.	77 28 483.		458
25	06	76	1600		143.3	5.4	5315	32 36 262.	77 27 501.		461
			1600								
			1615		149	5.3	5403	32° 35.140'	77° 26.500'		479
			1617		c/c		5410				
			1630		229	2.3	0000	32° 34.512	77° 26.856		479
			1645		229	3.9	0000	32° 34.035	77° 27.740		473
			1700		229	3.5	0000	32 33.420	77° 28.591		471
			1715		229	3.2		32 32.801.	77 29.411.		467
			1730		229	3.5	—	32 32.223	77 30.237		466
			1745		229	3.8		32 31.593	77 31.062		463
			1800		229	4.3		32 31.005	77 31.909		475
			1815		229	3.3		32 30.395	77 32.708		459
			1817								
			1830		229	3.9		32 29.801	77 33.543		456
			1845		229	3.2		32 29.153	77 34.372		~~312~~
			1900		229	4.2		32 28.542	77 35.250		—
			1915		229	3.7		32 27.892	77 36.110		
			1930		229	3.9		32 27.293	77 36.011.		
			1945		322	5.2		32 26.746	77 36.964		

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							EPC misfiring. Change belt 1530. Resume 1540
							1152 Frank swearing at it to frighten it into working. It does.
	✓	✓	✓	✓			New Watch: Hutchinson, Zupan, Bereznak
	✓		✓	✓			END LINE 7 c/c START LINE 8
							Airguns also down for maintenance. S.P. routine will
							not commence until Airguns back in the water.
							Meanwhile, another beautiful sunny day, long gentle
							swells, breeze from ≈ S.E and the word is Steel beach is
							where the actions at.
	✓	✓	✓				
							Airguns still down, making slow time over bottom due to
							bucking the Gulf Stream. Some interesting hummocky features
							on the bottom, as seen in the minisparker. (side echoes??)
							1817-1821 Change minisparker paper one roll defective, is
							being fixed returned ~~marked~~; amidst others.
							Airguns back on 1919Z, 10 sec rep rate until line 9

GMT				TIME ZONE	SHIPS		NAVIGATION				
DAY	MO	YR	TIME	±	COURSE	SPD	Shot Point	LATITUDE (n)	LONGITUDE (w)	Depth (m)	
25	06	76	1951	+04	322.2	5.2	000132	26 97.9	77 37.431		
								.	.		
								.	.		
			2000	±04	322.7	5.1	005232	27.626.	77 38.045.		
			2015		322.8	6.2	014332	28.727.	77 39.201.	426.9	
			2030		322.8	6.5	023932	30.004.	77 40.280.	406.2	
			2045		322.7	6.2	033832	31.316.	77 41.367.	387.2	
			2100		322.7	6.4	043032	32.469.	77 42.496.	395.8	
			2115		322.7	8.5	052432	33.847.	77 43.709.	378.0	
			2130		322.7	5.3	061632	34.879.	77 44.619.		
			2145		322.7	6.0	070732	36.041.	77 45.690.	346.5	
			2200		322.7	5.8	079532	37.170.	77 46.744.	330.1	
			2215		322.7	5.6	088232	38.291.	77 47.747.		
			2230		322.7	5.3	096632	39.376.	77 48.726.	313.7	
			2245		322.7	4.9	104832	40.440.	77 49.685.		
25	06	76	2300	+04	322.7	5.4	113232	41.530.	77 50.642.		
			2315		322.7	5.1	121432	42.590.	77 51.608.		
								.	.		
			2330		322.7	5.2	129832	43.660.	77 52.586.		
			2345		322.6	5.0	138032	44.735.	77 53.515.	262	
26	06	76	0000		322.6	5.1	146432	45.811.	77 54.510.		
			0015		322.6	5.4	154932	46.926.	77 55.498.	229	
			0030		322.6	5.7	163832	48.064.	77 56.523.	215	
			0045		322.6	5.6	172832	49.226.	77 57.573.	193	
26	06	76	0100		322.6	5.8	181732	50.381.	77 58.593.	175	
			0115		322.6	6.5	190832	51.555.	77 59.655.	167	
			0130		322.6	6.1	200032	52.705.	77 00.742.	143	
			0145		322.6	7.0	209732	53.978.	77 01.860.	124	
26	06	76	0200		322.5	7.0	219332	55.235.	77 02.987.	112	
			0215		322.5	6.0	228832	56.463.	77 04.098.	088	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
	✓	✓	✓	✓			START LINE 9 S.P. # 1 - Program temp bombed &
							airguns set to 10 sec rep rate, w/in 2 min returned
							to computer rep rate 30 m.
	✓	✓	✓	✓			Change watch. Morse & Edsall
							2215 - problems w/ visual depth reading - Perry
							to the rescue!!
							2227 change pulse rate on 3.5 from 25 to
							50
							2256 - change 3.5 from 1 sec sweep to
							1/2 sec sweep -
							more problems w/ depth - check visual
							depth against scale on record
							water depth read from 3.5 record from now on
							new watch Bedman & Wright
							SA-8 Tape off to change 0004; Resume 0010:30"
							chg filter 32-205 Hz on airgun 0104
							0211 EPC to edge position 1=R

