

CRN

9309

DAILY LOG

INSTITUTE OF OCEAN SCIENCES
OCEAN PHYSICS

DATE

14 May -

VESSEL

J.P. Tully

PROJECT

93-09

Captain: _____

First Officer: _____

Second Officer: _____

Third Officer: _____

Cruise Participants/Agencies: *Ocean Physics, Climate Chemistry, UBC*Scientific Personnel: Party Chief: *Frank Whitney*

Name	Watch	Cabin	Name	Watch	Cabin
<i>Ron Bellegay</i>	<i>12-4</i>		<i>Philip Boyd</i>		
<i>Tom Soutar</i>	<i>8-12</i>		<i>Diana Verela</i>		
<i>Bernard Munkley</i>	<i>8-12</i>		<i>Hugh McLean</i>		
<i>Nik Hall-Patch</i>			<i>Jingjing Wu</i>		
<i>Reg Bigham</i>	<i>4-8</i>		<i>Sean Doherty</i>		
<i>Marie Robert</i>	<i>12-4</i>		<i>Mark Wen</i>		
			<i>Steven Ruskey</i>		

Second leg of cruise: Party Chief: _____

Third leg of cruise: Party Chief: _____

Data logging system: Unit number: _____

Program version: _____

CTD deck unit make: _____

model: *87108*

serial no.: _____

Computer make: *HP Vectra*

model: _____

serial no.: *05390*Monitor make: *Nec*model: *multi 2A*

serial no.: _____

Printer make: *Ranen*model: *PR 9102*

serial no.: _____

1st CTD make: _____

model: *8737*serial no.: *59901*

Temperature sensor

model: _____

serial no.: *51429*

coefficients: slope: _____

offset: _____

Conductivity sensor

model: _____

serial no.: *59193*

coefficients: slope: _____

offset: _____

Pressure sensor range: *6000.*

psi

serial no.: _____

coefficients: FSP: _____

dB

offset: _____

Transmissometer

model: _____

serial no.: _____

coefficients: slope: _____

offset: _____

Comments: _____

High precision CTD with 2 thermister probes

2nd CTD make: _____ model: _____ serial no.: 58483
 Temperature sensor model: 87401 serial no.: 57915
 coefficients: slope: _____ offset: _____
 Conductivity sensor model: 87410 serial no.: 58814
 coefficients: slope: _____ offset: _____
 Pressure sensor range: 3000 psi serial no.: _____
 coefficients: FSP: _____ dB offset: _____
 Transmissometer model: _____ serial no.: _____
 coefficients: slope: _____ serial no.: _____

WINCHES:

CTD make: _____ model: 327 serial no.: 1482
 counter make: _____ model: _____ serial no.: _____
 HYDRO make: Swann model: 420 serial no.: 1432
 counter make: Renli model: 8750 serial no.: _____
 Spooling make: _____ model: 455 serial no.: 1450
 Drag make: _____ model: 327 serial no.: 1306
 Other make: Lanteo 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:

9309 Lines P+R

May 12-13 Loaded Tully

May 14 0800 Depart Port Bay, for Lantea Winch tests in Saarnil Inlet. Bob Macdonald (PGC) onboard to help adjust power supply to winch.

1230 Test Tucker Around in Saarnil, Nylon lanyards were not strong enough to hold nets i.e. all nets stripped.

1300 Sailed for Line P. Captain Anderson explains crew shortage + ensuing problems with night work. Rosette casts will be a problem since 3 crew are needed to deploy/recover when bungee + A-frame are used.

Power ON/OFF to check for ground faults. All equipment in lab shut down temporarily (RDI, Chl fluorometer on SAIL, etc).

1635 JF1 - Loc A @ 48° 16.385 123° 30.088 @ 1635
SALN/CHL/NUT.

1817- JF2 loop samples 48 17.152
124 00.439
S%o, CHLor, Nutrients

2015- JF3 LOOP SAMPLES 48 26.952
124 30.112
S, C, N.

MAY 15th

0000: Station P1, CTD + SAMPLES

02:23 - STATION P2

- CTD TO 110 m.
- SOUNDER NOT WORKING
- BEEPED* ON THE FIRST 2 ATTEMPTS TO TURN IT ON, THEN DEAD,
* + ALARM LIGHT ON.
- Depth = 118 m from the bridge.
- Loop samples.

034

- STATION P3
- Depth from the bridge: 740
- CTD to 734 m
- Stopped a long time ($\approx 3-5$ min) at 435 m to fix wire angle.

