NORTHSTAR

INS

GS7903-4

79015 nav

THE VOYAGES AND ADVENTURES OF THE NAVIGATION LOG (INS)

R/V DOBIE GILLISS

and the spiders from Mars

PART IV (in which Doris gets her oats)

as directed by that master of Marine Geology
☆ Jim Robb

as produced by that even suffering fellow
☆ John Q. Public

with the original hit by Gordon Lightfoot -
"The Wreck of the James M. Fitzgilliss"

other music by Frank Zappa

Original soundtrack recording available through GSA for $25.00. (Allow 2 yrs for delivery)

COMING SOON TO A THEATER OR PEEP-SHOW NEAR YOU.

STARRING: DAVE (SKITCH) TWITCHELL

JACK (SAMPSON) HAMPSON
MACK FERREBEE
LARRY (SEED) POPPE

JERRY (KILL THE COMMIES) McCARTHY

AL (BIG BAD) GOODMAN

LESTER (NANOOK) NORTH

MITCH (MOLE) HILL

MIKE (GOOD AS) GOLDSTEIN

JOHN (HOSSRARE'S JOHNNY) LARSON

BARRY (GO FOR IT) IRWIN

STEVE (MY DAD JUST BUILDS GOOD TRAILERS) SCHARTZER.

And Introducing → JIM (POOP DECK) DODD as This Year's Model

79015 ILS 100374 7903-4

SAT Posit
OBS TT's
CALC TT's
ΔT.)
CALC POSIT

✓ SAT POSIT — Elev — ALAT ALON
CALC POSIT — RLAT RLON
— Δ POSIT — LATD LOND
Δ meter — DMLA DMLO
✓ OBS TD's — FTDA FTDB
CALC TD's — N1(I)
ΔTD's — N2(I)

~~[illegible]~~

RLAT RLON

NORTHSTAR

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
27	06	79	1300	+ 4						
			1935		209	10.0	41N	13.9	70W	01.3
28	06	79	0700		233	40	39	23.8	72	16.5
			0800		216	4.7	39	19.9	72	19.4
			0900		17	3.2	39	18.9	72	19.9
			0930							
			1000		17	4.0	39	22.29	72	18.49
			1100		138	3.0	39	19.7	72	15.2
			1200		135	3.5	39	17.0	72	12.0
			1300		131	3.7	39	14.5	72	09.2
			1400		138	4.0	39	11.9	72	06.3
			1500		138	4.0	39	09.0	72	02.8
			1506		138	4.6	39	08.67	72	02.44
			1600		226	4.0	39	06.1	72	05.8
			1624		229	4.1	39	04.98	72	07.44
			1700		322	4.4	39	06.4	72	09.7
			1800		314	3.7	39	09.3	72	13.2
			1900		314	4.1	39	12.0	72	16.9
			2000		313	4.0	39	14.9	72	20.5
			2054							
			2104							
			2100		135	3.9	39	17.7	72	23.8
			2200		134	4.8	39	15.4	72	19.9
			2300		135	4.9	39	11.8	72	15.3
			2342		135	5.1	39	09.3	72	12.0
29	06	79	0000		224	5.1	39	08.15	72	13.11
			0000		315	4.9	39	8.3.2	72	13.1
			0100		316	4.8	39	11.3	72	17.5
			0139		316	4.9	39	13.70	72	20.31
			0200		316	4.9	39	12.9	72	22.1

LORAN 9960 (SS-4) - SLAVE X (46-NANTUCKET) - SLAVE Y (43-CAROLINA BCH)

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							Depart Woods Hole Cruise 6S 7903-4
							Start tape #1
							APPROACHING PT. #1 OF LINE #1
							Still Deploying Gear
							return to Chart point 1
							Increase speed to 5 Knots
							change course to 138; reduce to 4 Knots.
							hourly
							hourly
							ON LINE #51
							ON LINE #51
							" " #51
							C/C TO 229° END LINE #51 START LINE #51A
							hourly
							C/C TO 314° End line #51A start line #52
							hourly
							"
							"
							"
							CC to 44° End line #52 start line #52-A
							CC to 135° End line #52-A start line 53
							hourly.
							hourly
							hourly
							CC to 224° end line #53 start line # 53-A
							CC to 315° end line # 53-A start line # 54
							hourly
							ON LINE # 54
							C/C TO 235° END LINE # 54 START LINE # 55
							ON LINE # 55

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
29	06	79	0300		234	4.8	39	10.0	72	27.2
			0338		239	4.8	39	08.15	72	30.39
			0400		220	5.0	39	06.8	72	32.0
			0500		220	5.0	39	02.9	72	36.3
			0600		218	5.0	38	59.1	72	40.4
			0700		218	4.9	38	55.3	72	44.4
			0704		218	4.9	38	54.95	72	44.74
			0800		134	4.6	38	51.9	72	40.5
			0857		131	4.9	38	48.59	72	35.53
			0900		38	5.3	38	48.6	72	35.6
			0924		38	5.1	38	50.23	72	35.8
			1000		312	5.2	38	52.26	72	36.37
			1100		311	5.2	38	55.8	74	41.1
			1200		311	4.8	38	59.3	72	46.2
			1224		311	4.8	39	00.62	72	48.16
			1247		040	4.0	39	01.90	72	47.04
			1300		132	4.5	39	01.5	72	46.1
			1400		132	4.7	38	58.3	72	41.5
			1500		132	4.4	38	55.1	72	36.9
			1541		132	4.6	38	53.16	72	33.91
			1552		132	5.4	38	53.79	72	33.33
			1600		320	5.4	38	54.4	72	33.7
			1605							
			1700		31	5.4	38	58.9	72	38.5
			1747		319	5.7	39	02.29	72	42.28
			1800		224	4.4	39	01.9	72	43.3
			1900		221	4.8	38	58.3	72	47.1
			2000		220	4.6	38	54.9	72	51.1
			2100		223	4.6	38	51.4	72	55.2
			2145		223	4.2	38	48.84	72	58.26

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							ON LINE # 55
							C/C TO 221° END LINE #55 START LINE #56
							ON LINE #56
							ON Line #56
							on line #56
							on line #56
							C/C To 132° End line 56 Start line 57
							C/C To 040° End line 57 start line 57-A
							on line 57-A
							C/C to 309° end line 57-A start line 58
							on line 58
							on line #58
							on line #58
							C/C TO 040° END LINE #58 START LINE #58-A
							C/C TO 131° END LINE #58A START LINE #59
							ON LINE #59
							ON LINE #59
							" " #59
							C/C TO 049° END LINE #59 START LINE #59A.
							C/C TO 320° END LINE #59A START LINE #60
							ON LINE #60
						*	END TAPE #1 - HAD TO BE REMOVED - TAPE USED TOO FAST (ON 'LINE' TAPE FORMAT)
							On line #60 (close to it)
							C/C to 223° End line #60 Start line #61
							on line #61
							on line #61
							On line #61
							on line #61
							C/C to 320° End line #61 start line #61A

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
			2200		310	5.1	38	49.55	72	59.25
			2203		310	5.1	38	49.74	72	59.47
			2246		30	6.0	38	53.21	72	57.05
			2300		142	4.0	38	52.7	72	56.1
30	6	79	0000		142	4.3	38	49.3	72	52.7
			0024		142	4.3	38	47.92	72	51.36
			0100		042	4.8	38	49.4	72	49.2
			0200		042	4.5	38	53.1	72	45.1
			0300		042	4.4	38	56.3	72	41.3
			0346		042	4.4	38	58.83	72	38.38
			0400		321	4.5	38	59.8	72	38.7
			0403		343	4.2	39	00.02	72	38.94
			0500		222	4.6	38	57.6	72	42.0
			0600		215	4.4	38	54.5	72	45.9
			0700		216	4.2	38	51.3	72	49.4
			0735		222	4.3	38	49.53	72	51.62
			0800		313	5.1	38	51.0	72	53.3
			0838		322	4.9	38	53.66	72	56.15
			0900		46	4.3	38	54.8	72	55.0
			0904		46	4.3	38	55.00	72	54.70
			1000		139	4.4	38	52.16	72	51.10
			1100		139	4.0	38	48.8	72	47.5
			1200		139	4.4	38	45.6	72	43.9
			1300		139	4.5	38	42.2	72	40.4
			1400		139	4.3	38	38.7	72	36.6
			1431		139	4.4	38	36.90	72	34.61
			1434		041	4.7	38	36.86	72	34.44
			1500		319	4.6	38	38.8	72	35.7
			1600		319	4.5	38	42.2	72	39.5
			1700		314	5.4	38	45.5	72	43.2

OPS (12 KHz, 3.5 KHz, CSP, MAG, GRAV, SONO, STA)	COMMENTS AND OBSERVATIONS
	on line #61-A
	C/C to 034° End line 61A start line 62
	C/C to 141 End line 62 start line 63
	on line 63
	on line 63
	C/C TO 043 END LINE #63 START LINE #64
	ON LINE #64
	" " #64
	" " #64
	C/C TO 321° END LINE #64 START LINE #64A
	ON LINE #64A
	C/C TO 223° End line #64A start line 65
	on line #65
	on line #65
	on line #65
	C/C TO 322° End line #65 start line #66
	on line #66
	C/C To 048° End line #66 start line 66A
	on line 66A
	C/C to 139° End line #66A start line #67
	on line #67
	on line #67
	on line #67
	" " #67
	" " #67
	C/C TO 041 END LINE #67 START LINE #67A
	C/C TO 319 END LINE #67A START LINE #68
	ON LINE #68
	" " #68
	On line #68

*NSTAR not recording

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
			1800		311	5.2	38	49.3	72	47.4
			1900		309	4.4	38	53.0	72	51.4
			1914							
			2000							
			*2040				38	56.68	72	54.65
			*2047					56.35		54.29
			*2056					55.87		53.75
			*2101		139	4.4		55.59		53.45
			2120		144	4.5	38	54.59	72	52.29
			Backlog							
			2013				38	57.42	72	56.13
			2037				38	56.79	72	54.80
			2200		144	4.5	38	52.5	72	50.0
			2300		139	4.0	38	49.4	72	46.6
01	07		0000		139	2.9	38	46.7	72	43.7
			0100		139	3.9	38	44.0	72	40.8
			0145		139	4.0	38	41.75	72	38.21
			0150		041	5.0	38	41.74	72	37.72
			0200		319	5.0	38	42.4	72	38.1
			0209							
			0300		319	4.6	38	45.9	72	42.1
			0400		319	4.4	38	49.4	72	45.8
			0500		306	4.5	38	52.9	72	49.5
			0600		312	3.9	38	56.1	72	53.2
			0612		313	4.1	38	56.77	72	53.90
			0620		060	4.1	38	57.18	72	53.79
			0627		141	2.8				
			0700		143	4.9	38	55.2	72	51.2
			0800		147	3.6	38	51.7	72	47.2
			0900		139	4.4	38	48.4	72	43.9

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO STA	
						on line #68
						On line #68
						power surge - Northstar time clock down No output
						NSTAR still down.
						Northstar recording initiated.
						C/C to 114° End line #68A start line #68B
						C/C To 139° End line 68B start line #69
						on line #69
						on line #69
						on line #69
						" " #69
						C/C TO 041 END LINE #69 START LINE #69A
						C/C TO 319 END LINE #69A START LINE #70
						ON LINE #70 - SEAS GETTING ROUGHER
						DECREASE SPEED BY 1 KNOT.
						ON LINE #70 - SEAS ARE BETTER.
						" " #70
						on line #70
						on line #70
						C/C to 40° End line #70 start line #70A
						C/C To 139° End line #70A Start line #71
						begin speed increase to 4.5 kn
						on line #71
						on line #71
						on line #71

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
			1000		139	4.0	38	45.0	72	40.2
			1050		139	4.0	38	42.45	72	36.72
			1100				38	42.5	72	36.8
			1200		319	5.9	38	47.0	72	41.7
			1300		320	4.2	38	50.5	72	45.4
			1400		320	4.4	38	53.9	72	49.0
			1456		319	4.3	38	57.19	72	52.64
			1500		041	4.3	38	57.4	72	52.7
			1501		041	4.3	38	57.47	72	52.64
			1600		140	4.4	38	54.5	72	49.0
			1700		143	4.4	38	51.1	72	45.3
			1800		148	4.1	38	47.8	72	41.7
			1900		45	4.4	38	44.4	72	38.1
			1926		134	4.5	38	42.93	72	36.41
			1930		041	4.9	38	42.91	72	36.00
			2000		310	4.5	38	44.9	72	37.8
			2100		314	4.7	38	48.5	72	41.6
			2200		310	4.4	38	52.0	72	45.5
			2300		315	4.7	38	55.4	72	49.3
			2346		314	4.2	38	58.15	72	52.18
			2351		42	5.5	38	58.51	72	52.11
2	7	79	0000		142	4.5	38	58.36	72	51.56
			0100		140	4.6	38	54.7	72	47.7
			0200		140	4.4	38	51.4	72	44.2
			0300		140	4.3	38	48.2	72	40.5
			0400		140	4.7	38	44.7	72	36.8
			0422		139	4.5	38	43.40	72	35.44
			0500		310	4.6	38	45.2	72	36.5
			0600		320	4.8	38	48.7	72	40.4
			0700		316	4.6	38	52.5	72	44.4