GMT				TIME ZONE	SHIPS		NAVIGATION				
DAY	MO	YR	TIME	±	COURSE	SPD	SHOT POINT	LATITUDE (n)	LONGITUDE (w)	DEPTH (m)	
26	06	76	0230	+04	322.5	5.7	2383	32 57 69.5	78 05 19.8	045	
			0245		322.5	5.2	2480	32 58 92.4	78 06 35.4	044	
			0300		322.5	4.4	2574	33 00 15.2	78 07 45.3	032	
			0315		322.5	6.1	2665	33 01 28.8	78 08 57.7	-	
			0330		322.5	5.0	2754	33 02 47.1	78 09 53.9	-	
			0345		322.5	4.7	2842	33 03 59.8	78 10 57.2		
26	06	76	0400		322.4	4.6	2931	33 04 71.4	78 11 60.7	027	
								.	.		
			0400					.	.		
			*					.	.		
			0415		322.4	3021		33 05.874	78 12.669	026	
			0417				3031	.	.		
			0430		322.5	3108		33 07.006	78 13.728	027	
			0431					.	.		
			0445		322.6	3198		33 08.168	78 14.755	025	
			0449					.	.		
			0456					.	.		
			0500		322.5	3288		33 09.349	78 15.831	025	
			0504					.	.		
			0508					.	.		
			0515		322.5.3	—		33 10.507	78 16.870	—	
			0519					.	.		
			~~0524~~					.	.		
			0520					.	.		
			0530		322.5	3468		33 11.635	78 17.972	024	
			0545		322.6.2	3557		33 12.805	78 18.962	024	
			0600		322.1.1	3647		33 13.961	78 20.033	022	
								.	.		
								.	.		
			0615		322.6.4	3741		33 15.168	78 21.144	022	

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							0315 Change paper on 3.5 KHz Big Leads. Great confusion. Clouds of blue air in general area.
							0336 3.5 KHz resume recording
							0345 3.5 KHz stopped; paper slipping. 0358 OK
							NEW WATCH: Zupan, Hutchinson, Bereznak, Heald THE GRAVE YARD GANG
							changed paper again on 3.5 KHz - working again
							airgun marked at this time & S.P.
							Belt on minisparker changed. Back on at 0434z.
							Lab temp is 62.3°F - and we're headed north.
							≈0456 big airgun off (160 in³ secured)
							Shotpoint routine bombed airguns set to time mode.
							3.5 on blitz again - chewing up paper - problem solved by shifting pen's launching pad - back on 0519
							SP#2 03408 SP back on SP PROGRAM AT 0519
							0
							3.5 back on & working - the short roll has been tacked onto the end of roll #4 & the new roll #5 has finally begun
							Well, no bombs, paper changes, faulty pens, irascible technicians and other major catastrophes in the last 15 min. Can miracles never cease!

GMT				TIME ZONE	SHIPS		NAVIGATION				DEPTH (M)
DAY	MO	YR	TIME	±	COURSE	SPD	SHOT POINT	LATITUDE (N)	LONGITUDE (W)		
26	06	76	0630	+04	322	6.0	3834	33 16.348	78 22.266		021
			0645		322	5.9	3928	33 17.590	78 23.337		020
			0700		322	5.4	4024	33 18.887	78 24.551		019
			0715		322	6.8	4121	33 20.112	78 25.729		020
			0730		322	6.0	4218	33 21.379	78 26.845		019
			0745		322	6.8	4316	33 22.651	78 27.988		019
			0800		322.2	6.2	4413	33 23.891	78 29.127		020
			0815		322.2	6.3	4511	33 25.164	78 30.270		
			0830		322.2	6.8	4610	33 26.425	78 31.467		016
			0845		322.2	6.2	4710	33 27.705	78 32.641		013
			0900		322.2	6.7	4809	33 28.970	78 33.825		014
			0915		322.3	~~6.4~~ 6.1	4907	33 30.223	78 35.006		013
			0930		322.3	5.9	5003	33 31.457	78 36.138		013
			0945		322.3	6.8	5099	33 32.687	78 37.273		012
			1000		322.1	6.4	5195	33 33.934	78 38.400		011
			1015		321.8	6.8	5291	33 35.175	78 39.526		
			1630		321.2	6.4	5387	33 36.409	78 40.658		011 ?
			1040								
			1045		219.7	6.3		33 37.661	78 41.623		011 ?
			1100		219.1	5.8		33 38.046	78 41.516		016
											Missing?
											8
			1105								

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO STA	
	✓	✓	✓	✓		
						Scott & Alan on the fantail pulling the 160" airgun aboard - it's been towing unused since 0456
						change watch
						THANK HEAVENS FOR MY BLANKET!!! MAKES A NICE COCOON
						1018 Air Gun went to contin fire, gun pressure dropped to ~1500 by approx 1013
						1035 airgun back to firing every 30m
						1041 airgun to continuous
						1040 Course change beg. LINE 10
						DOING A PRETZEL SHAPED TURN
						1040-1045 TROUBLE w/ 3.5 KHz SCREWY RECORD
						NO DEPTH GATE VISIBLE, UNCLEAR AS TO ZERO
						PT. - SCOTTY FIDDLED - NOT MUCH IMPROVEMENT - ACCURACY
						OF DEPTH IS QUESTIONABLE
						1101 back to firing air gun every 30m - .4 mile to begin
						of LINE 10 pt. 1040 to 1105 making
						by circle.
						1104 air gun back to continuous fire (Problem)
						FINALLY BEGIN LINE 10 ~~COURSE 219~~