Sounder fiddled with - seems OK?

0530

fluorometer readings $\pm$ sample taken #4

0630

fluorometer readings $\pm$ sample taken #5
5% bottles labeled for P04.

0800 Slowed to arrive at P04 at 0800 (Day crew needed for RoseHecast). Hydraulics for 2 winches on same pump - cannot proceed w/ Rosette.

0840 Bottle cast to 250m for Sed. Trap water.

[935
950]

CTD with transmissometer. $48^{\circ} 39.002$ N
 $126^{\circ} 39.240$ W

- CTD conductivity cell in pump path, ~~not~~ correct
~~working~~ - Salinity at surface " 21.000 " coefficients yielded
depth " 41.000 " salinity values

10¹⁵
10⁴⁵]

light meter.

$48^{\circ} 39.226$ N
 $126^{\circ} 38.253$ W

11⁴⁵ am - Bottle cast - VSC
12⁴¹

48° 39.027 N
126° 28.161 W

1250 Licor LCMETER reconnected. Likely not collecting data for past day.

1310: Start rosette cast

1421: Rosette on board.

1440: Start net haul from 200m to surface

- all bottles fired

Digital thermometer S/N T679 3.079 on bottle #2

- T572 3.072 CTD = 3.084 34.465

1500 finished net vertical haul.

1613 Began Sed. trap deployment 48 38.865, 126 36.858W near P4.
Single MK III trap 500m off bottom (bottom = 1285m). 21 sample cups timed for ~lydar.

1735 30L Go-FLO For JIMING → 500m + 400m

1850 TUCKER TRAWL TEST 2 end at 19:06

1931 messenger time go flow cast

0° wire L

② 30L go flo's 300 & 200 m.

2128 depart MP04. 4840.25 126 40.66

2313 arrive (MP05) CTD 2100 Jb

2320 start CTD

2350 depth 4842.04 12710.18

MAY 16th

0021 CTD on board, 48° 42.730
127° 10.080

Oxygen Blank .007, .008, .004, .007
standard .720, .717, .718

MAY 16th

0235 Arrive on Station P6

0242 CTD Cast to 2579 m
Up at 0315, 48°44.909
127°39.926

0352 IN AT 0352; 48°44.702
127°39.801

0500 fluorometer sample #1 & readings

0555 ARRIVE @ P7 48°46.33
129°10.608

CTD CAST in DECK

* NOTE - CON SEC #1

@ 0721

SHOULD BE 7 NOT 11

AT 48°46.633 128°10.747

CHANGE FILE [DONE - NHP]

0727 Depart Stn MP07

Sh MP08

0953 48 48.95 128 39.83 CTD & depth 2540.

1028 CTD onboard, 48 48.96 128 39.35
Winch problems - hydraulic seals leaking?

1230 Ship arrives at P9
Change winch → Lantec

TIM + Ship's Electrician inspecting LANTEC Control Panel -
corrosion is extensive inside panel. SEE NEXT PAGE

NOTE: The lat & long & depth in the header
of file P9_1 won't be accurate because of
had to edit the cast before the tests &
we are moving during these tests.
See this book for accurate position &
depth

MAY 16th

0235 Arrive on station P6

0242 CTD Cast to 2579 m
Up at 0315, 48°44.909
127°39.926

0352 IN AT 0352; 48°44.702
127°39.801

0500 fluorometer sample #1 & readings

0555 ARRIVE @ P7 48°46.33
128°10.608

CTD CAST in DECK

* NOTE - CON SEC #1

@ 0721

SHOULD BE 7 NOT 11

AT 48°46.633 128°10.747

CHANGE FILE [DONE - NHP]

0727

Depart Sta MPO2

Sh MPO8

0953 48 48.95 128 39.83 CTD & Depth 2540.

1028 CTD onboard. 48 48.96 128 39.35
Winch problems - hydraulic seals leaking?

1230 Ship arrives at P9
Change winch → Lantec

TIM + Ship's Electrician inspecting LANTEC Control Panel -
corrosion in extensive inside panel. SEE NEXT PAGE

NOTE: The lat & long & depth in the header
of file P9_1 won't be accurate because of
had to exit the cast before the tests &
we are moving during these tests.
See this book for accurate position &
depth.