OPS (12 KHz, 3.5 KHz, CSP, MAG, GRAV, SONO, STA)	COMMENTS AND OBSERVATIONS
	on line #71
	c/c to 319° End line 71 start line #72
	on line #72
	on line #72 DECREASE SPD BY 1 KT.
	" " #72
	" " #72
	c/c TO 041 END L. #72 START LINE #72A
	ON LINE #72A
	c/c TO 139 END LINE #72A START LINE #73
	ON LINE #73
	On line #73
	on line #73
	on line #73
	c/c To 41° End line #73 start line #73A
	c/c To 319° End line #73A Start line #74
	On line #74
	on line #74
	on line #74
	c/c To 041° End line #74 start line #74-A
	c/c To 139° End line #74-A start line #75
	on line #75
	" " #75
	" " #75
	" " #75
	" " #75
	c/c To 319° End line #75 start line #76
	on line #76 Finally
	on line #76
	on line #76

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
			0800		316	5.1	38	56.5	72	48.7
			0837		320	4.8	38	59.05	72	51.46
			0843		44	5.3	38	59.29	72	51.23
			0845/1000							
			1100		152	4.1	38	52.2	72	43.2
			1200		155	4.6	38	48.7	72	39.7
			1300		140	4.4	38	45.2	72	36.0
			1318		140	4.4	38	44.21	72	34.87
			1400		319	4.5	38	46.2	72	36.5
			1415							
			1500		320	4.4	38	49.4	72	39.7
			1600		320	4.4	38	52.8	72	43.2
			1700		314	4.6	38	56.4	72	47.1
			1752		320	4.7	38	59.75	72	50.56
			1800		136	5.0	38	59.9	72	50.1
			1805		133	4.5	38	59.73	72	49.75
			1900		143	4.9	38	56.6	72	46.1
			2000		139	4.5	38	52.9	72	42.3
			2100		150	5.1	38	49.2	72	38.6
			2200		148	5.0	38	45.5	72	34.7
			2300		144	5.1	38	41.6	72	30.6
3	7	79	0000		142	5.4	38	37.7	72	26.5
			0001		142	5.4	38	37.53	72	26.36
			0005		050	4.8	38	37.48	72	25.98
			0100		320	4.5	38	40.7	72	28.9
			0200		321	4.0	38	44.1	72	32.4
			0300		321	3.8	38	47.1	72	35.7
			0400		321	3.9	38	50.0	72	38.8
			0500		315	4.7	38	53.4	72	42.2
			0600		310	4.4	38	56.7	72	45.7

OPS (12 KHz / 3.5 KHz / CSP / MAG / GRAV / SONO / STA)	COMMENTS AND OBSERVATIONS
	on line #76
	C/C to 041° End line 76 start line 76A
	C/C to 139 End line 76A start line 77
	North star malfunction data invaild (constant)
	on line #77
	On line #77
	ON LINE #77
	C/C TO 320 END LINE #77 START LINE #78.
	LINE #78 - PRETTY FAR OFF - SEE NEXT ENTRY.
	ENDPOINT FOR THIS LINE WAS OFF - CORRECTED.
	ON LINE #78
	" " #78
	on line #78
	C/C TO 139° End line #78 begin line #79
	Swinging to line #79
	on line #79
	on line #79
	On line #79
	on line #79
	on line #79
	on line #79
	on line #79
	C/C TO 050° End line #79 start line #79A
	C/C to 320° End line 79A start line #80
	ON LINE #80
	" " #80
	" " #80
	" " #80
	" " #80
	" " #80

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
3	7	79	0603		308	4.1	38	56.87	72	45.91
			0700		329	3.8	38	54.1	72	49.5
			0800		236	4.3	38	51.0	72	53.0
			0900		243	3.0	38	48.3	72	56.1
			0929				38	47.02	72	57.68
			0940				38	47.22	72	58.13
			1000		29	4.5	38	48.4	72	57.1
			1100		37	4.5	38	51.7	72	53.3
			1124		43		38	52.93	72	51.80
			1129		320		38	53.21	72	51.86
			1200		230	4.5	38	51.94	72	35.25
			1300				38	48.5	72	57.8
			1314					.		.
			1400		215	2.0	38	46.5	72	59.8
			1403		215	3.0		.		.
			1451					.		.
			1500		043	1.6	38	49.1	72	57.1
			1600		030	2.0	38	50.2	72	55.9
			1700		041	2.0	38	51.5	72	54.3
			1746					.		.
			1800		036	0.9	38	52.8	72	52.9
			1826		036	1.0	38	53.10	72	52.44
			1900		211	1.2	38	53.2	72	52.4
			2000				38	52.3	72	53.4
			2100				38	51.5	72	54.3
			2200		248	1.2	38	50.5	72	55.4
			2300		233	2.4	38	49.2	72	57.0
			2355				38	47.69	72	58.76
			0002				38	47.43	72	58.65
4	7	79	0000		37	3.9	38	47.6	72	58.8

3 July 1853 - 2350 553

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							C/C to 223° End line #80 Start line #81
							On line #81 Seas seem to be getting rougher.
							On line #81
							on line 81
							C/C to 324° End line 81 start line 81A
							C/C to 043 End line 81A start line 82
							On line 82
							on line 82
							C/C to 320°
							C/C to 223°
							ON LINE #83
							" " #83
							SLOW TO 2 KTS - TO FULL IN SEISMICS - DEPLOY SIDE SCAN SONAR
							STILL EXCHANGING EQUIPMENT
							C/C TO 043 - TURNING AROUND TO GO BACK OVER LINE #83 - OPPOSITE DIRECTION.
							SIDE-SCAN OVER - SPEED BACK DOWN TO 2.0 KTS.
							RETRACING LINE #83
							" " #83
							" " #83
							Slow to 1 knot
							retracing line #83
							begin loop for another pass at #83
							retracing line #83 again
							" " #83
							" " #83
							" " #83
							" " #83
							C/C to 112° end line 83 start line 83A
							C/C to 043° end line 83A start line 82/retrace
							On line 83-A see C/C

TEST

~~3 July 553~~ ~~1450-2355~~

553

WHEN PROCESSING THIS DATA, DELETE THIS PART OF THE TAPE.

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
04	07	74	0021							
			0100		042	2.2	38	49.4	72	56.0
			0200		043	2.2	38	51.2	72	53.8
			0300		043	2.2	38	52.8	72	51.8
			0400		042	1.0	38	54.1	72	50.1
			0500		046	1.2	38	55.0	72	49.2
			0600		037	1.7	38	56.2	72	47.9
			0700		046	1.8	38	57.4	72	46.4
			0800		031	1.2	38	58.5	72	45.1
			0900		34	2.2	39	00.0	72	43.1
			1000		313	1.9	39	01.5	72	41.6
			0954				39	01.42	72	41.64
			1025							
			1100		220	2.5	39	00.5	72	44.0
			1200				38	58.5	72	46.1
			1300		223	2.2	38	57.2	72	47.9
			1400		223	2.3	38	55.5	72	50.0
			1420							
			1500		223	2.1	38	54.0	72	51.8
			1530							
			1537							
			1539							
			1600		223	2.0	38	52.5	72	53.6
			1700		205	1.2	38	51.5	72	54.8
			1800		226	1.8	38	50.2	72	56.1
			1900		220	1.8	38	48.9	72	57.8
			1938		220	2.1	38	48.01	72	58.86
			2000		044	3.0	38	48.4	72	57.5
			2100		023	2.7	38	51.0	72	54.3
			2203		27	2.1	38	52.82	72	52.02

SS3 1853 3 July –

SS4 0010 - ~~0400~~

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							REDUCE SPEED BY 1½ KTS
							ON LINE SS-4 (RETRACTING LINE 82 WITH SIDE SCAN SONAR)
							ON LINE SS-4 - SIDE SCAN SONAR.
							" " SS-4
							" " SS-4
							" " SS-4
							" " SS-4
							" " SS-4
							" " SS-4
							" " SS-4.
							in Course change
							C/C to 223° end line SS4 start line SS5
							steady on course 223° course change complete
							on line SS5
							on line SS5
							on line SS5 – INCREASE THEN DECREASE SPEED BY 1 KT.
							" " SS5
							SLOWED DOWN A BIT FOR CLOSE ENCOUNTER OF THE THIRD KIND.
							ON LINE " SS-5
							SPEED UP APPROX. 1 KT TO GET SIDE SCAN FISH UP.
							INCREASE SPEED ANOTHER 1 KNOT
							DROP SPEED BACK TO 2 KNOTS.
							ON LINE SS-5
							" " SS-5
							" " SS-5
							" " SS-5
							C/C TO to 43° end line SS-5 start line # 84
							on line # 84 (Up to 4knots)
							on line #84 reduce to 2knots.
							C/C to 223° 180° to continue line 84

~~0010 0400~~ 0954 4 July

SS4 ~~0002~~ 0002 ~~1020 1938~~

SS5 1025-1938 4 July 99

Next Note Seismics Deployed Use following data

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
			2200		22	2.1	38	52.65	72	52.28
			2300		243	2.0	38	51.8	72	53.4
5	7	79	0000		235	2.6	38	50.3	72	55.2
			0053							
			0100		223	3.0	38	48.7	72	57.2
			0124		223	3.0	38	47.78	72	58.27
			0200		043	1.8	38	48.2	72	57.8
			0300		043	1.9	38	49.4	72	56.3
			0400		043	2.1	38	50.9	72	54.6
			0500		048	2.3	38	52.6	72	52.5
			CONTINUE							
			0535		044	2.0	38	53.85	72	51.48
			0552							
			0600		023	3.1	38	54.1	72	51.1
			0651							
			0700				38	56.4	72	48.3
			0800			4.0	38	59.2	72	44.8
			0857				39	01.77	72	41.88
			0900		126	4.9	39	01.3	72	40.95
			0905				39	01.00	72	40.56
			1000		227	4.4	38	57.9	72	43.9
			1100		219	4.6	38	54.6	72	47.9
			1156				38	51.50	72	51.53
			1200		185	4.5	38	51.3	72	57.7
			1246				38	48.92	72	48.91
			1300		042	3.9	38	49.3	72	47.9
			1400		043	4.0	38	52.3	72	44.3
			1500		043	3.9	38	55.1	72	41.1
			1600		043	4.0	38	57.9	72	37.8
			1602		043	4.0	38	58.06	72	37.39

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							On line 84
							On line 84
							on line 84
							INCREASE SPEED 1½ KT.
							ON LINE 84 WITH 'DEEP HYDROPHONE' - STARBOARD LIMOR SHOE LACE.
							C/C TO 043° - 180° TURN TO ALTARCE LINE 84 ONE MORE TIME!
							ON LINE #84
							" " #84
							" " #84
							" " #84 Loran getting a little noisy beginning
							gradual sweep to line #85
							On line #85
							Increase speed from .7kn to 3. kn.
							On line #85
							Speed increase to 4.5 in 20 min. Main Engine Needed.
							On line #85
					*		on line #85 (INS down) Note - NSTAR not on CASST from 0735 to 1925
							C/C To 137° and line #85 start line #85A
							on line #85A
							C/C to 223° and line 85-A start line 86
							on line #86
							on line #86
							C/C To 138° end line #86 start line #87
							in course change for line #87
							C/C TO 043° END LINE #87 START LINE #88
							ON LINE #88
							" " #88
							" " #88
							" " #88
							C/C TO 141 END LINE #88 START #88 A

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
5	7	79	1613		045	4.7	38	57.64	72	36.73
			1630							
			1700		226	4.5	38	54.9	72	39.5
			1800		224	4.6	38	51.6	72	43.5
			1900		221	4.5	38	46.2	72	47.6
			05/0735	—	05/1925					
			1925							
			2000		228	4.2	38	44.7	72	51.7
			2018		238	4.4	38	43.75	72	52.80
			2027		129	5.4	38	43.13	72	52.66
			2100		9	2.0	38	44.1	72	51.0
			2200		344	2	38	47.2	72	47.4
			2360		384	3	38	50.4	72	43.5
			2330							
06	07	79	0000		38	4.7	38	53.7	72	39.5
			0048		044	4.8	38	56.51	72	36.07
			0100		138	4.5	38	56.1	72	35.2
			0105		140	4.2	38	55.75	72	34.80
			0200		222	4.4	38	52.8	72	37.8
			0300		222	4.2	38	49.7	72	41.5
			0400		222	4.2	38	46.5	72	45.2
			0500		225	4.0	38	43.2	72	49.1
			0525		222	4.7	38	41.85	72	50.72
			0538		111	5.1	38	41.00	72	50.16
			0600		042	4.3	38	42.0	72	48.6
			0700		045	4.5	38	45.3	72	44.9
			0800		042	4.9	38	48.7	72	40.9
			0900		39	4.5	38	51.1	72	36.8
			0944		36	4.3	38	54.62	72	33.89
			0956		144	5.6	38	54.09	72	32.95

