

CRN

91-08

DAILY LOG

INSTITUTE OF OCEAN SCIENCES
OCEAN PHYSICS

DATE 28 April - 10 May 1991

VESSEL CSS / Parizeau

PROJECT Papa

PARIZEAU.

91-08

Captain: JOHN CAMPBELL

First Officer: AL COOMBS

Second Officer: DON GIBSON

Third Officer: PADDY MURPHY

Cruise Participants/Agencies: _____

Scientific Personnel: Party Chief: Sus Tabata A
 name watch cabin name watch cabin

Ch.T. Reg Bigham 4-8 D MARY-BETH BERUBE 8-12 E
 John Love 4-8 G
 Bernard Minkley 12-4 B
 Les Spearing 8-12 E
 Graeme Quinn 12-4 C
 JIN PING WU 8-12 C

second leg of cruise: Party Chief: _____

third leg of cruise: Party Chief: _____

DATA LOGGING SYSTEM: Unit number: 2 program ver. 110
 CTD deck unit make: GUILDLINE model: 87107 serial no.: 57160
 Computer make: HP model: Vectra serial no.: 05390
 monitor make: Nec model: 2A serial no.: _____
 printer make: star model: radix-10 serial no.: 00266

1st CTD make: Guildline model: _____ serial no.: 53501
 temperature sensor model: _____ serial no.: 53237
 coefficients: slope: 1.00 offset: 0
 conductivity sensor model: _____ serial no.: 52474
 coefficients: slope: 1.000 offset: 0
 pressure sensor range: _____ psi serial no.: _____
 coefficients: FSP: 2000 dB offset: _____
 transmissometer model: _____ serial no.: _____
 coefficients: slope: _____ offset: _____

Comments: failed at atm MPI9 com # 19.

2nd CTD make: Gouldson model: _____ serial no.: 58483
 temperature sensor model: _____ serial no.: _____
 coefficients: slope: 1.00 offset: 0
 conductivity sensor model: _____ serial no.: _____
 coefficients: slope: 1.00 offset: 0
 pressure sensor range: _____ psi serial no.: _____
 coefficients: FSP: 3000 dB offset: 0
 transmissometer model: _____ serial no.: _____
 coefficients: slope: _____ offset: _____
 Comments: _____

WINCHES:

CTD make: SWAN model: 310 serial no.: 1082
 counter make: REVLIS model: _____ serial no.: _____
 HYDRO make: SWAN model: _____ serial no.: _____
 counter make: REVLIS model: _____ serial no.: _____
 Spooling make: _____ model: _____ serial no.: _____
 Drag make: _____ model: _____ serial no.: _____
 other make: _____ model: _____ serial no.: _____

Salinometer make: _____ model: _____ serial no.: _____

SAIL System:

program version: _____ time zone: _____
 sampling interval: _____ sec.
 CTF module no.: _____ serial no.: _____
 remote temperature model: _____ serial no.: _____
 flow sensor model: _____ serial no.: _____
 Other sensors: (special for this cruise)
 name: _____ module I.D.: _____ serial no.: _____
 name: _____ module I.D.: _____ serial no.: _____
 Comments: _____

ADCP Setup:

Program version: _____ number of depth bins: _____
 time zone: _____ bin length (2^x): _____
 sampling interval: _____ sec. pulse length: _____
 blank beyond transmit: _____ pings per ensemble: _____
 pulse cycle time: _____
 percent pings good threshold: _____
 Comments: _____

28 April

All scientific personnel aboard by
23:30 PST

29 April:

Calin clear.

Scientific staff on sea watches.

12-4

Bernard Minkley, Graeme Quinn

4-8

Reg Bigham, John Love

8-12

Les Spearag, Mary-Beth Berube, Jimmie W.

0001

Slipped 10S jolly & proceed to sea.

29 April (PST)

MPO2 CTD #2 at 119 m

1247

reset computer clock & GMT. clock was slow
app 4 min slow - PST zone.

1342

SAIL.

Changed sensor (Cond Temp Cell) in sample
loop.

When calibrated sensor had been substituted
for calibrated cell resulting in high cell
temp readings on the sail loop

20:55 m P03

CTD # 3.