GMT				TIME ZONE	SHIPS		NAVIGATION				DEPTH (m)
DAY	MO	YR	TIME	±	COURSE	SPD	SHOTPOINT	LATITUTUDE (N)	LONGITUDE (W)		
26	06	76	1115 ~~1130~~	+04	219.6	6.0		33° 36.816	78° 42.514		
			1130		219.5	6.0		33 35.669	78 43 685		010
			1145		219.3	6.0		33 34.643	78 44 854		
			1200		219.6	6.2		33 33 353	78 45 842		016
			1205		219.5	5.8	429	33 32 046	78 47 244		015
			1230		219.5	5.8	522	33 31 050	78 48 251		017
			1245		219.5	5.9	615	33 29 758	78 49 397		015
26	06	76	1300	+04	219.3	6.1	708	33 28 722	78 50 539		014
			1315								015
			1330		219.6	5.7		33 26 493	78 52 720		014
			1345		219.6	6.2		33 25 281	78 53 597		
			1345		140.2	6.1		33 25 182	78 53 437		014
26	06	76	1400	+04	140.1	7.1		33 23 934	78 52 359		013
			1415		140.1	6.5	175	33 22 678	78 51 081		013
			1430		140.1	6.7	281	33 21 391	78 49 775		014
			1445		140.1	7.0	385	33 20 052	78 48 477		016
26	06	76	1500	+04	140.1	7.1	491	33 18 737	78 47 158		017
			1515		140.1	6.5	598	33 17 415	78 45 847		017
			1530		140.1	7.2	702	33 16 102	78 44 555		017
			1545		140.1	6.8	814	33 14 761	78 43 223		017
26	06	76	1600		140.1	6.8	914	33 13 448	78 41 932		019
			1615		140.2	6.7	1019	33 12 163	78 40 663		013
			1616								
			1630		140.1	6.6	1121	33 10 642	78 39 283		0 ~~16~~ 21
			1645		140.2	6.6	1224	33 09 419	78 37 964		022
26	06	76	1700		140.2	6.1	1324	33 08 171	78 36 704		022
			1715		140.2	6.4	1421	33 06 954	78 35 517		023
			1730		140.2	5.9	1519	33 05 736	78 34 301		026
			1745		140.3	6.1	1616	33 04 527	78 33 097		025
			1800		140.3	6.4	1711	33 03 337	78 31 914		030

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO	STA	
							1117 to firing Air gun at 30m intervals
							1126 back to continuous firing of air gun
							Computer firing 1208. Frank cleaned solenoid.
							New watch - Wright - Lehman
							Tape out 1232; resume 1243
							1303 - airgun on manual SP #722 10 sec
							1310 NAV down Last rdg 785° 1' 33.4 33° 27' 95.1, Resume 1323
							(Computer Line #11 reads #34 But later, 017-11)
							1342 Change Course. Return to s/s firing
							1353 Trouble in River City. Back to continuous.
							1407 Resume s/s firing @ SP #124 30 meters
✓✓✓✓							New watch: Hutchinson / Zupan
							~~Depths measured from outgoing pulse~~; 1616 - 1617 EPC change belts
							1748: minisparker off - clipping the tips
							1806: " back on

GMT				TIME ZONE	SHIPS		NAVIGATION						
DAY	MO	YR	TIME	±	COURSE	SPD	S.P.	LATITUDE (N)			LONGITUDE (W)		DEPTH (m)
26	06	76	1815		140.2	6.7	1807	33	02	14.0	78	30	736	032
			1830		140.3	5.7	1902	33	00	92.5	78	29	596	034
			1845		140.3	6.8	1997	32	59	56.5	78	28	424	034
			1900		140.3	6.4	2087	32	58	63.1	78	27	320	035
			1915		140.3	5.6	2178	32	57	50.5	78	26	187	037
			1930		140.3	6.0	2267	32	56	39.3	78	25	083	038
			1945		140.3	5.6	2354	32	55	29.5	78	24	026	041
			2000		140.3	5.7	2441	32	54	20.6	78	22	976	040
			2015		140.3	6.0	2528	32	53	12.0	78	21	906	040
			2030		140.5	5.8	2614	32	52	12.6	78	20	719	041
			2045		140.3	5.2	2700	32	50	87.1	78	19	728	042
			2100		140.4	5.5	2787	32	49	79.6	78	18	650	045
			2115		140.4	5.5	2874	32	48	74.7	78	17	638	052
			2130		140.4	5.5	2962	32	47	64.5	78	16	548	
			2145		140.4	6.0	3114	32	46	51.2	78	15	468	172
			2200		140.4	6.0	3202	32	45	40.2	78	14	389	167
			2215		140.4	5.5	3291	32	44	28.6	78	13	294	175
			2230		140.5	5.2	3379	32	43	21.1	78	12	191	
			2245		140.4	5.9	3464	32	42	14.1	78	11	166	189
			2300		140.5	6.1	3552	32	41	06.6	78	10	076	200
			2315		140.4	5.7	3642	32	39	90.1	78	09	026	205
			2330		140.5	5.7	3734	32	38	75.2	78	07	867	232
			2345		140.5	6.1	3828	32	37	58.5	78	06	719	232
27	06	76	0000	+04	140.6	5.2	3912	32	36	56.1	78	05	691	250
			0015		140.4	5.4	3993	32	35	51.6	78	04	753	250
			0030		140.4	5.8	4072	32	34	53.3	78	03	742	263
			0045		140.6	4.7	4155	32	33	51.3	78	02	762	275
27	06	76	0100		140.5	5.3	4237	32	32	46.3	78	01	772	285
			0115		140.5	5.3	4321	32	31	41.5	78	00	733	292
			0130		140.6	5.6	4410	32	30	31.4	77	59	651	310

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							new watch
							2111 *Resume manual firing on air gun
							2126 Resume s/s firing & Sparker 3015
							2148 Change paper on Sparker #6 off 2151 Sparker Back on #7 on
							Dillon - changing filter settings on air gun
							changed watch Wright Robinson
							0017 Sparker to P-2 2 sweep .5 sp
							0117 Tape changed. Resumed. 0126