YEAR	93	MONTH	05	TIME ZONE	UTC	SHIP	Tully	CRUISE	73-07	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
14	JF01		2335	4816.39	\						1		
				123 30.09									
15	JF02		0117	4817.15	\						2		
				124 00.44									
15	JF03		0315	4826.95	\						3		
				124 30.11									
15	JF04		0510	4831.72	\						4		
				125 00.11									
15	P1	138	0700	4834.961	1	0713					5		CTD to 131.6
			0733	12529.994									
15	P2	118	0917	4836.099	2	0921					6		CTD to 110 m Sounder not working
			0930	12600.004									
15	P3	740	1046	4837.598	3	1051					7		CTD to 734 m.
			1124	12620.340									
15	P4	1327	2002	4839.910	4	2010	1	1003			8		Rosette cast to 1295 13 bottles.
			2122	12639.729			13	1026					
16	P5	2114	0613	4841.44	5	0620					9		up at 0650 4842.04 127 10.18
			0724	12709.75									
16	P6	2570	0934	4844.900	6	0942					10		CTD to 2579 up at 1014
			1055	12740.331									
16	P7	2537	1253	4846.295	7	1307					11		CTD to 2538 UP @ 1339 on Dec 1421
			1427	12810.629									
16	P8	2549	1614	4849.07	8	1621					12		
			1730	12840.17									

MAY 16th cont'd.

NOTE (cont'd): Header will be ok, I edit & select the file again because no capture was made.

1335: CTD on board, go back to station.

1346: Arrive on station P9

1433 CTD at 2403m , $48^{\circ}50.793$
 $129^{\circ}09.787$

1517 CTD in , $48^{\circ}49.577$
 $129^{\circ}09.426$

Hit the bottom, mud in pressure sensor.

RE LANTEC ADJUSTMENTS.

- SENSITIVITY RESISTOR IN CONTROLLER INCREASED IN VALUE. THIS EFFECTIVELY REDUCES THE VOLTAGE APPLIED TO THE BRIDGE (THIS IS THE POT+2 RESISTORS THAT DETERMINES PAY IN OR OUT AND BY HOW MUCH). BY REDUCING THE BRIDGE EXCITATION VOLTAGE THE MAX SPEED IN EITHER DIRECTION IS REDUCED AND THEREFORE IT TAKES MORE HANDLE MOVEMENT TO REACH THE SAME SPEED.
- AT THE SAME TIME NOTICED THAT THE HANDLE MOVEMENT TO FIRST DRUM MOVEMENT IS MUCH GREATER ON PAY IN THAN PAY OUT. THIS IMPLIES THAT WHEN IN A CENTER HANDLE (OR BRAKE ON) POSITION, THE BRIDGE IS NOT PERFECTLY BALLANCED. THIS MAY ACCOUNT FOR THE SLIGHT CREEP THAT IS THERE WHEN AT HEAVY LOAD. ATTEMPTING TO ADJUST THE BALLANCE POINT BY ROTATING THE POT IN THE NYLON GEAR ON BOTTOM OF HANDLE BUT AS YET NO NOTICABLE EFFECT.

TIM SOUTAR.

1747 (00:47) START CTD CAST TO 2650 m
UP@ 1830 (11:32)
max winch speed in - with remote
is 1.4 m/sec
1922 Depart Station -

2111 arrive Sta P11

2116 start CTD. Termination pulled into block.

2200 4855.85 1300969 CTD near bottom at 2778 db

MAY 17th

0043: Arrive Station P12 digital thermometers
0110 Rosette in the water
First 200m at 0.5m/s T572 -
then 0.7m/s T679 -

0151 - stopped at 1510m to get winch
correct spooling

0226 Rosette at 3200, 48°58.231
130°39.175 { digital thermometers
1.655 T679
1.647 T572

0415 Rosette on deck, 48°58.020
130°38.089

04:40 Start CTD- Transmissometer - UBC
48° 58.074 N
130° 39.638 W

5:00 CTD- Transmissometer on board -

5:10 Bottle cast - UBC. 48° 57.910 N

5:40 Finish UBC Bottle Cast 130° 39.099 W

7:00 FINISH UBC NET Tows (100m X 3)

[illegible]

17 May 93

Sh P13 CTD and loop samples.

1143 1st J₀th 4902.40 131 39.25

1224 CTD on deck, 49° 02.261
131° 38.898

1606 CTD DOWN @ 49° 07.375 / 132° 39.900
TO 3366 (NOT ON BOTTOM)
ON DECK @ 1740 49° 07.450 / 132° 39.240

Sh P15 CTD + loop samples

2124 start CTD, cast.