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							C/C to 222° End line #88A start line #89
							Running to left of line - Coast Guard on Stb
							On line #89
							" " #89
							" " #89
						*	NSTAR Not Recorded on tape — printout
							exists, however 12 hours
							NSTAR Recording again.
							(On line #89 / CC to 137° end line 89 start line #89A
							CC to 043° end line 89A start line 90
							on line #90
							on line #90
							on line #90
							~~paper change gravity printer~~ END TAPE #4 7/4 0000Z TO 7/5 2355Z
							on line #90
							C/C TO 141° END LINE #90 START LINE #90A
							ON LINE #90 A
							C/C TO 223° END LINE #90A START LINE #91
							ON LINE #91
							" " #91
							" " #91
							" " #91
							C/C to 137° End line #91 start line #91A
							C/C to 43° End line #91A Start line #92
							On line #92
							" " #92
							" " #92
							" " #92
							C/C to 141 end line 92 start line 92A
							C/C to 223 end line 92A start line 93

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
			1000				38	53.3	72	33.0
			1100		230	4.5	38	50.4	72	36.9
			1200		223	4.1	38	47.1	72	40.8
			1300		223	4.6	38	43.8	72	44.6
			1400		220	4.6	38	40.4	72	48.6
			1401		223	4.6	38	40.23	72	48.76
			1427		137	4.5	38	38.61	72	47.22
			1500		042	4.5	38	40.0	72	45.2
			1600		043	4.5	38	43.2	72	41.4
			1700		041	4.4	38	46.3	72	37.8
			1800		040	4.5	38	49.7	72	33.8
			1844		042	4.4	38	51.28	72	31.14
			1857		144	5.3	38	51.31	72	30.8
			1900		227	4.8	38	51.0	72	30.2
			2000		220	4.2	38	47.8	72	34.0
			2100		223	4.5	38	44.3	72	38.0
			2200		228	4.3	38	41.1	72	41.8
			2300				38	38.6	72	45.3
			2308				38	37.70	72	45.82
			2328				38	36.35	72	45.29
7	7	79	0000		43	4.5	38	38.5	72	42.8
			0100		043	4.7	38	42.1	72	38.8
			0200		043	4.7	38	45.7	72	34.6
			0204		043	4.7	38	46.00	72	34.22
			0300		231	3.6	38	48.7	72	36.6
			0400		320	4.3	38	52.1	72	40.0
			0500		321	4.2	38	55.2	72	43.4
			0600		320	4.0	38	58.4	72	46.7
			0651		321	4.6	39	01.23	72	49.69
			0700				39	01.3	72	49.0

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA
						on line 93
						on line 93
						On line 93
						ON LINE 93
						ON LINE #93
						C/C TO 137° END LINE #93 START LINE #93A
						C/C TO 043° END LINE #93A START LINE #94
						ON LINE #94
						" " #94
						" " #94
						" " #94
						C/C to 140° End line #94 start line #94A
						C/C to 223° End line #94A start line #95
						Swinging onto line #95
						on line #95
						on line #95
						on line #95
						on line #95
						C/C to 137 end line #95 start line #95A
						C/C to 043 end line #95A start line 96
						On line #96.
						ON LINE #96
						" " #96
						C/C TO 321° END LINE #96 START LINE #97
						ON LINE #97
						" " #97
						" " #97
						" " #97
						C/C to 140° End line #97 start line #98 (Delayed by lake)
						On line #98

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
7	7	79	0800		142	4.6	38	57.7	72	45.1
			0900		132	4.1	38	54.1	72	41.5
			1000		133	3.9	38	50.9	72	38.0
			1100		133	4.3	38	47.7	72	34.7
			1140				38	45.43	72	32.40
			1200		321	4.1	38	46.2	72	32.4
			1300		321	4.3	38	49.6	72	35.9
			1400		321	4.4	38	53.0	72	39.4
			1500		321	4.1	38	56.1	72	42.8
			1600		320	4.4	38	59.6	72	46.4
			1700		322	5.1	39	03.4	72	50.4
			1710		322	4.6	39	04.12	72	51.14
			1735		137	4.5	39	03.6	72	49.8
			1800		131	4.5	39	02.2	72	48.2
			1900		136	4.5	38	58.9	72	44.8
			2000		141	4.5	38	55.4	72	41.2
			2100		136	5.0	38	51.7	72	37.3
			2200		133	4.7	38	47.9	72	33.4
			2223				38	46.54	72	31.95
			2300		222	4.4	38	44.5	72	34.0
			2355					.		.
08	07	79	0080		230	4.6	38	41.2	72	37.3
			0100		221	4.6	38	37.8	72	41.9
			0105					.		.
			0130		220	5.0	38	35.93	72	44.10
			0140		140	5.2	38	35.68	72	43.50
			0200		043	5.7	38	36.3	72	41.8
			0300		043	5.1	38	40.3	72	37.1
			0400		043	4.9	38	44.0	72	32.8
			0456		043	4.7	38	47.34	72	28.75

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							On line #98
							On line #98
							On line #98
							On line 98
							C/C to 321° end line 98 start line 99
							On line 99
							ON LINE #99
							ON LINE #99
							" " #99
							" " #99
							" " #99
							c/c to 141° End line #99 Start line #100
							On line #100
							" " #100
							" " #100
							" " #100
							" " #100
							on line #100
							C/C to 223° end line #100 start line #101
							on line #101
							Change NS remove tape #5 7/6 0000 - 7/7 2355
							On line #101
							ON LINE #101
							INCREASE SPEED TO 5 KTS
							c/c to 138° END LINE #101 START LINE #101A
							c/c to 043° END LINE #101A START LINE #102
							ON LINE #102
							ON LINE #102
							ON LINE #102
							c/c to 321 End line #102 begin line #102A

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
8	7	79	0500		323	4.3	38	47.6	72	28.7
			0511		325	3.8	38	48.18	72	29.22
			0537		223	5.2	38	46.77	72	31.12
			0546		313	4.0	38	47.03	72	31.76
			0600		321	4.5	38	47.8	72	32.7
			0700		320	4.3	38	51.4	72	36.9
			0800		317	4.1	38	54.5	72	39.6
			0900		327	4.9	38	58.0	72	43.3
			1000		330	5.0	38	01.7	72	47.2
			1007				38	02.2	72	47.7
			1016				38	02.7	72	47.7
			1100		130	4.3	38	00.6	72	45.2
			1200		135	4.3	38	57.3	72	41.8
			1300		140	4.4	38	54.2	72	38.5
			1345		141	4.4	38	51.7	72	35.9
			1425					.		.
			1435					.		.
			1445					.		.
			1500		141	4.7	38	47.4	72	31.4
			1525		140	4.6	38	45.87	72	29.77
			1600		321	4.1	38	47.4	72	30.8
			1700		320	4.1	38	50.6	72	33.9
			1714		.			.		.
			1800		320	4.7	38	54.0	72	37.5
			1841		321	3.1		.		.
			1900		325	3.1	38	57.24	72	40.84
			1906		215	3.5	38	57.23	72	41.21
			2000		231	2.6	38	55.4	72	43.6
			2100					.		.
			2100		240	1.3	38	53.9	72	45.3

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							On line # 102A
							C/C to 223° End line # 102A start line #103
							C/C to 321° End line #103 start line #104
							On line #104
							On line #104
							" " #104
							" " #104
							" " #104
							" " #104
							C/C to 042° end line 104 start line 104A
							C/C To 141° end line 104A start line 105
							On line #105
							On line #105
							ON LINE #105
						*	NO PRINTOUTS AFTER 13:45. (NO TAPE RECORD ERROR) RESTART IMSAI PROGRAM 14:07, DIDN'T HELP.
							PRINTOUTS RESUME - NO IDEA WHAT WAS WRONG - PULLED POWER OF INTERFACE AND THEN IN AGAIN
							NOTHING PRINTED AGAIN - TRIED PULLING PLUG AGAIN AT 1440
							STARTED PRINTING AGAIN. → NOTE → GARBAGE WRITTEN ON TAPE TWO TIMES WHEN INTERFACE PLUG WAS PULLED
							ON LINE #105
							C/C TO 221° END LINE #105 START LINE #106.
							ON LINE #106 NSTAR O.K.
							" " #106
							Speed increase to 4.5 knots
							On line #106
							Cut speed to 3 knots
							C/C to 223° End line #106 begin line #107-DH Deep Hydrophone
							On line #107-DH
							" " #107-DH
							Change gravity tape remove #9 Insert #10
							On line #107-DH

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
			2200		230	2.1	38	52.6	72	47.0
			2300		227	2.1	38	51.0	72	48.9
9	7	79	0000		225	2.0	38	49.5	72	50.5
			0100		223	2.0	38	48.0	72	52.5
			0200		226	2.1	38	46.4	72	54.5
			0223		225	2.0	38	45.88	72	55.27
			0241		216	4.4	38	46.44	72	56.47
			0246					.		.
			0300		043	2.0	38	47.1	72	56.2
			0400		044	2.5	38	48.6	72	54.4
			0412					.		.
			0422					.		.
			0500		030	4.3	38	49.7	72	52.9
			0600		040	2.2	38	51.3	72	51.0
			0700		036	1.8	38	52.8	72	49.2
			0800		036	1.6	38	54.0	72	47.8
			0900		043	1.7	38	55.2	72	46.3
			1000		043	1.8	38	56.4	72	44.9
			1100		043	1.8	38	57.8	72	43.3
			1126		043	1.8	38	58.34	72	42.48
			1200		320	1.9	38	59.3	72	43.0
			1300		324	4.0	38	01.1	72	45.2
			1342				39	02.82	72	46.34
			1400				39	03.61	72	46.63
			1400		143	53	39	03.5	72	46.5
			1500		135	4.5	38	59.5	72	42.9
			1600		143	4.3	38	56.6	72	39.5
			1700		141	4.1	38	53.3	72	36.1
			1800		144	3.8	38	50.2	72	32.8
			1822					.		.

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							On line # 107 DH
							On line # 107DH
							On line # 107DH
							OH LINE # 107-DH.
							OH LINE # 107-DH.
							C/C TO 317 END LINE #107-DH START #108-DH HYDROPHONE UP FOR THIS LINE SPEED UP TILL #109-DH.
							C/C TO 043 END LINE #108-DH START LINE #109-DH.
							SLOWING DOWN TO DEPLOY HYDROPHONE - REMAIN AT 2 KN FOR THIS LINE
							OH LINE #109-DH.
							" " #109-DH - SLOW DOWN TO 2.0 KT.
							Speed decrease to 1 half (½) knot
							speed increase back to 2 knots
							On line #109-DH
							" " #109-DH
							" " #109-DH
							" " #109-DH
							OH LINE #109-DH
							" " #109-DH
							" " #109-DH
							C/C TO 321° END LINE #109-DH START LINE #110 - INCREASE SPEED TO 4.5 KN
							On line 110 DH;
							On line 110
							C/C to 042° end line #110 start line #110A
							C/C to 141° end line #110A start line 111
							On line 110A
							On line ~~110~~ 111
							On line #111
							" " #111
							" " #111
							Speed back up to 4.5 knots

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
9	1	79	1855		145	4.2	38	47.11	72	29.56
			1900		008	4.7	38	47.2	72	29.3
			1910		328	4.4	38	47.88	72	29.78
			1939				38	49.4	72	31.2
			2000				38	48.0	72	32.7
			2034				38	48.4	72	30.4
			2051				38	49.3	72	31.1
			2100		316	4.6	38	49.9	72	31.6
			2200		327	5.1	38	53.8	72	35.7
			2300		330	5.3	38	57.7	72	39.8
10	1	79	0005		312	4.6	39	02.0	72	44.5
			0032		321	4.5	39	03.64	72	45.16
			0100		141	4.5	39	03.1	72	44.8
			0200		141	4.3	38	59.7	72	41.2
			0300		141	4.5	38	56.4	72	37.8
			0400		141	4.6	38	52.8	72	34.1
			0500		141	4.8	38	49.3	72	30.2
			0517		142	4.8	38	48.18	72	29.08
			0527		336	4.9	38	48.56	72	28.86
			0600		319	5.8	38	50.8	72	31.1
			0700		314	4.7	38	54.6	72	35.0
			0800		320	4.5	38	58.2	72	38.9
			0900		322	4.8	39	01.8	72	42.6
			0943				39	04.45	72	45.40
			1005				39	06.00	72	46.21
			1000				39	05.6	72	46.0
			1100		218	5.4	39	02.6	72	50.1
			1200		218	5.4	38	58.3	72	54.5
			1300		218	5.7	38	54.1	72	58.9
			1344		218	5.4	38	50.9	73	02.0

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA
						C/C to 321° End line #111 begin line #112
						turning to line #117
						On line #112 (Declared by lab, still .15 miles off)
						Going to see The Tall ship - will return
						still looking
						going back
						correct to original course ; line #112
						on line #112
						on line #112
						on line #112
						on line #112
						C/C to 141° END LINE #112 START LINE #113
						on LINE #113
						" " #113
						" " #113
						" " #113
						" " #113
						C/C to 321° End line #113 start line #114
						On line #114
						" " #114
						" " #114
						" " #114
						" " #114
						C/C to 339° end line #114 start line #114A
						C/C to 218° end line 114A start line #115
						on line 114A
						on line 115
						on LINE #115
						on LINE #115
						END OF SURVEY SLOW TO 2 KTS TO PULL IN EQUIPMENT
						C/C to 230° TO HEAD FOR NORFOLK.