GMT				TIME ZONE	SHIPS		NAVIGATION									DEPTH (m)
DAY	MO	YR	TIME	±	COURSE	SPD	S.P.	LATITUDE (N)			LONGITUDE (W)					
27	06	76	0145	+04	140.5	5.6	4497	32	29	20.3	77	58	60.3			319
			0200		140.6	5.8	4585	32	28	10.0	77	57	55.6			-
			0215		140.6	5.4	4674	32	27	00.1	77	56	44.8			375
			0230		140.4	5.5	4762	32	25	87.0	77	55	40.2			370
			0245		140.6	5.6	4850	32	24	78.2	77	54	29.0			390
27	06	76	0300	+04	140.5	6.1	4938	32	23	67.3	77	53	24.9			400
			0315		140.8	5.1	5025	32	22	60.2	77	52	16.6			420
			0330		140.7	5.2	5108	32	21	54.1	77	51	17.2			434
			0345		140.6	5.8	5192	32	20	50.6	77	50	16.4			450
27	06	76	0400		140.9	4.7	5271	32	19	51.8	77	49	19.7			458
			0400													
			0415		141	5.5	5348	32°	18.	54.0	77°	48	27.0			414
			0430		140	4.5	5421	32°	17.	60.4	77°	47	39.9			514
			0440				5471	~~32°~~	16.	98.7	77°	46.	80.9			516
			0445		206	4.2	—	32°	16.	79.2	77°	46.	96.1			614
			~~0455~~													
			0450													
			0500													525
			0515													510
			0530													566
			0538													
			0545													586

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							3.5 kHz power change 0145; Resume 0155 - - changing bottom position. OK at 0210
							0305 Sparker to Edge position
							NEW WATCH: Hutchinson, Fupan, Berezniak, though everybody else just about is up, or will be, shortly.
✓	✓	✓	✓				END LINE 11 START LINE 12 switch airguns to manual/time firing rate. Nav S.P. routine being overhauled
✓	✓	✓	✓				STREAMER (AIRGUNS) down for inspection; Frank is checking depth calibration and general hydrophone wear & tear during the cruise. (w/ Bill & Al)
✓		✓	✓				NAVIGATION SYSTEM CAPUT/DOWN FOR LINE 12 Perry & Paul shut whole system down to run the computer through its diagnostic routine. Bridge is navigating by Loran A & the stars! RECORDS being marked ev. 15 min - no nav or airguns.
							All A-OK w/ the Array - Depth Calibration is accurate towing now at 30' Airguns back on at 10 sec rep rate.
✓	✓	✓	✓				c/ EPC to anten key. The Navigators claim to be making beautiful art — 'tis nothing compared to our snowstorm.

GMT				TIME ZONE	SHIPS		NAVIGATION				
DAY	MO	YR	TIME	±	COURSE	SPD	S.P.	LATITUDE (N)	LONGITUDE (W)	DEPTH (m)
27	06	76	0600	+04						650
			0615							502
			0626							
			0630							500
			0632							
			0645							526
			0628		231	3.9		32° 12.11	77° 51.617	
			0647							
			0700		229	3.8		32° 11.976	77° 52.667	194
			0704							
			~~0713~~							
			0715		227	3.8	0506	32° 11.333	77° 53.767	490
			0718							
			0730		227	5.6	0578	32° 10.519	77° 54.757	510
			0746		226	1.1	0653	32° 10.105	77° 55.805	512
			0756							
			0759							
			0800		318	4.3	—	32° 08.963	77° 56.678	524
			0802							
			0808							
			0815							

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							minisparker recorder off for belt change + cleanup – Carbon build up swept out – had been misfiring. no longer doing so. Up at 0632Z on 3.5 KHz ↓ change to ~~100~~ 50 ms CESP Pulse ; minisparker on again
							NAVIGATION DIAGNOSTICS COMPLETED & SATISFACTORY Loran program back on & functioning. S.P. NOT up yet.
							shot point program working ; first sp ~~0453~~ 0452 at 0704 3.5 KHz started squeaking really loud & accompanied by an obnoxious smell. Under the pretense something has mechanically failed, we have turned the recorder off and are getting smiley Frank (0315am?) Scott oiled a part – didn't do the trick (spray lubricant)
							Bleary eyed Frank gave scott the word (from his bunk) "Drive the thing until it drops" So we've (Scott's) sprayed some CONTACT - RE-NU on the underside of the 2 drive shafts (the second one started to squeak, too). The squeaking has stopped. Had to respray the 35 drives (esp left one) w/ CONTACT RE-NU.
							Airguns switched to manual mode to prepare for Line up for Line 13.
							We sign off – Only exciting things happen 12-4 watch
							NEW WATCH
							END LINE 12 START LINE 13
							Distance pulse begins on Airgun

GMT				TIME ZONE	SHIPS		NAVIGATION					
DAY	MO	YR	TIME	±	COURSE	SPD	S.P.	LATITUDE (N)		LONGITUDE (W)		DEPTH (m)
27	Ø6	76	Ø815	+04	318.3	6.0	0050	32°	09.414'	77°	57.538	505
			Ø830		318.2	6.1	0148	32°	10.703'	77	58649	490
			0845		318.2	5.7	0243	32°	11.827	77	59.888	475
			0900		318.2	6.0	0338	32	12.973	78	01.105	475
			0915		318.2	5.9	0434	32	14.157	78	02289	454
			0930		318.2	6.5	0529	32	15.307	78	03.522	450
			0945		318.2	5.8	0627	32	16466	78	04805	412
			1000		318.1	6.8	0726	32	17702	78	06005	431
			1015		318.1	6.8	0823	32	18.868	78	07257	406
			1030		318.2	6.7	0921	32	20019	78	08552	424
			1045		318.1	6.5	1019	32	21226	78	09771	400
			1100		318.1	5.7	1119	32	22415	78	11061	394
			1115		318.1	6.4	1215	32	23578	78	12302	
			1130		318.1	5.4	1309	32	24727	78	13470	302
			1145		318.1	5.9	1400	32	25822	78	14650	284
			1200		318.1	5.8	1493	32	26942	78	15846	270
27	06	76	1215		318.1	5.8	1583	32	28039	78	16989	-
			1230		318.1	5.4	1671	32	29097	78	18111	236
			1245		318.1	5.4	1759	32	30146	78	19146	228
			1300		318.0	5.4	1846	32	31216	78	20332	250
			1315		318.0	5.0	1932	32	32259	78	21405	280
			1330		318.0	5.4	2018	32	33318	78	22543	234
			1345		318.4	5.4	2107	32	34376	78	23668	190
27	06	76	1400		318.0	5.7	2195	32	35418	78	24795	174
			1415		318.0	5.6	2280	32	36457	78	25873	164
			1430		318	5.9	2365	32	37482	78	26749	180
			1445		318.0	5.4	2450	32	38597	78	27979	160
27	06	76	1500		317.9	5.2	2531	32	39495	78	29090	130
			1515		317.9	5.1	2612	32	40490	78	30176	106
			1530		317.9	5.0	2693	32	41436	78	31222	76