1542 (P01)

1630

1640

1709

1715

Start CTD @ MPO4
Plankton haul to 200
Start bottle cast to 1300m
down to 1300
"messenger"

1745 Completed station; moved to P05.

2000 MPO6 - saw 2 porpoise, 1 seal, 4 squid,
jellyfish, bits of floating weed like fucus.

30 April

0200

Standardized oxygen chemicals
10ml syringe was not set correctly
 $V_2 = .3541$ $V_6 = .0003$

P09 Winds (N) light swell from South, cloudy.

Kelp passed by

1540 CTD to 1500

YEAR	91	MONTH	04	TIME ZONE	UTC	SHIP	Parizeau	CRUISE	9108	PAGE	1 OF		
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC #	STD TIME	HYDRO CONSEC #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
29	MJF1	10:47	48 15 50									1	Loop sample only at this station.
			123 30 62										
29	MF32	12:30										2	Loop sample only this station.
29	MJF3	14:07	no sail									3	Loop sample only this station.
29	MP01	130	1720 48 34.31	1	1738					9.503		4	✓ 1734 by VERA clock
			1747 125 30.17							31.318			
29	MP02	115	1930 48 36.03	2	1938					9.163		5	
			1945 126 00.03							31.254			
29	MP03		2055 48 37.48	3	2058					9.456		6	✓ * CTD 6 812 db.
			2124 126 20.05							31.642			
29	MP04	1336	2233 48 38.85	4	2242	4	0015	001 2048		9.458		7	CTD 1330 db (blank to haul)
			126 39.93					020 2067		31.427			Bottle cast to 1300
30	MP05	2105	02:35 48 41.46	5	0237	/				9.450		8	
			0320 127 09.6							31.628			CTD to 1500m.
30	MP06	2568	0514 48 44.64	6	0521	6	0713	021 2068		9.622		9	
			127 40.19					041 2014		31.932			Bottle cast to 2000.
30	MP07	2530	0257 48 46.47	7	1008	/				9.264		10	
			1048 128 09.67							32.144			
30	MP08	2545	12:40 48 48.76	8	1242	/				8.673		11	GPS POSITION.
			128 39.74							32.465			
30	MP09	2370	1511 48 51.19	9	1515	/				8.433		12	GPS
			1559 129 09.91							32.459			

PdTime

1640 - Young female Peregrine falcon
seen following ship. Appears to be
trying to land at times.

1 May

1460 analyzed salinity sample from MP04 and MP06.

Shn MP19 cont 19 aborted at 50db. Salinity not
correct.

cont #20. High surface salinity. CTD at 1500db

cont #21. Upcast logged to check surface salinity.

Temperature sensor failed at 1200db. Gave constant
temperature of 2.707. Pressure and conductivity are
correct.

0519 PDT New probe Serial #

Pressure sensor has a 3000 Dbr
rating

The new ctd is less noisy than S3501
probe, this is noticeable on the computer trace.

Wire out on wind counter
probe

1475 < 0°
1500

Surface offset Probe 4.3

Wind on surface 984 (16m offset)

cont 18 has data error at 386 kb.
record number 9833

YEAR 91

MONTH 04/05

TIME ZONE UTC

SHIP PARIZEAU

CRUISE 9108

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DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE LONGITUDE	STD CONSEC #	STD TIME	HYDRO CONSEC #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
30	MP10	2697	1736 48 53.49 1819 129 39.44	10 1739	/					8.652 32.391	13		GPS POSITION. BITS OF KELP FOUND ON SURF. ALBATROSS.
30	MP11	2777	2007 48 55.83 2047 1300 9.64	11 2011	/					8.607 32.387	14		CTD to 1508 db.
30	MP12	3262	2236 48 58.03 2317 1303 9.39	12 2241	/					8.678 32.523	15		CTD to 1504 db. loops v
MAY 1	MP13	2915 3262	0245 49 02.32 0330 131 39.63	13 0247	/					7.770 32.506	16		SEAL. SIGHTED.
1	MP14	3344	0724 49 07.15 0810 132 39.72	14 0730	/					7.678 32.451	17	✗	CTD to 1510.
1	MP15	3420	11:54 49 11 06 133 39 45	15 11:56	/					7.591 32.520	18		
1	MP16	3655	1600 49 16.71 1842 134 40.00	16 1603	16 1802	42 1042 62 1064				7.511 32.533	19		GPS POSITION. ALBATROSS, 3 FUR SEALS 200m plankton haul.
1	MP17	3700	2208 49 20.57 2248 135 40.13	17 2211	/					7.536 32.544	20		5 purposes
2	MP18	3850	0203 49 25.59 0439 136 39.9	18 0206	18 0357	63 2014 83 2038				7.389 32.540	21		CTD to 1504 SALMON, 200m plankton haul
2	MP19	3947	0756 49 29.79 1374 00 2	19 0758	/						22		minimal salinity 0 to 30m #21 upcast
2	MP20	3985	12:15 49 33.47 138 39.9	22 12:18	/					7.268 32.435	23		
2	MP20		1928 49 33.48 2006 138 39.71	23 1929	/					7.260 32.583	24		salinity sample only CTD to 1513 db.