GMT				TIME ZONE	SHIPS		NAVIGATION
DAY	MO	YR	TIME	±	COURSE	SPD	
10	07	79	2000				
11	07	79	1040				

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							External Emc plug into N. Star for Rho Rho
							IN MONROLIC HARBOR - END TAPE # 7

INS

OPS									SERVATIONS
	12 KHz	3.5 KHz	CSP	MAG	GRAV	SOND	STA		

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
27	06	79	1306							
			1917							
28	06	79	0647							
			0700		233.0		39	22.8	72	16.5
			0734		211.5		39	21.4	72	18.2
			0800		216.7		39	19.9	72	19.4
			0900		173.2		39	18.8	72	19.9
			0910							
		~	0930							
			1000		174.0		39	22.25	72	18.45
			1100		138.0		39	19.7	72	15.2
			1130							
			1200		135.5		39	17.5	72	12.0
			1219				39	16.3	72	11.0
			1300		131.7		39	14.6	72	09.2
			1400		138.0		39	11.9	72	06.2
			1500		138.0		39	09.1	72	02.8
			1506		138.0		39	08.73	72	02.39
			1508		229.0		39	08.4	72	02.2
			1600		226.0		39	06.0	72	05.6
			1610		231.2		39	05.5	72	06.3
			1624		229.1		39	04.9	72	07.3
			1653		314.1		39	06.1	72	09.3
			1700		322.4		39	06.4	72	09.7
			1757		314.7		39	09.2	72	13.6
			1800		314.7		39	09.3	72	13.1
			1900		314.1		39	11.9	72	16.8
			1922		315.1		39	13.0	72	18.2
			2000		313.0		39	14.8	72	20.5
			2054				39	17.36	72	23.31

LORAN = 9960 (SS 4) - SLAVE X (26 - MANITUCKET) - SLAVE Y (43 - CAROLINA BCH)

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							DEPART WOODS HOLE CRUISE GS 7903-4
							START TAPE #1
							START PLOTTER - SCALE = 1:400,000 ORIENTATION = 1
							APPROACHING PT #1 LINE #1
							SAT. UPDT - Δ LAT 0.0006'S Δ LONG - 0.0444'E ΔTIME = 0
							Still deploying Gear
							Return to chart pt A
							Sat data 30200 not updated (within 20 μ.)
							Increase spud to 5 Knots.
							Course change to 138°; reduce to 4 knots.
							hourly
							Sat data 30140 not updated (6° angle)
							hourly
							Sat data 30120 "Updated"
							ON LINE #51
							ON LINE #51
							" " #51
							C/C TO 229° END LINE #51 START LINE #51A
							SAT. UPDATE - Δ LAT = 0.1544'S Δ LONG = 0.0057'E ACCEPTED CORA-CORB.
							hourly
							Sat Update - Δ Lat = 0.0244'N ΔLON = 0.0289'E
							C/C TO 314° End line #51A Start line #52
							Sat Update - Δ Lat = 0.0366'S ΔLON = 0.0856'W accepted CORA, CORB
							hourly
							Sat Update Δ Lat = 0.0482'N ΔLON = 0.0611'E accepted CORA-CORB
							hourly
							"
							Sat Update Δ Lat = 0.0354'S ΔLON = 0.0006'W
							hourly
							CC TO 44° end line #52 Start line #52A

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
6	28	79	2104				39	17.88	72	23.52
			2117				39	17.6	72	22.6
			2100		1353.9		39	17.7	72	23.7
			2200		1344.8		39	15.4	72	19.8
			2300		1354.9		39	11.9	72	15.2
			2342		1355.1		39	09.3	72	11.9
6	29	79	0000		2245.1		39	08.16	72	12.99
			0000		3154.9		39	08.2	72	12.9
BACK LOG →			2359					.		.
			0015					.		.
			0105		3164.8		39	11.6	72	17.7
			0113		3164.9		39	12.0	72	18.3
			0139		3164.9		39	13.56	72	20.14
			0200		3164.9		39	12.8	72	22.0
			0259				39	10.0	72	27.0
			0300		2374.8		39	10.0	72	27.1
			0338		2344.8		39	08.10	72	30.32
			0400		2205.0		39	06.8	72	31.9
			0408		2265.2		39	06.2	72	32.5
			0436		2254.9		39	04.4	72	34.6
			0450		2235.1		39	03.5	72	35.6
			0500		2205.0		39	02.9	72	36.2
			0557		2195.0		38	59.3	72	40.2
			0600		2185.0		38	59.1	72	40.4
			0621		2185.0		38	57.7	72	41.8
			0700		2184.9			.		.
			0704		2184.9		38	54.8	72	44.3
			0705		2184.9		38	54.6	72	44.5
			0800		1394.6		38	51.9	72	40.4
			0857		1314.9		38	48.66	72	35.88

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							CC to 135° end line #52-A start line 53
							Sat update DLAT = 0.0535N DLON = 0.0632E accepted
							hourly.
							"
							hourly
							C/C to 224° End line # 53 start #53-A
							C/C To 315 End line #53-A start line #54
							hourly
							END OF BELL GRAVITY TAPE #1 - START TAPE #2 AT 6/29 0000 Z
							ON HP 9825 - STARTED TRANSMISSION - TURNED NAV PRINT ON.
							ON LINE #54
							SAT. UPDATE - Δ LAT = 0.0804'S Δ LON = 0.0115'W ACCEPT NEW CORA-CORB.
							C/C TO 235° END LINE #54 START LINE #55
							ON LINE #55
							SAT. UPDATE Δ LAT: 0.0128'N Δ LON = 0.0193'W ACCEPTED NEW CORA-CORB
							ON LINE #55
							C/C TO 221° END LINE #55 START LINE #56
							ON LINE #56
							Sat Update ΔLat = 0.0109'S Δ lon = 0.0334'E Accepted New CORA-CORB
							Sat Recieved NO UPDATE
							Sat Recieved NO UPDATE
							On line # 56
							Sat. Update ΔLat = 0.0624'N Δ LON = 0.0527'W Accepted CORA-CORB
							On line # 56
							Sat. Recieved Fantastic but NO UPDATE
							On line # 56
							C/C To 132° End line #56 Start line # 57
							INS Teletype refuses input INS not down though
							On line # 57
							C/C to 040° and line 057 start line 57-A

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
29	6	79	0900		338	5.3	38	48.5	72	35.6
			0924		338	5.1	38	50.16	72	33.88
			0957				38	52.0	72	36.4
			1000		312	5.2	38	52.2	72	36.6
			0806							
			1100		311	5.2	38	55.7	72	41.3
			1200		311	4.8	38	57.2	72	46.4
			1224		311	4.8	39	00.52	72	48.35
			1226		040	4.7	39	00.6	72	48.2
			1247		040	4.0	39	01.82	72	46.99
			1300		132	4.5	39	01.5	72	46.0
			1302							
			1400		132	4.7	38	58.2	72	41.4
			1500		132	4.4	38	55.1	72	36.9
			1522		132	4.6	38	53.9	72	35.2
			1541		132	4.6	38	53.00	72	33.82
			1552		132	5.4	38	53.69	72	33.25
			1600		320	5.4	38	54.3	72	33.6
			1700		313	5.4	38	58.9	72	38.4
			1705		313	5.4	38	59.2	72	38.8
			1747		319	5.7	39	02.2	72	42.2
			1751		224	5.2	39	02.4	72	42.6
			1800		224	4.4	39	01.9	72	43.2
			1814		220	4.4	39	01.2	72	44.2
			1900		221	4.8	38	58.3	72	47.2
			1955		223	4.5	38	55.2	72	50.9
			2000		220	4.6	38	54.9	72	51.2
			2100		223	4.6	38	51.4	72	55.2
			2145		223	4.2	38	48.91	72	58.28
			2200		310	5.1	38	49.6	72	59.3

backing

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							on line 52-A
							C/C to 309° from line 57-A to line 58
							Sat update CORA = 1.65 CORB = 1.28 ΔI = 0 ΔLAT = .115 DLON = .2
							on line #58
							Lost Sat update AGC not properly reset
							on line #58
							on line #58
							C/C TO 040° END LINE #58 START LINE #58A
							SAT. UPDATE - Δ LAT = 0.0289'N Δ LONG = 0.2658'E ACCEPTED NEW CORA-CORB
							C/C TO 131° END LINE #58A START LINE #59
							ON LINE #59
							SATELLITE DATA - SHOWS US 90 FT. OFF - NO UPDATE NECESSARY.
							ON LINE #59
							" " #59
							Sat. Update ΔLat = 0.0328'S ΔLON = 0.0373'E Accepted New CORA-B
							C/C TO 029 END LINE #59 START LINE #59A
							C/C TO 320° END LINE #59A START LINE #60
							ON LINE #60
							On Line #60 (or close to it)
							Sat recieved data lost No update
							C/C To 223° End line #60 Start line #61
							Sat Update Δ Lat = 0.0611'N ΔLon = 0.0328'W Accepted New CORA-CORB
							On line #61
							Sat Update ΔLat = 0.0514'N DLON = 0.0793'W Accepted New CORA-CORB
							on line #61
							Sat recieved Δ = 77 No Update
							on line #61
							on line #61
							C/C to 32° End line #61 Start line #61A
							on line 61-A

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
			2203		310	5.1	33	49.76	72	59.51
			2130				38	49.9	72	57.1
			2246		30	6.0	38	53.22	72	57.12
			2300		142	4.0	38	52.7	72	56.2
6	30	79	0000		142	4.3	38	49.3	72	52.7
			~~0012~~					.		.
			0024		142	4.3	38	47.97	72	51.43
			0046				38	48.8	72	49.7
			0100		042	4.8	38	49.7	72	48.9
			0157					.		.
			0200		042	4.5	38	53.0	72	45.0
			0300		042	4.4	38	56.2	72	41.2
			0317					.		.
			0344		042	4.4	38	58.74	72	38.34
			0400		321	4.5	38	59.7	72	38.7
			0403		343	4.2	38	59.9	72	38.9
			0403		343	4.2	38	59.9	72	38.9
			0500		222	4.6	38	57.5	72	41.9
			0510		224	4.5	38	56.9	72	42.1
			0550		226	4.4	38	54.9	72	45.3
			0600		215	4.4	38	54.5	72	45.9
			0700		216	4.2	38	51.3	72	49.4
			0707		215	4.2	38	50.8	72	49.4
			0735		222	4.3	38	49.4	72	51.7
	NOTE		0744					.		.
		CONTINUE.						.		.
			0800		313	5.1	38	50.9	72	53.4
			0803					.		.
			0830					.		.
			0838		322	4.9	38	53.45	72	56.15

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							C/C To 034° End line #61A start line #62
							Sat update not taken Course change
							C/C To 141° End line 62 start line 63
							on line 63
							on line 63
							~~SATELLITE NO UPDATE.~~
							C/C TO 043 END LINE #63 START LINE #64
							SAT. UPDATE - ΔLAT = 0.1371'S ΔLONG = 0.1158' E ACCEPTED NEW CORA-CORB
							ON LINE #64
							SAT. DATA - HIGH ANGLE NO UPDATE
							ON LINE #64
							" " #64
							SATELLITE DATA - NO UPDATE.
							C/C TO 321° END LINE #64 START LINE #64A.
							ON LINE #64A.
							C/C to 223° End line #64A start line 65
							sat recieved - high angle NO UPDATE
							On line # 65
							Sat. Update Δ lat = 0.0160'N Δ lon = 0.0057'W
							Sat Update Δ lat = 0.0354'N Δ lon = 0.0347' E Accepted New CORA-CORB
							on line # 65
							On line #65
							Sat Update ΔLat = 0.1403'S ΔLON = 0.1345'W Accepted New CORA-CORB
							C/C To 322° End line #65 start line #66
							BELL GRAV. COMPUTER STOPPED PRINTING OUT AT 0617Z. RESTARTED PROGRAM (0717)
							ENTERED NEW BIAS & CORR. BIAS (= 854826.5) AT ~0742
							on line #66
							Changed Bell Grav Computer tape.
							Sat update 30200 Lost. ; AGC not used before RCMP (0915)
							C/C to 048° End line 66 start line 66A

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
			0900		464.3		38	54.7	72	55.1
			0904		464.3		38	54.84	72	54.82
			1000		139.44		38	52.0	72	51.2
			1100		139.40		38	48.7	72	47.5
			1120					.		.
			1200		139.4.4		38	45.5	72	44.0
			1218		139.4.1		38	44.7	72	42.8
			1225					.		.
			1300		139.4.5		38	42.2	72	40.4
			1327					.		.
			1350					.		.
			1400		139.4.3		38	38.8	72	36.6
			1431		139.4.4		38	34.64	72	34.31
			1431					.		.
			1434		041.7		38	36.55	72	34.15
			~~1500~~					.		.
			1501		319		38	38.8	72	35.9
			1549				38	41.7	72	38.8
			1600		319.4.5		38	42.2	72	39.4
			1615					.		.
			1700		314.54		38	45.5	72	43.2
			1800		311.52		38	49.3	72	47.4
			1806		319.5.0		38	49.6	72	47.9
			1851		31 14.7		38	52.5	72	50.8
			1900		309.4.4		38	53.0	72	51.4
			1919					.		.
			Continue					.		.
			2000		320.4.8		38	56.2	72	55.2
			1955					.		.
								.		.