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							3.5 Recorder Squeaking again
							Rebman + Wright Trunk channel Sparker. 3.5 KHz shut down 1209 * Resumed 1217 1233 Sparker down + change belt. Resume 1236 1327 Tape replaced. Resumed 1335 1357 Sparker key, =5 (Edge)
							* Possible delay on readout? Some "sticking" then accrual is printed.

GMT				TIME ZONE	SHIPS		NAVIGATION						
DAY	MO	YR	TIME	±	COURSE	SPD	S.P.	LATITUDE (N)		LONGITUDE (W)		DEPTH (M)
27	06	76	1545	+04	317.9	49		32	42466	78	32205	54
			1600		317.9	5.4		32	43419	78	33283	40
			1600									
			1602									
			1615		317.9	5.6	2944	32	44445	78	34437	042 [54]
			1630		317.9	5.6	3035	32	45562	78	35571	016 [32]
			1645 (1632 above)		317.9	6.1	3124	32	46650	78	36733	017 [34]
			1700		317.9	6.0	3216	32	47747	78	37923	019 [38]
			1715		317.8	6.0	3309	32	48869	78	39166	017 [34]
			1730		317.8	6.3	3404	32	50001	78	40350	016 [32]
			1745		317.8	6.0	3500	32	51183	78	41577	042
			1800		317.8	6.2	3598	32	52340	78	42843	029
			1815		317.8	6.3	3695	32	53508	78	44113	030
			1830		317.7	6.5	3797	32	54749	78	45409	048
			1845		317.7	6.3	3898	32	55958	78	46711	027
			1900		317.8	6.5	3997	32	57209	78	48078	026
			1915		317.7	6.7	4095	32	58391	78	49316	028
			1930		317.7	6.7	4196	32	59609	78	50632	020
			1945		317.7	6.7	4297	33	00820	78	51951	015
			2000		317.7	7.2	4399	33	02062	78	53253	017
			2015		317.5	6.3	4501	33	03285	78	54581	015
			2030		317.8	6.4	4606	33	04519	78	55957	015
			2045		318.0	7.2	4710	33	05770	78	57322	015
			2100		317.8	7.3	4818	33	07072	78	58703	012
			2109		197.9	7.7	4882	33	07886	78	59562	
			2115		196.7	5.9	0016	33	07789	78	59974	012

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							1539 Airgun to continuous fire (Shot point routine)
							NEW WATCH: Zupan, Hutchinson, Benzynak
							Noise on 3.5 KHz – changed pens, did NOT change noise appearance – noise is an extremely dark record coming in, despite high threshold low gain, low contrast, & low gray level. The problem recorder.
							1632 - 1716 minisparker shutoff for digging + repairing electrodes
							1719 - 1720 minisparker off for belt change
							~~1820~~ - 1836 airgun system (recorder + gun) not functioning correctly
							new watch Winger - Rebman
							2109 C/C to Bearing 197.9 Firing to continuous 2108
							2126 Sparker paper changed. Return to S/S 2113

2109 End line 13 begin line 14. Gun on 2114

GMT				TIME ZONE	SHIPS		NAVIGATION				
DAY	MO	YR	TIME	±	COURSE	SPD					
27	06	76	2130	+04	197.4	5.7	00°98	33°	06.428.	78°00313.	016
			2145		202.3	5.1	-	33	06426.	78 59703.	017
									.	.	
			2200		197.2	5.5		33°	04890.	78 00926.	015
			2215		198.0	5.4		33	03563.	79 01289.	018
			2230		199.6	5.4		33	02285.	79 01583.	017
			2245		205.4	5.0		33	00094.	79 02036.	021
			2300		207.6	5.3		32	58831.	79 02641.	021
			2307				spot		.	.	
			2315		278.8	6.3		32	58034.	79 03753.	022
			2330		280.6	6.5		32	58062.	79 05478.	019
			2345		278.6	5.6		32	58494.	79 07206.	015
28	06	76	0000		275.8	5.5		32°	58.872.	79° 08.922.	015
			0015		138.0	5.4		32°	59305.	79 10783.	
			0030		137.2	5.6		32	59502.	79 12325.	
			0045		136.4	5.4		32	58341.	79 11727.	015
			0100		136.4	5.8	0167	32	57251.	79 10499.	017
			0115		136.4	5.6	02599	32	56170.	79 09298.	020
			0130		136.4	6.5	03555	32	55046.	79 08043.	022
			0145		136.4	6.4	04450	32	53941.	79 06756.	
28	06	76	0200	+04	136.4	6.1	05488	32	52809.	79 05476.	
			0215		136.4	6.4	06455	32	51627.	79 04191.	
			0230		136.4	7.1	07444	32	50469.	79 02859.	
			0245		136.4	6.9	08444	32	49295.	79 01545.	
			0300		136.4	6.6	09444	32	48114.	79 00224.	
			0315		136.4	7.4	10444	32	46856.	78 58812.	
			0330		136.4	6.7	11444	32	45663.	78 57493.	030
			0345		136.4	6.6	12444	32	44488.	78 56167.	030
28	06	76	0400	+04	136.4	7.2	13655	32	43314.	78 54884.	
									.	.	