91/5/2 PDT

- 0615 - 0700 : Ranged on Oceano Releasees and Benthos
Transponder on QEP1.
0710 : Strong signal from 27 kHz pinger
0725 : Released Oceano 16U.
0729 : Bridge reported Ch 68 transmitter received.
0815 : Begin recovery, top first.
1005 : QEP1 on board

Mooring, Current Meters, Releases serviced.

1810 : Begin deployment, buoys first.

2011 : Wheels away at GPS 49°32.915'N

138°39.950'W

L/C 49°33.32'N TD's 5990-X 12163-36

138°40.37'W

-Y 29757.30

SOUNDER: 3986 m.

$(3986 * 0.99267) + 5 = 3962$ m

based on 1489 m/s sound speed.

2035 : Ch. 68 transmissions stopped.

91/5/3 PDT

2227 - Stn P26, STD #30. to 2513 m.

At 500 m. on upcast, computer went into an error mode; then out to CTD DTS menu. Used ALT<N> to complete upcast

2242 - Plankton haul, 200 m.

- jellyfish (small but many)

2331 - 1200 m. cast messenger

- obs: 2 salmon-like fish ≈ 16 " long

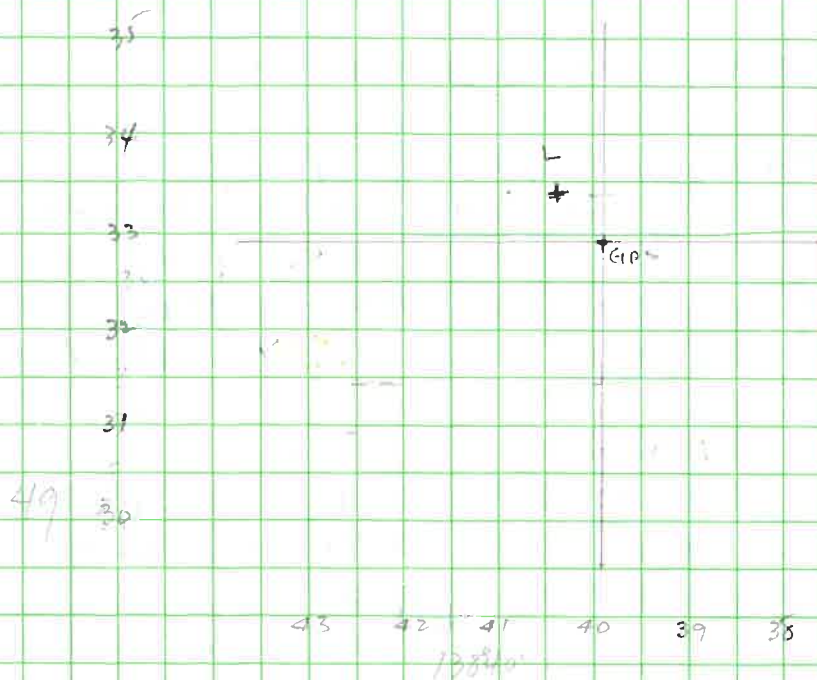
Several worm-like flatfish $\frac{1}{2}$ " ϕ x 10" long. SALP?