OPS (12 KHz, 3.5 KHz, CSP, MAG, GRAV, SONO, STA)	COMMENTS AND OBSERVATIONS
	on line 66A
	C/C To 139° end line #66A start line #67
	on line #67
	on line #67
	Sat update not taken 8° angle.
	on line #67
	SAT. UPDATE - Δ LAT: 0.2002'N Δ LONG: 0.0926'E ACCEPTED NEW CORA-CORB
	STARTED SHOTPOINTS ROUTINE (4 SEC SPACING) FOR LAB.
	ON LINE #67
	RESET PLOTTER - CHANGED SCALE TO 1:100,000
	SAT. DATA - NO UPDATE
	ON LINE #67
	C/C TO 041 END LINE #67 START LINE #67A
	SAT UPDT - ΔLAT = 0.3469'S ΔLONG = 0.3315'E ← IT TURNS OUT THAT THIS WAS A BAD SATELLITE PASS.
	C/C TO 319 END LINE #67A START LINE #68
	HYPERBOLIC UPDATE - ΔLAT: 0.1944'N ΔLONG: 0.3431 W → THIS WAS ALONG THE LINE.
	SAT. UPDATE - ΔLAT: 0.0901'N ΔLONG: 0.0437'E
	ON LINE #68
	Sat. Recovered - Bad Data No Update
	Sat Update ΔLat = 0.0463'S ΔLON = 0.0186'E On line #68
	On line #68
	Sat Update ΔLat = 0.0733'S Δ LON = 0.0405'W Accepted new CORA-CORB
	Sat Update ΔLAT = 0.0204'N Δ LON = 0.0637'E Accepted New CORA-CORB
	On line #68
	Changed INS Tape Power Surge? End Tape #1 start tape #2
	Clock off by aprox 3 sec. will reset on next satellite
	On line #68 (continued)
	C/C to line 68-A "continue same heading" "display equipment"

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
			2013				38	57.0	72	55.9
			2037		130	3.6	38	56.7	72	54.7
			2100		139	4.4	38	55.6	72	53.5
			2200		144	4.5	38	52.4	72	50.0
			2300		139	4.0	38	49.3	72	46.5
			2320				38	48.3	72	45.5
01	07		0000		139	2.9	38	46.7	72	43.7
			0100		139	3.9	38	44.0	72	40.7
			0103					.		.
			0145		139	4.0	38	41.66	72	38.16
			0150		141	5.0	38	41.63	72	37.68
			0200		319	5.0	38	42.4	72	38.1
			0209					.		.
			0251		319	7.5	38	45.4	72	41.5
			0300		319	4.6	38	45.9	72	42.0
			0312			~~4.4~~		.		.
			0400		319	4.4	38	49.4	72	45.8
			0415					.		.
			0500		306	4.5	38	52.8	72	49.5
			0505		320	4.4	38	53.1	72	49.8
			0553		320	4.3	38	55.7	72	52.7
			0600		312	3.9	38	56.0	72	53.1
			0602		312	3.9	38	56.2	72	53.3
			0612		313	4.1	38	56.7	72	53.9
			0620		080	4.1	38	57.1	72	53.8
			0627		141	2.8		.		.
			0700		143	4.9	38	55.1	72	51.2
			0733		144	4.4	38	53.2	72	49.0
			0747					.		.
			0758				38	.	72	.

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO STA	
						C/C to 114° end line #68A start line #68B
						C/C To 139° end line #68B start line 69
						on line #69
						on line #69
						on line #69
						Sat 30140 not takin angle 6°
						on line #69
						" " #69 - NOTE INCLINOMETER FLASHED NO-GO ON CRT A FEW TIMES - OK OUT GYRO
						SATELLITE DATA - VERY CLOSE, SO NO UPDATE. - INCREASE SPEED BY 3/4 KT
						C/C TO 041 END LINE #69 START LINE #69A
						C/C TO 319 END LINE #69A START LINE #70.
						ON LINE #70 - SEAS GETTING ROUGHER.
						DECREASE SPEED BY 1.0 KT.
						SATELLITE UPDATE - ΔLAT 0.0160'N ΔLONG 0.0302'W ACCEPTED NEW CORA-CORD.
						ON LINE #70 - SEAS ARE BETTER
						SAT. DATA - NO UPDATE.
						ON LINE #70
						Sat. Recieved. angle too high No Update
						on line #70
						Sat Update. Δ Lat = 0.0051'N ΔLON = 0.0083'E Accepted New CORA-CORB
						Sat Update Δ Lat = 0.0650's ΔLON = 0.1384'E Accepted New CORA-CORB
						On line #70
						Hyperbolic update — NSTAR looked to good.
						C/C To 41° End line #70 start #70A
						C/C To 139° End line #70A Start line #71
						Speed increase to 4.5 knots
						On line #71
						INS Down Notified lab bridge
						INS back up
						Hyperbolic update

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
01	07	79	0800				38	51.6	72	46.8
			0816				38	50.95	72	46.43
			0900		139	4.4	38	48.4	72	44.0
			0928		139	4.4	38	47.7	72	43.2
			1000		139	4.0	38	44.9	72	40.2
			1050		139	4.2	38	42.04	72	37.05
			1100		319	5.8	38	42.5	72	36.7
			1200		319	5.9	38	47.0	72	41.7
			1238		319	4.5	38	49.2	72	44.0
			1300		320	4.2	38	50.4	72	45.3
BATTIC LOG →			1257					.		.
			1400		320	4.4	38	53.8	72	49.0
			1421		319	4.5	38	55.1	72	50.4
			1447					.		.
			1456		319	4.3	38	57.12	72	52.4
			1500		041	4.3	38	57.31	72	52.70
			1501		041	4.3	38	57.41	72	52.64
			1525					.		.
			1600		140	4.9	38	54.5	72	49.0
			1700		143	4.4	38	51.1	72	45.3
			1716		148	4.2	38	50.2	72	44.3
			1732					.		.
			1800		148	4.1	38	47.7	72	41.6
			1900		145	4.4	38	44.4	72	38.1
			1926		139	4.5	38	42.9	72	36.4
			1930		041	4.9	38	42.9	72	35.9
			1931					.		.
			2000		310	4.5	38	44.9	72	37.8
			2100		314	4.7	38	48.4	72	41.6
			2116				38	48.5	72	41.5

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							on line #71
							Manual update from NSTAR Data.
							on line #71
							Sat update CORA = 1.3922 CORB = 3.8150 DLAT = .11S , DLON = .15E
							C/C to 319° End line #71 start line #72
							↓ on line #71 ↑
							on line #72
							on line #72 - DECREASE SPEED BY 1 KNOT.
							SATELLITE UPDATE - Δ LAT = 0.0740'S Δ LONG = 0.0598'E. ACCEPTED NEW CORA-CORB.
							ON LINE #72
							SAT. DATA - NO UPDATE - SEEMS TO BE OPP. CORRECTION THAN LAST UPDATE - WAIT TILL NEXT SAT.
							ON LINE #72
							SAT. UPDT - SIMILAR TO LAST SAT. - ΔLAT = 0.0463'N Δ LONG = 0.0611'W CONTRADICTS LAST UPDT. ACCEPTED CORA-CORB
							SAT. DATA - SHOWS US TO BE VERY CLOSE - CORRECTION TO NW AGAIN
							C/C TO 041° END LINE #72 START LINE #72A.
							ON LINE #72A
							C/C TO 139 END LINE #72A START LINE #73.
							SAT. DATA - SHOWS US VERY CLOSE - NO UPDATE.
							ON LINE #73
							On line #73
							Sat update ΔLAT = 0.0057'S ΔLON = 0.0212'E Accepted New CORA-CORB
							Sat. Recieved No update
							On line #73
							on line #73
							C/C to 41° end line #73 start line #73A
							C/C to 319° end line #73A start line #74
							Sat recieved. angle too high No update
							On line #74
							on line #74
							Sat update CORA = 1.67 CORB = 0.86 DLAT = 0.096 DLON = 0.031

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
			2200		310	4.4	38	52.6	72	45.5
			2300		315	4.7	38	55.5	72	49.3
			2346		314	4.2	38	58.3	72	52.3
			2351		42	5.5	38	58.5	72	52.1
2	7	79	0000		142	4.5	38	58.4	72	51.5
			0100		140	4.6	38	54.8	72	47.7
			0153							
			0200		140	4.4	38	51.5	72	44.1
			0222				38	50.2	72	42.8
			0300		140	4.3	38	49.0	72	41.4
			0325							
			0400		140	4.7	38	44.7	72	36.8
			0422		139	4.5	38	43.4	72	35.5
			0500		310	4.6	38	45.1	72	36.5
			0517		313	4.7	38	46.1	72	37.6
			0600		320	4.8	38	48.8	72	40.4
			0634		319	4.9	38	50.8	72	42.7
			0700		316	4.6	38	52.5	72	44.4
			0800		316	5.1	38	56.5	72	48.7
			[illegible]		[illegible]		[illegible]		[illegible]	
			0837		320	4.8	38	58.90	72	51.37
			0843		44	5.5	38	59.25	72	51.25
			0900		147	4.4	38	58.65	72	50.17
			1000		149	4.5	38	55.4	72	46.8
			1100		152	4.1	38	52.2	72	43.2
			1124		158	4.1	38	50.8	72	41.7
			1200		157	4.4	38	48.7	72	39.6
			1300		140	4.4	38	45.2	72	36.0
			1318		140	4.4	38	44.24	72	34.88
			1320							

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							on line #74
							on line #74
							C/C to 041° and line #74 start line 74-A
							C/C to 139° and line #74-A start line 75
							on line #75
							" " #75
							SAT. DATA - HIGH ANGLE - NO UPDATE.
							ON LINE #75.
							SAT. UPDATE ΔLAT = 0.1055'S ΔLONG = 0.0038'W ACCEPTED NEW CORA-CORB.
							ON LINE #75
							SAT. DATA - NO UPDATE.
							ON LINE #75
							C/C to 319° End line #75 Start line #76
							On line #76 Finally
							Sat Update ΔLat = 0.0038'S ΔLon = 0.0463'E Accepted New CORA-CORB
							Sat Update ΔLat = 0.0457'N ΔLON = 0.0096'W Accepted New CORA-CORB On line #76
							Sat Update ΔLat = 0.0566'S ΔLON = 0.0102'W Accepted New CORA-CORB
							On line #76
							On line #76
							Sat data "BAD MAJ VOT" NOT 2 2 MIN INTERVALS
							C/C to 041 End #76 start line #76A
							C/C to 139 End line #76A start line 77
							On line #77
							on line #77
							on line 77
							Sat data. DLAT = .007 DLON = 0.09 CORA 1.80 CORB 1.38
							on line #77
							ON LINE #77
							C/C TO 319 END LINE #77 START LINE #78
							SAT. DATA - NO UPDATE.