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

2114? Airgun Recorder off - Guns lifted for checking

2126 mini sparker down to change paper ROLL #7

2131 " back on. New = ROLL #8

(2145 Navig. system out - disregard.)

navigation system back on 2200

Navigation screwy?

Beginning slow turn to right.

Navigation still a mess

"

"

Navigat: Kidman

0006 3.5 KHz paper change 0016 Z resumed

0013 begin turn

≈0026 start line FAY 017 - 15 after turn 33 00.001 N 79°12010 W

0051 airguns down. Jammed recorder.

Misfiring - late. SP # but no record

0135 3.5 KHz shut down & disconnected

0140 Sub 3.5 KzH for airgun recorder while Supertech talks to it gently.

Tape off 0155 Replaced & running 0204

0304 Maggie's back in town! Frank to the rescue.

*0315 Recording 3.5 KHz steadily.

GMT				TIME ZONE	SHIPS		NAVIGATION						
DAY	MO	YR	TIME	±	COURSE	SPD	S.P.	LATITUDE (N)			LONGITUDE (W)		DEPTH (m)
28	06	76	0400	+04	136	7.2							
			0405										
			0415		136	6.1	1441	32°	42.162'		78	53.568	32
			0430		136	7.2	1543	32	40.972		78	52.235	32
			0445		136	6.8	1641	32	39.752		78	50.874	32
			0500		136	8.2	1741	32	38.570		78	49.582	37
			0515		136	6.1	1845	32	37.397		78	48.254	39
			0518										
			0520										
			0530		136	6.7	1947	32	36.170		78	46.908	37
			0545		136	5.7	2045	32	35.030		78	45.590	40
			0600		136	6.1	2140	32	33.934		78	44.354	42
			0615		136	7.3	2231	32	32.838		78	43.146	45
			0630		136	5.5	2326	32	31.714		78	41.910	59
			0645		136	5.8	2420	32	30.674		78	40.701	132
			0700		136	5.6	2512	32	29.606		78	39.534	192
			0707				2553	32	29.101		78	38.987	
			0715		317	6.8	—	32	28.545		78	38.348	238
			0724		316	6.2	0001	32	29.288		78	38.621	
			0730		316	6.2	0036	32	29.739		78	39.049	200
			0745		317	5.3	0130	32°	30.818		78	40.324	133
			0752										
			0754										
			0800		317	6.5	0228	32°	31.977		78	41.615	
			0815		316.3	6.3	0325	32°	33.173		78	42.822	044
			0830		316.4	6.3	0420	32	34.268		78	44.105	043

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
	✓	✓	✓	✓	✓		NEW WATCH: Hutchinson, Zupan, Bereznak
							The scissors split has been solved: navigation has theirs, seismics has theirs. We are also on the 500 m spacing lines off Cape Ronain.
							new belt for minisparker back up
	✓	✓	✓	✓			Going over the edge = it's about time we see the shelf/slope break.
							START TURN & line up for line 15a S.P. routine off; manual on.
							START LINE 15a, back up the slope
							Couldn't end watch w/out one catastrophe: Shotpoint routine is out. Manual (10 sec) firing back on. PHEW! Back to Auto - S.P. routine
							new watch

GMT				TIME ZONE	SHIPS		NAVIGATION									
DAY	MO	YR	TIME	±	COURSE	SPD	S.P.	LATITUDE (N)			LONGITUDE (W)			DEPTH (m)		
28	06	76	0845	+04	316.5	6.3	0519	32	35	408.	78	45	434.	040		
			0900		316.7	5.8	0618	32	36	541.	78	46	779.	040		
			0915		316.7	5.7	0713	32	37	680.	78	48	045.	041		
			0930		316.5	6.2	0806	32	38	789.	78	49	223.	039		
			0945		316.0	6.4	0900	32	39	929.	78	50	432.	034		
			1000		316.2	5.8	0995	32	41	027.	78	51	708.	032		
			1015		318.8	3.9	1100	32	42	171.	78	53	203.	034		
			1030		317.6	6.3	1182	32	43	190.	78	54	212.	032		
			1044													
			1045		248.5	5.5	1266	32	44	266.	78	55	372.	031		
			1058													
			1100		136.7	7.0	0012	32	43	573.	78	55	853.	031		
			1115		136.8	6.7	0112	32	42	413.	78	54	489.	033		
			1130		136.6	7.2	0211	32	41	198.	78	53	248.	031		
			1145		136.8	6.6	0311	32	40	047.	78	51	896.	032		
28	06	76	1200	+04	136.6	6.5	0413	32	38	816.	78	50	573.	~~033~~		
			1215		136.6	6.0	0515	32	37	598.	78	49	261.	040		
			1230		136.8	6.2	0616	32	36	443.	78	47	904.	040		
			1245		136.8	6.7	0719	32	35	215.	78	46	540.	041		
			1300		136.6	6.9	0825	32	33	944.	78	45	192.	043		
			1315		136.6	6.8	0933	32	32	693.	78	43	794.	037		
			1330		136.6	7.0	1041	32	31	394.	78	42	344.	028		
			1345		137.0	6.8	1148	32	30	142.	78	40	922.	145		
			1351		135.4	6.0	-0016	32	29	555.	78	40	291.			
			1355		135.4	7.3	-0098	32	29	223.	78	39	940.			
			1400		135.5	7.5	0031	32	28	938.	78	39	411.	222		
			1415		136.1	6.7	0125	32	28	076.	78	37	796.	245		
			1430		136.1	7.1	0226	32	26	878.	78	36	491.	260		