91/5/4 PDT

0053 - 1500-4200 m Cast messengers.

p20

$$\begin{array}{r} 680.5 \text{ m/s} \\ 111.1 \\ \hline 539.2 \end{array}$$



$$\begin{array}{r} 33.32 \\ - 32.92 \\ \hline 0.40 \end{array}$$

$$\begin{array}{r} 40.37 \\ - 39.95 \\ \hline 0.42 \end{array}$$

0.40

0.42

0.40

0.42

$$49.33.0$$

$$49.32.0$$

$$49.55.0$$

$$20$$

$$= 0.64075 + 40$$

$$= 0.2595$$

00 korenc out by
~0.5 m/s

0.26

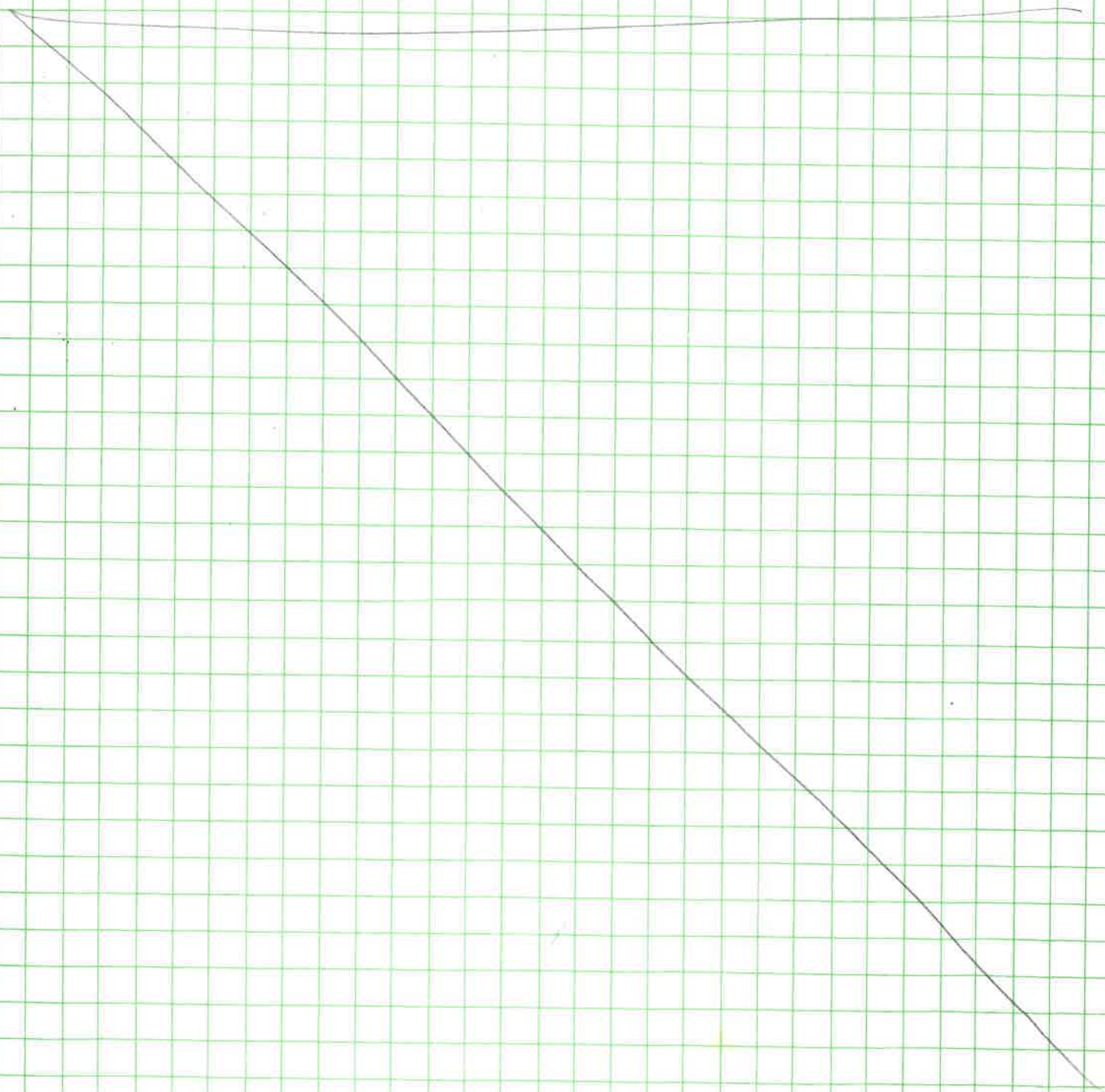
$$\begin{array}{r} 16+ \\ 07 \\ \hline 23 \end{array} = 0.48 \text{ m/s}$$

02/2 CTD # 31 to 2510 Jb.