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
02	07	79	1349							
			1400		319	7.5	38	46.2	72	36.5
			1415							
			1500		320	7.4	38	49.4	72	39.6
			1503							
			1534							
			1600		320	7.2	38	52.8	72	43.1
			1610							
			1700		314	4.6	38	56.5	72	47.2
			1701							
			1722							
			1752		320	4.7	38	59.7	72	50.5
			1800		136	5.0	39	00.0	72	50.1
			1805		133	4.5	38	59.7	72	49.7
			1814		137	4.5	38	59.1	72	49.1
			1900		143	4.9	38	56.4	72	46.1
			2000		139	4.5	38	52.8	72	42.3
			2011		148	4.9	38	52.2	72	41.5
			2100		150	5.1	38	49.2	72	38.6
			2200		148	5.0	38	45.4	72	34.6
			2300		144	5.1	38	41.6	72	30.6
3	7	79	0000		144	5.1	38	37.6	72	26.5
			0001		142	5.4	38	37.48	72	26.35
			0005		50	4.9	38	37.37	72	25.98
			0101		320	4.5	38	40.7	72	29.0
			0120							
			0200		321	4.0	38	44.0	72	32.4
			0237							
			0300		321	3.8	38	47.0	72	35.6
			0400		321	3.9	38	50.0	72	38.8

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA
						SAT. DATA – NO UPDATE.
						LINE #78 – PRETTY FAR OFF. SEE NEXT ENTRY
						ENDPOINT FOR THIS LINE WAY OFF. CORRECTED.
						ON LINE #78
						SAT. DATA – MISSED UPDATE
						" " – NO UPDATE.
						ON LINE #78
						Sat. Recieved angle too high NO UPDATE
						On line #78
						line printer problem. Reset forms No print. Sat recieved No Updt.
						line Printer prints again!
						C/C TO 139° End line #78 begin line #79
						Swinging to line #79
						On line #79
						Sat Update ΔLAT = 0.1467'S ΔLON = 0.0508'W Accepted New CORA-CORB
						On line #79
						On line #79
						Sat Update ΔLat = 0.0753'N ΔLON = 0.0374'E Accepted New CORA-CORB
						on line #79
						on line #79
						on line #79
						on line #79
						C/C TO 050° end line #79 start line #79A
						C/C to 320° end line 79A start line 80
						SAT. UPDATE – ΔLAT: 0.0109'S ΔLONG = 0.0392'E ACCEPTED NEW CORA-CORB
						SAT. DATA – NO UPDATE.
						ON LINE #80
						SAT. DATA – NO UPDATE.
						ON LINE #80
						" " #80

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
03	07	79	0424							
			0500		315	4.7	38	53.4	72	42.2
			0501							
			0600		317	4.4	38	56.7	72	45.7
			0603		308	4.1	38	56.8	72	45.9
			0614							
			0700		229	3.8	38	54.0	72	49.5
			0708							
			0800		236	4.2	38	51.0	72	52.9
			0900		243	3.0	38	48.3	72	56.1
			0929				38	47.01	72	57.65
			0940				38	47.14	72	58.05
			1000		294	5	38	48.3	72	57.1
			1104		374	5	38	51.6	72	53.3
			1124		43		38	52.89	72	51.80
			1129		320		38	53.16	72	51.84
			1200		230	4.5	38	51.9	72	53.8
			1255		223	4.5	38	48.8	72	57.5
			1300		223	4.5	38	48.5	72	57.8
			1314							
			1317							
			1400		215	2.0	38	46.4	72	59.8
			1402		215	3.0				
			1451							
			1454		042	2.0	38	49.0	72	57.2
			1500		043	1.6	38	49.0	72	57.1
			1501							
			1600		030	2.0	38	50.1	72	55.9
			1620		030	1.4	38	50.6	72	55.4
			1700				38	51.5	72	54.3

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							Sat Recieved Angle too high No update
							on line #80
							Sat Recieved. Only 20 Feet off No Update Necessary
							On line #80
							C/C To 223° End line #80 begin line #81
							Sat Recieved. No Update
							On line #81 Seas getting rougher
							Perfect Satellite says only 31 feet away No Update none necessary
							On line #81
							on line #81
							C/C to 324° end line #81 start line # 81A
							C/C to 043 end line #81A start line # 82
							on line 82
							on line 82
							C/C 320° end line 82 start 82A
							C/C 223° end line 82A start 83
							on line 83
							SAT. UPDATE - Δ LAT = 0.0244'S Δ LONG = 0.0212'E ACCEPTED NEW CORA-CORB.
							ON LINE #83
							SLOW TO 2 KTS TO PULL IN SEISMICS & DEPLOY SIDE SCAN SONAR
							SAT DATA - NO UPDATE
							STILL EXCHANGING EQUIPMENT
							C/C TO 043
							TURNING AROUND TO GO BACK OVER LINE #83 - OPPOSITE DIRECTION
							SIDE-SCAN OVER - SPEED BACK DOWN TO 2.0 KTS.
							SAT. UPDATE - Δ LAT = 0.0090'N Δ LONG = 0.0205'E. ACCEPT NEW CORA-CORB.
							RETRACING LINE #83
							SAT DATA - NO UPDATE
							Retracing line #83
							Sat Update Δ Lat = 0.0109'S Δ Lon = 0.0675'W Accepted New CORA-B
							Retracing line #83

WHEN PROCESSING DATA, DELETE THIS PART OF THE TAPE - CONTINUE UNTIL NEXT NOTE

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
3	7	79	1726		036	1.9	38	52.0	72	53.6
			1746					.		.
			1800		036	0.9	38	52.7	72	52.8
			1805					.		.
			1826		035	1.0	38	53.1	72	52.4
			1900		111	1.2	38	53.2	72	52.4
			1902		212	1.3	38	53.1	72	52.4
			2000		228	1.2	38	52.3	72	53.3
			2054		225	1.3	38	51.5	72	54.2
			2100		225	1.3	38	51.4	72	54.3
			2200		246	1.1	38	50.5	72	55.4
			2300		233	2.4	38	49.2	72	56.9
			2355				38	47.70	72	58.70
			0002				38	47.42	72	58.65
4	7	79	0000		048	4.0	38	47.4	72	58.7
			0001					.		.
			0021					.		.
			0100		042	2.2	38	49.4	72	55.9
			0200		043	2.2	38	51.1	72	53.3
			0219		043	2.1	38	51.6	72	53.2
			0300		043	2.2	38	52.8	72	51.8
			0333					.		.
			0400		042	1.0	38	54.1	72	50.1
			0421		041	1.0	38	54.3	72	49.9
			0500		046	1.2	38	55.0	72	49.2
			0515					.		.
			0600		037	1.7	38	56.1	72	47.9
			0638		058	2.0	38	56.9	72	47.0
			0700		046	1.8	38	57.4	72	46.4
			0751		043	1.2	38	58.3	72	45.2

OPS (12 KHz, 3.5 KHz, CSP, MAG, GRAV, SONO, STA)	COMMENTS AND OBSERVATIONS
	Sat. Update ΔLat = 0.0122'N ΔLon = 0.0530'E Accepted New CORA-B
	Slow to 1 knot
	retracing line #83
	Sat Recieved No update
	begin loop for another pass on 83
	retracing line #83 again
	Sat Updt ΔLat = 0.0283'S ΔLON = 0.0347'W Accepted New CORA-B
	retracing line #83
	SAT UPDT - ΔLAT: 0.0018'N Δ LONG = 0.0411'E ACCEPTED NEW CORA-B
	RETRACING LINE #83
	" " #83
	on lin #83
	C/C To 112° end line 83 start line 83A
	C/C To 043 end line 83A start line SS4 / retrace,
	↓
	on line 83A new C/C
	SAT. DATA - NO UPDATE.
	REDUCE SPEED BY 1/2 KTS.
	ON LINE SS-4 (RETRACING LINE #83) - SIDE SCAN SONAR.
	ON LINE SS-4 - SIDE SCAN SONAR.
	SAT. UPDATE - ΔLAT: 0.0045'N Δ LONG = 0.0083'W ACCEPTED NEW CORA-CORB.
	ON LINE SS-4
	SAT DATA - NO UPDATE.
	ON LINE SS-4
	Sat Update ΔLat = 0.0720'S ΔLON = 0.0070'W Accepted New CORA-CORB
	On line SS-4
	Sat Recieved Bad Data NO UPDATE
	on line SS-4
	Hyperbolic update - painfully close to NSTAR
	On line SS-4
	Sat Update ΔLat = 0.0334'S ΔLon = 0.0379'E Accepted New CORA-CORB

DELETE WHEN PROCESSING

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
4	7	79	0800		031	11.2	38	56.4	72	45.1
			0900		342	2.2	39	00.0	72	43.1
			1000		313	1.9	39	01.5	72	41.6
			0954				39	01.36	72	41.62
			1100		221	2.5	39	00.5	72	43.9
			1200		217	2.2	38	58.7	72	46.0
			1201					.		.
			1300		223	2.2	38	57.1	72	47.9
			1400		223	2.3	38	55.4	72	49.9
			1420					.		.
			1500		223	2.1	38	53.9	72	51.8
			1512					.		.
			1531					.		.
			1533					.		.
			1537					.		.
			1539					.		.
			1600		223	2.0	38	52.4	72	53.6
			1636		232	1.2	38	51.8	72	54.3
			1700		205	1.2	38	51.4	72	54.7
			1718		7			.		.
			1754		223	1.9	38	50.4	72	55.1
			1800		226	1.8	38	50.3	72	56.1
			1820					.		.
			1900		220	1.8	38	48.9	72	57.7
			1938		220	2.1	38	48.0	72	58.8
			1939					.		.
			2000		044	3.0	38	48.4	72	57.5
			2100		223	2.7	38	51.0	72	54.3
			2203		222	2.1	38	52.80	72	52.18
			2200		222	2.1	38	52.71	72	52.29

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							On line SS-4
							" " SS-4
							In course change -
							C/C to 223° and line SS4 start line SS5
							on line SS 5
							on line SS5
							SAT. DATA - NO UPDATE.
							ON LINE SS-5 - INCREASE SPEED BY 1 KT. - THEN DECREASED BY 1 KT
							" " "
							SLOW DOWN A BIT TO EXCHANGE PACKAGES WITH FISHING BOAT.
							ON LINE "SS-5
							SAT. DATA - NO UPDATE - WAIT TO COMPARE NEXT SATELLITE.
							SAT. DATA - BAD FIX, NO UPDATE.
							SPEED UP ~ 1 KT TO GET SIDE SCAN FISH UP
							INCREASE ANOTHER 1 KNOT
							DROP SPEED BACK TO 2 KTS.
							ON LINE SS-5
							Sat Update ΔLat = 0.0154'S ΔLon = 0.0078'E Accepted New CORA-CORB
							On line SS-5
							Sat Data - wait for next one for comparison No Update
							Sat Update ΔLat = 0.0502'N ΔLON = 0.0205'E Accepted New CORA-CORB
							On line SS-5
							Sat Recieved No Update
							On line SS-5
							c/c to 43° end line SS-5 start line #84
							Sat Recieve Angle too high No Update
							On line #84 (up to 4 Knots)
							on line #84 reduce to 2 Knots
							C/C to 223° / 180° to continue line 84
							on line #84

Next Note Seismic deployed, use following Data

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
			2300		243	20	38	51.8	72	53.4
			2326				38	50.84	72	54.49
5	7	79	0000		235	26	38	50.35	72	55.17
			0040					.		.
			0053					.		.
			0054					.		.
			0100		222	3.0	38	48.7	72	57.2
			0124		222	3.0	38	47.82	72	58.25
			0124					.		.
			0137					.		.
			0200		043	1.8	38	48.2	72	57.7
			0243		042	1.8	38	49.0	72	54.7
			0300		043	1.9	38	49.4	72	56.3
			0306					.		.
			0328					.		.
			0400		043	2.1	38	50.8	72	54.6
			0500		048	2.3	38	52.5	72	52.5
			continue					.		.
			0508					.		.
			0535		044	2.6	38	53.8	72	51.5
			0552					.		.
			0600		023	3.1	38	54.1	72	51.1
			0650		045	3.0	38	56.0	72	48.8
			0651					.		.
			0700		047	3.6	38	56.4	72	48.3
			0739					.		.
			0752					.		.
								.		.
			0800					.		.
			0833					.		.

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							On line #84
							SAT Update CORA = 1.894 CORB = 1.456 DLAT = 0.001, DLON = 0.013
							on line #84
							NOTICED BELL GRAVITY PROGRAM NOT RUNNING SINCE 2213 (7/4) - RESTART. PROG UP 0042 (7/5)
							INCREASE SPEED 1 1/2 KT
							SAT. DATA - NO UPDATE.
							ON LINE #84 - STILL TOWING DEEP HYDRO PHONE (SEQUEL OF DEEP THROAT)
							C/C TO 043° - 180° TURN TO RUN OVER LINE 84 AGAIN!!! AUGH!
							CORRECTED CONSTANTS OF BELL GRAV. PROGRAM - FORGOT THIS WHEN I RESTARTED IT.
							SAT. DATA - NO UPDATE.
							SAT. UPDATE - ΔLAT = 0.0933'S ΔLONG = 0.0019'E ACCEPTED NEW CORA-CORB
							ON LINE #84
							SAT. DATA - CONFIRMS SAT. UPDATE AT 0243. - NO UPDATE
							SAT. DATA - NO UPDATE.
							Sat. Data - No Update
							On line #84
							" " #84 beginning gradual sweep to line #85
							Sat Received No Update
							On line #85
							Increase speed from .7 Kn to 3 Kn
							On line #85
							Sat Update ΔLat = 0.0135'N ΔLON = 0.0128'E Accepted New CORA-CORB
							Speed Increase to 4.5 knots in about 20 min. Main Engine Needed
							On line #85 Changed Bell Gravity Tape. Start Tape #7
							Power die and restart INS Down Bell grav Down
							INS init Time - CHANGED INS Tape and Tape #2
							Start tape #3 INS Back Up
							Restart Bell Grav tape #7
							Hydrostatic Update.