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							3.5 kHz down to change paper @ 0930. back on @ 0943
							0943 - 0959 - trouble with plate on 3.5 kHz recorder & paper did not advance properly.
							1021 air gun to 10 sec firing interval
							1021 air gun return to 30 m interval firing
							END OF LINE shut to center firing on air guns turning
							air gun to distance firing begin Line 15b
							Wright + Kohlman
							Strong current? Running consistently w of line slightly
							Pulled sparker + dyjued. Time? 1350?
							Begin turn to resume line 15 @ 1351. On course w of line @ 1355
							1405 Change sparker to edge position
							1422 Tape Changed. Resumed 1432 Z

GMT				TIME ZONE	SHIPS		NAVIGATION										DEPTH (m)
DAY	MO	YR	TIME	±	COURSE	SPD	S.P.	LATITUDE (N)			LONGITUDE (W)						
28	06	76	1445	+04	136.1	6.9	03288	32	25	68.4	78	35	15	2			293
			1500		136.1	7.6	04140	32	24	38.6	78	33	67	4			349
			1515		136.1	6.9	03478	32	23	09.6	78	32	24	3			317
			1530		136.1	7.2	06588	32	21	82.3	78	30	80	3			257
			1545		136.1	7.6	07654	32	20	56.8	78	29	37	4			358
			1600		136.2	7.1	08744	32	19	32.1	78	28	87	3			295
			1615 ~~1600~~		136.2	6.7	09794	32	18	05.9	78	26	49	1			333
			1630 ~~1615~~		136.2	6.7	10863	32	16	80.3	78	25	12	0			315
			1645 ~~1630~~		136.2	6.8	11933	32	15	55.5	78	23	68	8			318
			1700		136.2	6.8	13013	32	14	29.0	78	22	26	0			343
			1715		136.2	7.1	14043	32	13	09.8	78	20	86	6			343
			1721														
			1723														
			1730		136.3	7.0	15123	32	11	87.5	78	19	47	3			358
			1745		136.2	6.9	16163	32	10	59.5	78	18	09	7			371
			1746		~~136.2~~	~~6.9~~	~~17253~~	~~2~~	~~09~~	~~37.7~~	~~78~~	~~16~~	~~59~~	~~5~~			
			1800		136.2	6.9	17253	32	09	37.7	78	16	59	5			410
			1802														
			1804														
			1815		136.1	6.9	18323	32	08	03.9	78	15	26	7			464
			1830		136.2	6.8	19423	32	06	75.9	78	13	81	1			474
			1845		136.2	7.3	20513	32	05	48.7	78	12	38	4			494
			1900		136.5	6.8	21593	32	04	23.2	78	10	92	8			524
			1915		136.4	6.7	22653	32	02	99.0	78	09	55	0			554
			1930		136.9	6.8	23663	32	01	80.3	78	08	20	6			585
			1944		136.9	6.8	24633	32	00	69.2	78	06	98	6			
			1945					32	00	61.0	78	06	89	8			
			2000		229.2	4.8	00703	1	59	96.2	78	07	97	9			631
			2015		229.0	4.6	01413	1	59	22.4	78	09	05	1			628

OPS 12 KHz	3.5KHz	CSP	MAG	GRAV.	SONO	STA	COMMENTS AND OBSERVATIONS
							1441 ~~Pulled sparker & dip reduced~~ Sparker disconnected- Removed ~ 1450
							1530-45 Sparker not recording, occasional streaks only. Frank checking. 1558 / seems OK
							NEW WATCH: Tupan, Hutchinson, Berezniak
							minisparker down 1721-1723 change belts
							o/ 3.5KHz to 1 sec swp, 1 sec rep rate
							1802-1804 change minisparker gages - changed early due to bad roll
							Frank and Perry fiddling w/ knobs on 3.5KHz to get outgoing pulse & gate signal showing. Signal changed from short pulse to CESP - 50 ms. pulse. All well by 1830z
							1944: end of line 15 - start line 16
							change watch MORSE/EDSALL

GMT				TIME ZONE	SHIPS		NAVIGATION				Depth (m)
DAY	MO	YR	TIME	±	COURSE	SPD	SP	LAT	Long		
28	06	76	2030	+04	229.1	4.8	02143	31° 58.370'	78° 10.170		620
			2045		229.2	4.8	02888	31° 57.572	78 11.227		
			2100		229.0	5.3	03633	31 56.786	78 12.329		
			2115		229.1	5.6	04445	31 55.922	78 13.490		623
			2130		229.1	5.4	05245	31 55.072	78 14.640		623
			2145		229.1	5.0	06045	31 54.217	78 15.776		625
			2200		230.6	4.9	06822	31 53.349	78 16.872		630
			2215		232.8	5.0	07600	31 52.522	78 17.998		604 ?
			2222								
			2230		319.1	6.4	~~0001~~	31 52.299	78 19.183		611
			2245		319.0	5.8	01255	31 53.567	78 20.302		587
			2300		319.0	5.9	02133	31 54.610	78 21.463		576
			2315		319.0	5.5	03044	31 55.708	78 22.626		564
			2330		319.0	6.5	03988	31 56.827	78 23.806		553
			2345		319.0	6.8	04963	31 58.108	78 24.945		449
29	06	76	0000	+04	319.0	6.8	05793	31 59.330	78 26.234		490
			0015		319.0	6.3	06694	32 00.317	78 27.512		465
			0030		319.0	7.0	07497	32 01.795	78 28.752		434
			0045		319.0	6.0	08297	32 03.014	78 29.042		443
			0100		319.0	6.2	09096	32 04.491	78 31.229		436
			0115		318.9	6.4	10096	32 05.462	78 32.518		398
			0130		318.9	6.3	11097	32 06.763	78 33.771		446
			0145		318.9	6.3	12094	32 07.889	78 35.002		443
29	06	76	0200	+04	318.9	6.7	13918	32 09.094	78 36.205		393
			0215		318.9	7.0	14918	32 10.295	78 37.486		420
			0230		318.9	5.5	15933	32 11.566	78 38.716		420
			0245		318.9	7.0	16948	32 12.794	78 39.989		420
			0300		318.9	4.9	17949	32 13.882	78 41.149		416
			0315		318.9	7.0	18745	32 14.057	78 42.305		414

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

Perry giving much needed instruction about geophysics (mysteries of).