03/2 completed CTD cast, 49 57.81 145 03.02

300 m bottle leaking bottom "O" ring.

400 m water will flow when the top vent
is tight shut. (check "O" ring)



YEAR	91	MONTH	05	TIME ZONE	UTC	SHIP	PARIZEAU	CRUISE	9108	PAGE	3 OF		
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC.	STD TIME	HYDRO CONSEC.	MESSENGER TIME	HYDRO SALINITY	OXYGEN	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY	NOTES
3	MP21	3977	0639 49 37.49 0724 139 39.76	24	0643	/				7164 32.603	25		GPS. RAINING, 18kt @ 330° 1508h. Jke slats & bth.
3	MP22	3917	1050 49 41.96 11:33 140 39.75	25	1057	/				6.979 32.564	26		
3	MP23	4070	1446 49 45.396 1530 141 39.849	26	1449	/				6.746 32.509	27	✓	OVERCAST. 1 RABBIT 1 FLOATING GOOINCY BIRD
3	MP24	4003	1841 49 49.41 1923 142 40.53	27	1845	/				6.978 32.562	28	✓	GPS. ALMOST SUNSHINE CTD @ 1504h.
3	MP25	4145	2238 50 00.03 23:18 143 36.87	28	2241	/				6.866 32.572	29	✓	Very clean CTD trace both up and down
4	MP35	4157	0133 49 59.004 0211 144 19.718	29	0136	/				5.858 32.600	30		loops OK ✓ Sunny, calm.!
4	MP26	4264	0430 49 58.74 — 145 02.34	30	0433	30	0631 84 1043 0753 111 1079			6.569 32.619	31		GPS. calm. 25rs w. CTDs plenty of wire left.
4	MP26	4264	— 49 58.26 — 145 02.60	31	0912	31	1135 112 2048 1258 139 2075			6.550 32.616	—		
4	MP26	4264	14:27 49 58.92 1538 145 00.98	32	1431	/				6.525 32.612	32		2505 m CTD to low Cu. 10kt @ 310°. several albatross
4	MP41	4270	1802 50 26.60 1906 145 00.93	33	1805	/				6.383 32.604	33		GPS. CTD to 1503 m OCEAN AIR SAMPLE AT NOON.
4	MP32	4269	2125 50 54.12 2209 144 59.48	34	2131	/				6.470 32.602	34		CTD @ 1508h.
5	MP49	4065	0031 50 53.78 01:08 144 15.53	35	0034	/				6.707 32.592	35	✓ *	

$$\begin{array}{r} 8.79 \\ 8.67 \\ \hline \end{array}$$

$$= \Delta \varphi$$

$$.12$$

$$\Delta \gamma = \begin{array}{r} .52 \\ \times \end{array}$$

$$\begin{array}{r} 46.75 \\ 45.23 \\ \hline 15.2 \end{array}$$

$$\cos 51^\circ = \begin{array}{r} \times .52 \\ .629 \\ \hline \end{array} = .327 \text{ miles}$$

$$\begin{array}{r} 1.52 \\ + .629 \\ \hline .957 \end{array}$$

$$= .957^2 + .12^2$$

$$.916 +$$

$$.014$$

$$\hline .930$$

$$- .031$$

$$\sqrt{.930} = .964$$

horiz. c.

$$\begin{array}{r} R14 \\ J' \\ 14828 \\ -11882 \\ \hline 2946 \end{array}$$

51

R14 is only a 300 miles from Cape St J

horiz. out by ~1 mile

5 May

1500 removed thermometers from 2500 & 4200
riskin bottles.