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
			0847				39	01.78	72	41.88
			0900		126	4.9	39	01.3	72	40.9
			0905				39	01.05	72	40.58
			1000		229	4.4	38	57.9	72	43.9
			1100		219	4.6	38	54.6	72	47.9
			1156				38	51.55	72	51.52
			1200		185	4.5	38	51.4	72	51.7
			1235		138	4.6	38	49.4	72	49.5
			1246		138	4.5	38	48.81	72	48.87
			1249					.		.
			1258					.		.
			1300		042	3.9	38	49.3	72	47.9
			1303					.		.
			1309					.		.
			1358					.		.
			1400		043	4.0	38	52.3	72	44.7
			1455		043	3.9	38	54.8	72	41.3
			1500		043	3.9	38	55.0	72	41.1
			1542					.		.
			1604		043	4.0	38	57.9	72	37.65
			1602		043	4.0	38	58.01	72	37.58
			1613		045	4.6	38	57.61	72	36.71
			1630					.		.
			1700		226	4.5	38	54.9	72	39.5
			1718					.		.
			1735		226	4.6	38	52.9	72	41.8
			1800		224	4.6	38	51.6	72	43.5
			1808					.		.
			1834		225	4.6	38	49.6	72	45.6
			1900		221	4.5	38	48.2	72	47.5

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							C/C to 137° end line #85 start line #85A
							on line #85A
							C/C to 223° end line #85A start line 86
							on line #86
							on line #86
							C/C to 138° end line 86 start line 87
							In course change for line 87
							SAT. UPDATE - ΔLAT = 0.0740'S ΔLONG = 0.0617'E ACCEPTED NEW CORA-CORD.
							C/C TO 043 END LINE #87 START LINE #88
							BELL GRAVITY PROGRAM OFF TO LOAD NAV. PROGRAM & MODIFY
							BELL GRAVITY BACK UP.
							ON LINE #88
							BELL GRAVITY OFF TO ADD PRINT COMMAND (LINE 313)
							BELL GRAVITY BACK UP.
							SAT. DATA - NO UPDATE.
							ON LINE #88
							SAT. UPDATE - Δ LAT = 0.0173'S ΔLONG = 0.0212'W ACCEPTED CORA-CORD
							ON LINE #88
							SAT. DATA - NO UPDATE.
							ON LINE #88
							C/C TO 141 END LINE #88 START #88A
							C/C To 222 End line #88A Start line #89
							Running to left of line - coast guard on Stb.
							On line #89
							Reset IN's clock - was ahead 1 sec.
							Sat Update ΔLAT 0.0070'S ΔLON = 0.0173'E Accepted New CORA-CORR
							on line #89
							Sat Recieved No Good No Update
							Sat Update ΔLAT = 0.0399'S ΔLON = 0.0251'E Accepted New CORA-CORR
							On line #89

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
5	7	79	2000		228	4.2	38	44.7	72	51.7
			2002				38	44.58	72	51.76
			2018		238	4.4	38	43.7	72	52.8
			2027		129	5.4	38	43.1	72	56.6
			2045							
			2100		92	0	38	44.0	72	51.0
			2133							
			2200		344	4.2	38	47.1	72	47.4
			2300		38	4.3	38	50.3	72	43.5
06	07	79	0000		38	4.7	38	53.7	72	39.5
			2338							
			0043		044	4.8	38	56.2	72	36.4
			0048		041	4.8	38	56.49	72	36.25
			0100		128	7.5	38	56.1	72	35.2
			0105		140	4.2	38	55.75	72	34.79
			0142							
			0200		222	4.4	38	52.8	72	37.8
			0217							
			0249		222	4.2	38	50.1	72	40.8
			0300		222	4.2	38	47.7	72	41.5
			0330							
			0400		223	4.2	38	46.5	72	45.1
			0427		222	4.7	38	44.9	72	47.0
			0500		225	4.0	38	43.1	72	49.1
			0525		222	4.7	38	41.79	72	50.68
			0538		111	5.1	38	40.95	72	50.14
			0600		042	4.3	38	41.9	72	48.6
			0700		045	4.5	38	45.2	72	44.9
			0800		042	4.9	38	48.6	72	40.9
			0900		39	4.5	38	52.1	72	36.3

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

On line #89

CORA = 1.70 CORB = 0.92 DLAT = .02 DLON = .01 Sat data.

C/C to 137° end line #89 start line #89A

C/C to 043 end line #89A start line #90

reduce to 2 Knots : recover equipment.

Increase to normal speed

on line #90

STOPPED BELL PROGRAM TO MAKE MOD 2.

on line #90

on line #90

~~Tape~~ CHANGE PAPER IN GRAVITY LINE PRINTER.

~~Paper Change Northstar Tape #4 7/4 0000 7/5 2359~~

SAT. UPDATE - ΔLAT = 0.0263'N ΔLONG = 0.0090'W ACCEPTED CORA-CORB

C/C TO 141° - END LINE #90 START LINE #90A

ON LINE #90A

C/C TO 223° - END LINE #90A START LINE #91

SAT. DATA NO UPDATE.

ON LINE #91

SAT DATA - NO UPDATE.

SAT. UPDATE - ΔLAT = 0.0463'S ΔLONG = 0.0173'E ACCEPTED CORA-CORB

ON LINE #91

SAT. DATA - NO UPDATE.

ON LINE #91

Sat update ΔLat = 0.0186'S ΔLon = 0.0115'W Accepted new CORA-CORB

on line #91

C/C To 137° End line #91 start line #91A

C/C to 43° End line #91A Start line 92

on line #92

" " #92

" " #92

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
			0915							
			0944		364	4.3	38	54.49	72	33.92
			0956		144	5.6	38	53.98	72	32.97
			1000			4.5	38	53.70	72	32.95
			1100		230	4.5	38	50.3	72	36.9
			1128							
			1200		223	4.1	38	46.9	72	40.8
			1300		223	4.6	38	43.7	72	44.6
			1327							
			1397							
			1400		223	4.6	38	40.2	72	48.7
			1401		223	4.6	38	40.19	72	48.72
			1427		137	4.5	38	38.51	72	47.26
			1451							
			1500		043	4.5	38	39.9	72	45.2
			1515							
			1532							
			1600		043	4.5	38	43.1	72	41.5
			1647		040	4.1	38	45.6	72	38.6
			1700		041	4.4	38	46.3	72	37.7
			1800		040	4.5	38	49.6	72	33.8
			1831							
			1844		042	4.4	38	51.83	72	31.14
			1857		044	5.3	38	51.27	72	30.19
			1900		227	4.8	38	51.0	72	30.2
			2000		220	4.2	38	47.8	72	34.6
			2100		223	4.5	38	44.5	72	38.0
			2200		228	4.3	38	41.1	72	41.8
			2300				38	38.1	72	45.3
			2308				38	37.69	72	45.81

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							DLAT = 0.056 DLON = 0.001, CORA = 1.86, CORB = 0.98 SAT Update:
							C/C To 141° and line 92 start line 92A
							C/C To 223 shot line 92A start line 93
							on line 93
							on line 93
							Sat data. weak not used.
							on line 93
							" " 93
							SAT DATA - NO UPDATE
							SAT DATA - NO UPDATE.
							ON LINE #93
							C/C TO 137° END LINE #93 START LINE #93A
							C/C TO 043° END LINE #93A START LINE #94
							SAT. DATA - MISSED UPDATE.
							ON LINE #94
							ANOTHER SATELLITE I MISSED - RATS!
							SAT. DATA - HIGH ANGLE - NO UPDATE.
							ON line #94
							Sat Update ΔLat = 0.0566'N ΔLON = 0.0620'E
							On line #94
							" " #94
							Sat Data - Low angle No Update
							C/C to 140° End line #94 Start line #94A
							C/C to 223° End line #94A Start line 95
							Swinging onto line #95
							on line #95
							on line #95
							on line #95
							on line #95
							C/C to 137° end line #95 start line #95A

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
			2323				38	36.82	72	45.29
9	7	79	0000		43	4.5	38	38.5	72	42.8
			0055		44	4.7	38	41.7	72	39.0
			0100		043	4.7	38	42.0	72	38.7
			0110					.		.
			0122					.		.
			0146					.		.
			0200		043	4.7	38	45.6	72	34.5
			0204		043	4.7	38	45.95	72	34.17
			0237					.		.
			0252					.		.
			0300		321	3.6	38	48.7	72	36.6
			0312					.		.
			0321					.		.
			0400		320	4.3	38	52.0	72	39.9
			0444		316	4.7	38	54.3	72	42.4
			0500		321	4.2	38	55.2	72	43.4
			0600		320	4.0	38	58.4	72	46.7
			0611					.		.
			0651		321	4.6	39	01.20	72	49.67
			0700		146	6.6	39	01.3	72	49.0
			0753					.		.
			0800		142	4.6	38	57.6	72	45.16
			0802		143	4.3	38	57.5	72	45.0
			0805					.		.
			0900		132	4.1	38	54.1	72	41.5
			1000		133	3.9	38	50.8	72	38.0
			1100		133	4.3	38	47.6	72	34.7
			1140				38	45.40	72	32.39
			1200		321	4.1	38	46.1	72	32.4

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							C/C to 043 end line 95A start line 96.
							on line #96
							SAT. UPDATE - ΔLAT = 0.0289'S ΔLONG = 0.0811'E. ACCEPTED NEW CORA-CORB.
							ON LINE #96
							MOD 5 INSERTED INTO GRAVITY COMPUTER - OFF FROM 0106 TO 0110Z.
							SAT. DATA - NO UPDATE
							SAT. DATA - NO UPDATE.
							ON LINE #96
							C/C TO 321° END LINE #96 START LINE #97
							SAT DATA - NO UPDATE
							SAT. DATA - NO UPDATE.
							ON LINE #97
							SAT. DATA - NO UPDATE.
							SAT. DATA - NO UPDATE
							ON LINE #97
							Sat Update ΔLat = 0.0109'S ΔLON = 0.0180'W Accepted New CORA-CORB
							on line #97
							" " #97
							Lost a good satellite - Damn
							C/C to 140° End line #97 Start line #98 (Delayed by lab)
							On line # 98
							Turned off auto Velocity correction on Bell gravity Machine. Chart occulating
							On line #98
							Sat Update ΔLAT = 0.0186'S ΔLON = 0.0180'E Accepted New CORA-CORB
							turned auto vel. correction back on on Bell grav.
							on line #98
							on line #98.
							on line #98
							C/C to 321 end line 98 start line 99 on course @ 1150
							on line 99

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION			
07	07	79	1233							
			1246							
			1300		321	4.3	38	49.6	72	35.9
BACKLOG			1211							
			1400		321	4.4	38	52.9	72	39.4
			1413							
			1437		321	3.9	38	54.9	72	41.4
			1500		321	4.1	38	56.0	72	42.8
			1551							
			1600		320	4.4	38	59.6	72	46.4
			1657		321	5.1	39	03.2	72	50.2
			1700		322	5.1	39	03.4	72	50.4
			1710		322	4.6	39	04.08	72	51.11
			1735		137	4.5	39	03.5	72	49.8
			1745							
			1800		131	4.5	39	02.2	72	48.2
			1803							
			1900		136	4.5	38	58.9	72	44.7
			1950		140	4.4	38	56.0	72	41.8
			2000		141	4.5	38	55.4	72	41.2
			2100		136	5.0	38	51.7	72	37.3
			2129							
			2200		133	4.7	38	47.9	72	33.8
			2223				38	46.5	72	31.94
			2300		222	4.4	38	44.5	72	33.9
			2355							
			2342				38	42.1	72	36.6
08	07	79	0000		230	4.6	38	41.1	72	37.8
			0038		222	4.6				
			0100		221	4.6	38	37.7	72	41.8

OPS (12 KHz, 3.5 KHz, CSP, MAG, GRAV, SONO, STA)	COMMENTS AND OBSERVATIONS
	SAT. DATA - NO UPDATE
	SAT. DATA - NO UPDATE
	ON LINE 99
	GRAVITY COMP. TURNED OFF TILL 1315 TO LOAD OLD GRAVITY PROGRAM.
	ON LINE #99
	SAT. DATA - NO UPDATE.
	SEATTLITE UPDATE - ΔLAT = 0.0109'N ΔLONG = 0.0218'E ACCEPTED NEW CORA-CORB
	ON LINE #99
	SAT. DATA - HIGH ANGLE - NO UPDATE.
	ON LINE #99
	Sat Update Δ Lat = 0.0122'S ΔLON = 0.0032'E Accepted New CORA-CORB
	On line #99
	C/C to 141° End line #99 Start line #100
	On line #100
	Sat Data. Looks good Will compare to one coming in now
	On line #100
	New Sat. looks good but doesn't quite agree with last one. No Update.
	On line #100
	Sat updt. ΔLat = 0.0135's ΔLon = 0.0053'E Accepted New CORA-CORB
	On line #100
	on line #100
	Sat recieved No good No update
	on line #100
	C/C to 2230 end line #100 start line #101
	on line #101
	increase speed to five (5) knots.
	CORA: 1.82 CORB = 1.15 DLAT = 0.05 DLON = 0.06
	on line #101
	SAT. UPDATE Δ LAT = 0.0225' ΔLONG = 0.0014'E ACCEPTED CORA-CORB
	ON LINE #101