A bit of wine w/ dinner makes the watch much easier to take!!

2216-2218 Prob w/ 3.5 one of pens hit & bent on 3.5.
Changed pens & back in operation

END Leg 16 - turn to Leg 17 begin Contin firing of air gun
BEGIN LEG 17, begin distance firing on Air Guns

New watch - "Sober Jack" + Wingel

0248 - Airgun to continuous fire to get fix; 005
Resume S/S 0254 ~1730SP#
0258 Tape changed. 0305 Tape resume

GMT				TIME ZONE	SHIPS		NAVIGATION				
DAY	MO	YR	TIME	±	COURSE	SPD	SHOT POINT	LATITUDE (N)	LONGITUDE (W)	DEPTH (m)	
29	06	76	0330	+ 04	318.9	6.2	1947	32 16 31.1	78 43 61.9	399	
			0345		318.8	6.2	2049	32 17 55.5	78 44 87.4	366	
			0349								
			0355								
			0359								
			0400		318.7	2.1		32 18 70.4	78 45 90.4	290	
			0400								
			0415		319	7.5	2228	32 19.832	78 47.316	206	
			0417								
			0430		319	6.6	2331	32 21.459	78 48.984	156	
			0445		319	5.9	2430	32 22.728	78 50.153	268	
			0500		319	5.8	2523	32 23.844	78 51.350	230	
			0515		319	5.9	2607	32 24.859	78 52.388	91	
			0530		319	5.6	2692	32 25.878	78 53.523	72	
			0545		319	7.1	2781	32 26.991	78 54.602	56	
			0600		319	5.3	2864	32 27.989	78 55.669	43	
			0615		319	5.6	2945	32 28.983	78 56.685	39	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							0359 to manual firing SP @ 2588
							c/ EPC minisparker 2GR C.K. 1/4 - 3/4 sec; coming up slope
							Red pen out of ink - primed
							Airguns to manual
✓✓✓							NEW WATCH: Hutchinson, Zupan, Beveznak The stellar watch!
							Well, it's raining buckets of water outside - thunder, lightning, fog horns, after a lobster tail, fillet mignon, wine dinner, and a last night out party. Had a scare 15 min ago. A Lilliputian would have said torrents of water were pouring into the lab. Turns out us homo sapiens detected a trickle of water splashing down behind the 3.5 recorder, due to an air-conditioning line. Maybe now it will warm up in here! Fat chance. A good Saturnale had by all. And ETA is 11^{00} tomorrow a.m.
							c/ minisparker 2RG, E.K. 0 - 1/2 sec up onto shelf.
							One by one, the party goers are fading into the bulkheads. Only the die hards are still at it: 12-4 does it again.

GMT				TIME ZONE	SHIPS		NAVIGATION						DEPTH (m)
DAY	MO	YR	TIME	±	COURSE	SPD	SHOT POINT	LATITUDE (N)			LONGITUDE (W)		
29	06	76	0625	+04	319								
			0630		319	4.2	3025	32°	29.952		78°	57.702	39
			0645		319	4.5	3103	32°	30.855		78°	58.757	46
			0700		319	4.3	3177	32°	31.786		78°	59.658	37
			0715		319	5.1		32°	32.734		79°	00.639	36
			0730		319	5.1	3336	32°	33.751		79°	01.628	32
			0745		319	5.3	3417	32°	34.766		79°	02.605	35
			0800		319	4.9	3502	32°	35.781		79°	03.718	34
			0815		318.8	4.9	3587	32	36.777		79	04.854	27
			0830		318.8	5.5	3670	32	37.779		79	05.898	24
			0845		318.7	5.7	3754	32	38.873		79	06.962	
			0900		318.6	6.4	3842	32	39.965		79	08.040	
			0915		318.5	5.3	3932	32	41.087		79	09.179	
			0930		318.6	6.0	4022	32	42.153		79	10.333	020
			0945		318.7	6.0	4115	32	43.263		79	11.557	022
			1000		318.6	6.1	4207	32	44.411		79	12.692	22
			1015		318.5	6.1	4301	32	45.562		79	13.883	20
			1030		318.6	5.9	4396	32	46.700		79	15.095	21
			1045		318.5	6.0	4489	32	47.846		79	16.275	019
			1100		318.3	6.2	4583	32	48.988		79	17.446	
			1115		318.6	6.1	4676	32	50.109		79	18.659	21
			1130		318.6	6.3	4770	32	51.263		79	19.861	17
			1145		318.8	6.1	4866	32	52.413		79	21.072	14
			1200		317.2	6.5	4964	32	53.621		79	22.308	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
✓	✓	✓	✓	✓			bears gradually getting rougher in the squall - Paul says that's it for checking C_3, raining too hard to get out there
							Scott says he thinks its stopped raining; we're still rolling some.
							Change watch
							3.5 kHz record. stop - noticed at 0845
							3.5 kHz back on operation @ 0853
							3.5 KHz (down) - problems w/ paper (down)
							~~3.5 KHz restore ops~~
							0925 3.5 kHz back on line
							1052 Sparker off for new belt
							1105 Sparker trimmed and in
							1140 - 1149 Sparker recorder not working
							1159-30 cent fire air gun, also end line 17
							1210 All gun secured except NAV.