17:44

GPS

51 08 673

138 45 230

Depth 2700m

LORAN E

51 08.79

51 09.0 } Bridgebay
@ 17:14

138 46.75

138 47.5

Stn

MR14

Stn MR13

hydro cancelled due to high winds

6 May

0305

Stn MR11 large swell developing. Wind 31 knots

88

LC

87

GPS

86

GPS

85

84

7

6

5

4

3

2

1

0.0

1

2

3

4

5

6

7

8

9

DAILY LOG

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YEAR	91	MONTH	05	TIME ZONE	UTC	SHIP	PARIZEAU	CRUISE	9108	PAGE 4 OF			
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC	STD TIME	HYDRO CONSEC	MESSANGER TIME	HYDRO SALINITY	OXYGEN	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY	NOTES
5	MP33	3375	0343 50 53.59 0426 143 34.35	36	0346	/				6.594 32.586	36		GPS 10 W-ST, 20 kt @ 300° 1 seal. waves but little swell.
5	MR20	3350	0614 50 55.37 0703 142 59.88	37	0619	/				6.869 32.564	37	*	GPS. Rough bottom. 24 kt @ 325°.
5	MR19	3920	0927 50 57.97 1007 142 19.43	38	0929	/				6.796 32.564	38		
5	MR18	3894	1224 50 59.906 1306 141 37.860	39	1228	/				6.716 32.541	39	*	25/26 Knt wind @ 300° T
5	MR17	3867	1523 51 01.79 1610 140 54.55	40	1526	/				6.729 32.556	40	✓	GPS. Low overcast.
5	MR16	3810	1821 51 03.94 1903 140 12.47	41	1824	/				6.791 32.544	41	✓	GPS. 20 kt @ 315° 1 SEAL
5	MR15	2700	2120 51 05.91 2205 139 28.90	42	2125	/				7.100 32.528	42	✓	
6	MR14	2700	0013 51 08.880 0056 138 48.875	43	0017	/				7.306 32.536	43	✓	overcast, rain, 12 Knts @ 317° 1.6 km off station
6	MR13	3677	0256 51 10.98 0411 138 02.67	44	0259	/				7.419 32.523	44	yes	CTD TO 2500 - 25-30 kt @ 310 GPS
6	MR12	3697	0605 51 12.93 0651 137 26.80	45	0608	/				7.273 32.525	45	yes	GPS. 25-35 kt @ 325° 1 SEAL.
6	MR11	3650	0920 51 14.64 1003 136 39.46	46	0925	/				7.206 32.516	46	yes	30 knt wind.
6	MR10		1227 51 16.617 1308 135 57.010	47	12:30	/				7.152 32.531	47	*	25 Knts with gusts to 45 data starts @ 10m.

C Sail locked up at 1500 UTC

This occured when A drive was full it did not transfore to B drive.

Restart at 2000 UTC

7 May

0005 reset computer time was 1 min. slow.

0220 completed analysis of oxygen samples from MR08

0330 obtained IMA files of CTD #50 & 54. but after data processed the computer locked up. I had to a cold boot to get computer to work again.

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DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/LONGITUDE	STD CONSEC #	STD TIME	HYDRO CONSEC #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
6	MR09	3511	1525 51 18.44 1611 135 14.89	48	1529	/				6.941 32.533	48	✓	GPS 10kt @ 190° CROSSED SWELL + SEA 9/10 CU. LOOP SAMPLE MISSED
6	MR08	3369	1826 51 20.65 134 33.11	49	1829	49	2039	140 1003 160 1031	7.337 32.490	48	-	-	GPS. 2000 m CTD.
6	MR07	3200	2340 51° 23.061 00:24 133° 49.888	50	2342	/				7.161 32.506	49	-	Loop nutrients. Down at 00:002
7	MR06	3000	02:33 51 25.10 03:13 133 06.68	51	0233	/				7.956 32.281	50	-	LAST LOOP NUTRIENTS + PHYTO
7	MJ05	2760	0525 51 26.97 06:10 132 24.00	52	0528	/				8.003 32.227	51	-	GPS. 20 kt @ 300° COMPUTER ALMOST 1 MIN. SLOW LOOP SAL. ONLY.
7	MJ04	2560	0717 51 35.16 132 06.51	53	0728	/				7.833 32.247	52	*	
7	MJ3A	2437	0853 51 39.02 09:36 131 59.09	54	0859	/				7.986 32.242	53	*	
7	MJ03	2328	1030 51 42.86 131 50.20	55	1034	55	1208	161 2048 181 2068	8.031 32.260	54	✓	✓	CTD @ 1520 dB.
7	MS2A	2065	1340 51 46.88 14:22 131.41.24	56	1344	/				7.917 32.332	55	✓	
7	MS02	2090	1457 51 51.11 1540 131 31.89	57	1459	/				7.875 32.308	56	✓	GPS 18 kt @ 310° light rain. Temp profile changed considerably above 500m on upcast.
7	MJ1A	1860	1614 51 55.13 1657 131 22.70	58	1618	/				7.989 32.286	57	✓	GPS. RAIN. 22 kt @ 330° 10 GOONY BIRDS, 3 PETRELS?
7	MJ01	665	1737 51 59.90 1800 131 14.30	59	1739	/				7.749 32.091	58	✓	GPS. 711 m CTD. 8 GOONY BIRDS. LAND IN SIGHT.