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
08	07	79	0105		221	4.6				
			0130		220	5.0	38	35.92	72	43.96
			0137							
			0140		140	5.2	38	35.23	72	43.42
			0200		043	5.7	38	36.2	72	41.7
			0206							
			0242							
			0300		043	5.1	38	40.2	72	37.0
			0327							
			0350							
			0400		043	4.9	38	40.9	72	32.7
			0456		043	4.7	38	47.30	72	28.71
			0500		324	4.3	38	47.5	72	28.7
			0501							
			0511		225	3.8	38	48.12	72	29.15
			0537		223	5.2	38	46.73	72	31.05
			0546		313	4.0	38	47.02	72	31.70
			0600		321	4.5	38	47.8	72	32.6
			0643							
			0700		320	4.3	38	51.4	72	36.3
			0800		317	4.1	38	54.5	72	39.6
			0900		327	4.9	38	58.0	72	43.2
			1000		330	5.0	38	01.9	72	47.2
			1007				38	02.2	72	47.7
			1016				38	02.9	72	47.9
			1104		130	4.3	38	00.6	72	47.2
			1148		1		38	57.9	72	42.9
			1200		137	4.5	38	57.3	72	41.8
			1300		140	4.4	38	54.1	72	38.4
			1326							

OPS						COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA
						INCREASE SPEED TO 5 KTS.
						C/C TO 138° END LINE #101 START LINE #101A
						SAT. DATA — NO UPDATE
						C/C TO 043 END LINE #101A START LINE #102
						ON LINE #102
						SAT. DATA - NO UPDATE.
						SAT. DATA - SHOWS US VERY CLOSE - NO UPDATE.
						ON LINE #102
						SAT. DATA - NO UPDATE.
						SAT. DATA - NO UPDATE.
						ON LINE #102
						C/C to 321° End line #102 begin line #102A
						On line #102A
						Sat data 2141 feet off? No Update
						C/C to 223° End line #102A Start line #103
						C/C TO 321° End line #103 Start line #104
						Sat Update ΔLat = 0.0418' N ΔLON = 0.0000' E Accepted CORA-CORB > On line #104
						On line #104
						Sat data - No Update
						On line #104
						" " #104
						" " #104
						" " #104
						C/C TO 042° end line #104 start line #104A
						C/C TO 141° end line #104A start line 105
						On line #105
						CORA = 1.73 CORB = 1.39 DLAT = 0.07 DLON = 0.04
						ON LINE #105
						ON LINE #105
						SAT. DATA - SHOWS US VERY CLOSE - NO UPDATE

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
08	07	79	1356		141	4.4				
			1400		141	4.4	38	50.8	72	35.0
			1500		141	4.7	38	47.3	72	31.4
			1506							
			1525		140	4.6	38	45.84	72	29.76
			1600		321	4.1	38	47.4	72	30.7
			1654		324	3.7	38	50.2	72	33.6
			1700		320	4.1	38	50.5	72	33.9
			1714							
			1800		320	4.7	38	54.0	72	37.41
			1841		321	3.1	38	56.4	72	40.0
			1841							
			1900		325	3.1	38	57.19	72	40.80
			1906		215	3.5	38	57.20	72	41.17
			2000		232	2.6	38	55.4	72	43.5
			2100		240	1.3	38	53.9	72	45.2
			2200		229	2.4	38	52.6	72	47.0
			2300		227	2.1	38	51.0	72	48.8
			2349		222	2.1	38	49.7	72	50.3
09	07	79	0000		225	2.0	38	49.5	72	50.6
			0031							
			0051		222	1.9	38	48.1	72	52.2
			0100		225	2.0	38	47.9	72	52.5
			0125							
			0200		226	2.1	38	46.3	72	54.4
			0223		225	2.0	38	45.79	72	55.24
			0241				38	46.35	72	56.39
			0246							
			0300		043	2.0	38	47.0	72	56.1
			0301							

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							SAT. DATA - HIGH ANGLE - NO UPDATE.
							ON LINE #105
							ON LINE #105
							SAT. DATA - EVERYTHING LOOKS GOOD EXCEPT ONLY HALF DOPPLER COUNTS USED - NO UPDATE.
							C/C TO 331° END LINE #105 START LINE #106
							ON LINE #106
							Sat Update ΔLAT = 0.0025'N ΔLON = 0.0122'E Accepted New CORA-CORB
							On line #106
							Speed increase to 4.5 knots
							On line #106
							Sat update ΔLat = 0.0122'S ΔLON = 0.0090'W Accepted new CORA-CORB
							Cut speed to 3 knots
							C/C to 223° End line #106 begin line #107-DH Deep Hydrophone
							On line #107-DH
							" " #107-DH ; reduce speed to 2 Knots.
							Sat data not updated. ; on line 107-DH
							on line 107-DH
							on line 107-DH
							CORA = 1.73 CORB = 1.13 DLAT = 0.05 DLON = 0.02
							on line 107-DH
							BELL COMP. OFF TO LOAD NEW PROGRAM (MOD 6) - ON ALARM 0040 Z.
							SAT. UPDATE - ΔLAT = 0.1044'S ΔLONG = 0.0251'E ACCEPTED NEW CORA-CORB.
							ON LINE #107-DH (DESIGNATED MISTER?)
							SAT. DATA - NO UPDATE.
							ON LINE #107-DH
							HYDROPHONE OUT FOR THIS LINE
							C/C TO 317° END LINE #107-DH START #108-DH - SPEED UP TILL #109-DH
							C/C TO 043° END LINE #108-DH START #109-DH
							SLOWING DOWN TO DEPLOY HYDROPHONE - WILL REMAIN AT 2 KTS. FOR THIS LINE.
							ON LINE #109-DH.
							SAT. DATA - NO UPDATE.

GMT				TIME ZONE	SHIPS		NAVIGATION			
DAY	MO	YR	TIME	±	COURSE	SPD				
09	07	79	0340							
			0400		044	2.5	38	48.5	72	57.4
			0412							
			0422							
			0452							
			0500		050	2.3	38	49.6	72	52.9
			0600		040	2.2	38	51.3	72	51.0
			0700		036	1.8	38	52.7	72	49.3
			0728		040	1.8	38	53.3	72	48.5
			0800		036	1.6	38	54.0	72	47.7
			0900		043	1.7	38	55.2	72	46.3
			0910							
			1000		043	1.8	38	56.4	72	44.7
			1050							
			1100		043	1.8	38	57.7	72	43.2
			1126		043	1.8	38	58.29	72	42.48
			1200		320	1.9	38	58.26	72	42.99
			1300		320	4.0	39	01.1	72	44.9
			1342				39	02.82	72	46.84
			1400				39	03.50	72	46.83
			1400		143	5.3	39	03.5	72	46.9
			1457		139	5.9	39	02.3	72	43.1
			1500		135	4.5	38	59.9	72	42.9
			1600		143	4.3	38	56.5	72	39.5
			1640							
			1700		141	4.1	38	53.3	72	36.1
			1800		144	3.8	38	50.2	71	32.8
			1822							
			1855		145	4.2	38	47.07	72	29.54
			1900		008	4.7	38	47.1	72	29.2

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							SAT DATA – HIGH ANGLE – NO UPDATE.
							ON LINE # 109-DH SLOW DOWN TO 2.0 KT.
							Speed decrease to .5 (½) Knots
							Speed Increase back to 2 knots
							Sat Data. We are not 42,000 feet off. No Update
							On line # 109-DH
							" " # 109-DH
							" " # 109-DH
							Sat Update. ΔLat = 0.0090'N ΔLon = 0.0128'E Accepted New CORA-CORB
							On line # 109-DH
							ON LINE # 109-DH.
							SAT DATA – NO UPDATE
							ON LINE # 109-DH.
							SAT. DATA – NO UPDATE.
							ON LINE # 109-DH
							C/C @ 321 END LINE # 109-DH START LINE # 110 – INCREASE SPEED TO 4.5K
							on line 110-DH
							On Line 110-
							C/C to 042° and line #110 start line #110-A
							C/C to 141° and line #110-A start line 111
							on line # 110-A
							CORA = 1.74 CORB = 1.08 DLAT = 0.02 DLON = 0.03
							On line ~~#110~~ #111
							on line # 111
							Lost a good satellite
							On line # 111
							" " # 111
							Speed back up to 4.5 knots
							C/C to 321° End line # 111 start line # 112
							turning to line # 112

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION		
9	7	79	1910		328	4.4	38 47.79	72 29.25	
			1915				38 .	.	
			1939				38 49.46	72 31.22	
			2000				38 47.9	72 32.7	
			2034				38 48.3	72 30.4	
			2051				38 49.3	72 30.1	
			2100		322	4.6	38 47.8	72 31.6	
			2200		327	5.1	38 53.7	72 35.7	
			2300		330	5.3	38 57.7	72 39.8	
10	07	79	0000		312	4.6	38 01.7	72 43.9	
			0032		321	4.5	39 03.60	72 45.93	
			0033				.	.	
			0100		141	4.5	39 03.0	72 44.8	
			0130				.	.	
			0200		141	4.3	38 59.7	72 41.2	
			0220				.	.	
			0257		141	4.5	38 56.5	72 37.9	
			0300		141	4.5	38 56.4	72 37.7	
			0320				.	.	
			0400		141	4.6	38 52.8	72 34.0	
			0406		139	4.3	38 52.4	72 35.7	
			0443				.	.	
			0500		141	4.8	38 49.2	72 30.1	
			0517		142	4.8	38 48.13	72 29.05	
			0527		336	4.6	38 48.51	72 28.82	
			0600		319	5.8	38 50.8	72 31.1	
			0628		324	4.7	38 52.5	72 33.0	
			0700		319	4.7	38 54.5	72 35.0	
			0800		320	4.5	38 58.1	72 38.8	
			0750		320	4.6	38 57.6	72 38.2	

OPS (12 KHz, 3.5 KHz, CSP, MAG, GRAV, SONO, STA)	COMMENTS AND OBSERVATIONS	
	On line #112 (Declared by lab) still .15 mile off)	
	Sat recieved looks good but angle too high No Update	7 JULY
	Going to look at the tall ship. will return	1939
	Still looking	sightsee
	heading back.	
	corrected to original course line #112	2051
	on line #112	
	on line #112	
	on line #112	
	on line #112	
	C/C TO 141° END LINE #112 START LINE #113	
	SAT. DATA - LARGE NO. DOPPLER COUNTS NOT USED - NO UPDATE.	
	ON LINE #113	
	SAT. DATA - HIGH ANGLE - NO UPDATE.	
	ON LINE #113	
	SAT. DATA - NO UPDATE	
	SAT. UPDATE - Δ LAT = 0.0366'S Δ LONG = 0.0632'E ACCEPTED CORA-CORB.	
	ON LINE #113	
	SAT. DATA - NO UPDATE.	
	ON LINE #113	
	Sat Update ΔLat = 0.0045'N ΔLON = 0.0122'W Accepted New CORA-CORB	
	Sat Data — will wait for next one No Update	
	On line #113 > Changed Bell Grav Tape end tape 10 start #11	
	C/C to 321° End line #113 begin line #114	
	On line #114	
	" " #114	
	Sat Update ΔLat = 0.0540'S ΔLon = 0.0328'E Accepted New CORA-CORB	
	On line #114	
	" " #114	
	CORA = 1.61 CORB = 0.81 DLAT = 0.04 DLON = 0.01	

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION			
10	07	79	0900		322	43	39	01.8	72	42.6
			0943				39	04.40	72	45.35
			1005				39	05.95	72	46.13
			1000				39	05.6	72	46.0
			1100		218	5.4	39	02.6	72	50.0
			1200		218	5.4	38	58.3	72	54.4
			1300		218	5.7	38	54.0	72	58.8
			1344		218	5.4	38	50.9	73	02.0
			1355							
			1414							
			1414							
			2020							
			2020							
11	07	79	1038							
			1857							

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							On line #114
							C/C to 339° end line 114 start line 114A
							C/C to 218° end line 114A start line 115.
							On line 114A
							on line 115
							on line 115
							ON LINE #115
							END OF SURVEY. SLOW TO 2 KT TO PULL IN EQUIPMENT. C/C TO 230°
							TO HEAD FOR NORFOLK.
							PLOTTER TURNED OFF.
							END OF NAV TAPE #3
							Start NAV Tape 4
							End " " 4 Write error (Approx Time)
							Start NAV tape 5 "
							End NAV Tape 5 @ entrance Chesapeake Bay
							END BELL GRAV. TAPE #11