9 May 91.

0207 Stn MA05
completed CTD

0632 - Stn MA3B - Sea otter near ship

DAILY LOG

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YEAR		MONTH		TIME ZONE		SHIP		CRUISE		PAGE		OF	
91		05		UTC		ARIZEAU		9108		6		OF	
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC #	STD TIME	HYDRO CONSEC #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
7	MJ00	85	1823 52 01.80 1833 131 09.92	60	1826	/				7.815 32.079	59	✓	GPS
8	MP88	2040	0220 51 41.00 0302 131 18.81	61	0225	/	/	/	/	8.025 32.225	60	✓	GPS. Start up 0245
8	MI03	2555	0446 51 22.61 0526 131 13.99	62	0449	/				8.207 32.145	61	✓	GPS. CALM. 1 SEAL.
8	M089	2604	0713 51 02.73 1311 14	63	0718	/				8.389 32.315	62	-	
8	MH05	2630	0755 50 42.53 1035 131 08.10	64	0957	/				8.102 32.449	63	✓	large swell wind 21.
8	MG05	1800	1300 50 24.55 1303 36.02	65	1303	/	/	/	/	8.355 32.504	64	✓	large swell wind 21kn
8	MF05	1892	1555 50 05.74 1642 130 06.12	66	1558	/				8.781 32.280	65	✓	GPS. 28 kt @ 325° 10 Low Stratus, light rain showers.
8	ME05	2390	1901 49 47.75 1948 129 35.68	67	1910	/				8.961 32.100	66	✓	1 Seal.
8	MD06	2440	2304 49 15.83 2347 129 08.53	68	2307	/				9.172 32.024	67	✓	GPS
9	MP06	2569	0503 48 44.61 0548 127 39.52	69	0509	/				9.626 32.093	68	✓	GPS. RAIN SHOWERS, 15 kt @ 330°, 3 WHITE BIRDS A FEW LARGE JELLYFISH.
9	MA05	2616	0830 48 20.07 1045 127 05.53	70	0832	70	1007	182 2048 201 2067	10.172 31.733	69	-		1500m CTD AND HYDRO.
9	MA04	2170	1200 48 30.05 126 52.17	71	1204	/	/	/	/	9.966 31.734	70	✓	GPS POSITION.

53
54
62

YEAR 1991		MONTH 05		TIME ZONE UTC		SHIP PARIZEAU			CRUISE 9108			PAGE 7 OF	
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC #	STD TIME	HYDRO CONSEC #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
9	MA3B	1530	1329 48 36.05 1404 126 43.92	72 1330						9.914 31.733	71	✓	GPS Position CPS 76 1485.5 M
9	MA03	1325	1430 48 39.99 1513 126 38	73 1435						9.817 31.797	72	✓	GPS POSITION 25 kt @ 325°
9	MA2B	460	1549 48 45.29 1607 126 32.04	74 1551						9.816 31.823	73	✓	GPS. 9/10 low CU 20 kt @ 320°
9	MA02	176	1642 48 50.34 1653 126 25.30	75 1644						9.827 31.797	74		GPS.
9	MA1B	133	1730 48 55.36 1739 126 17.88	76 1732						9.977 31.667	75		GPS Sunny.
9	MA01	84	1814 49 00.11 1823 126 11.61	77 1816						9.945 31.555	76		GPS. Many birds in distance. Sunny.
9	MA0B	55	1853 49 03.72 1859 126 06.04	78 1855						10.464 30.672	77		
9	MA00	38	1938 49 08.01 126 00.33	79 1941						10.465 30.484	78		
9	MAAB		2033 49 10.50 2100 126 01.73	80 2035-80						2068 10.698 2072 30.286			Ahoua Bay + 202-206