2212 CTD # 3446 4912.42 133 39.11

- frequent spikes on salinity trace
(unusual)

MAY 18th

0241: Arrive at station T16

0303: UBC: CTD + transmissometer
cast to ~150 m.
49° 17.062
134° 40.275

0320 UBC: CTD on board, 49° 17.209
134° 40.612

0325 SALPS AGAIN PRESENT IN LARGE NUMBERS AT SURFACE (PVAJ!)

0343 UBC: start bottle casts to 50 m.
49° 17.471

134° 41.031

last bottle (surface) 0454 - messenger
49° 18.490 0° wine angle

134° 42.576

0504 Start net haul (4) 3 to 100 m. end at 6:30am
(ALL NETS FILLED WITH SALPS) 1 to 100 m (~~cast haul~~)
150% of COD END

FOUND GREASE ON NISKIN AIR BLEEDERS - CLEANED OFF - DON'T KNOW WHERE IT CAME FROM (dropped off ^{last sec} cable)

- Rosette out 0659 PDT 49 19.117 134° 44.5/6

- start about 1/4 m/sec

- gradually increasing; by 1000m was 1 m/sec

- ^{12 sec. for 10 m} took winch to about 2/3 speed 1 m/sec to 2/3 m/sec. - little change in tension though peaks were ~~less~~ less

- bridge swaps ship end for end due to sewage funnel getting onto bridge (and for greater control) just as cast started up.

- heave combined with ship's motion pushed wire tension to 4600 at peaks.

Lanter Hauler pressure 1000 - 1500 psi

0954 Rosette onboard 49 20.21 N
134 45.12 W

Digital thermometer, bottle 2 @ 3400 dB
T679 1.562
T572 1.555

oxygen samples put into cooler. Yesterday's samples had some de-gassing problem, making end-point determination difficult.

= 1320: Arrive on P17

No bottom on sounder

1414: Cast to 3005.1 49° 21.378
135° 39.530

1454 CTD on board, 49° 21.662
135° 39.433

1456: Leave station

1839 ARRIVE P 18
1847 START CTD CAST
CTD TO 3003.5 49° 26.177 / 136° 40.311
765 m above bottom

1156: Arrive at P19

MAY 19th

0005 Starting CTD P19

0106 Stop at 2011 to correct big wire angle

0115 Start again at 2190m

0128 CTD at 3003.4 49° 30.555
137° 41.038

0327 CTD on deck, 49° 30.082
137° 41.071

0330 Leave P19

0810 - In area of QEP1-G, ship de-clutched
Ranging - 3984 Too close
drift off -

0829 Range 4073

0830 Send "release"

0832 - On surface - channel 71 -

0930 - proceed to recover

1120 Mooring onboard 49 33.06
138 38.96

local + 7

3700 2500

YEAR	MONTH	TIME	ZONE	SHIP	CRUISE	PAGE	OF						
93	5	UTC		Tully	9309	3							
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
19	P19	3950	0656 49°30.120	19	0705						23		CTD to 3003.4
		1030	137°40.180										193 m above bottom
19	P20	3989	1510 49°33.60					59 1054					CTD to 3002.1
20	P20	3989	0550 138°29.832	20	0140	4	0222	80 1096			24		
20	P21	3981	0920 49°38.100	21	0924						25		CTD to 3013.4
		1112	139°20.084										
20	P22	3909	1454 49°42.09	22	1508						26		
		1643	140°37.96										
20	P23	4072	2025 49°46.010	23	2040	5		81			27		Rosette cast to 3001.3
		2258	141°40.281					102					
21	P24	4009	49°50.5	24	0306						28		58483 CTD - started
		0430	142°39.90										rising after 8937 CTD failed
21	P25	4165	0812 50°00.028	25	0819						29		CTD to 3009
		1003	143°36.175										
21	P35	4169	1245 49°59.987	26	1250						30		CTD to 3001.2
			144°18.086										Transmissometer cast to 150 m

1211 UBC: Lightmeter down cast

1230 UBC: CTD with transmissometer

49° 34.002' N

1250 UBC: Bottle cast

138° 40.868' W

5, 2, 5, 17, 40, 55m 10m (TRACE)

14:10 - UBC Net casts 100m
15-20

Deployment
1706 - QEP1-H free fallen
Depth on sounder 3390 + keel x corr.
Position -

1840 CTD ROSSETTE @ SURFACE
down at 2/3 m/sec.

- up to 11 m/sec by 1000m

CTD To 3003 @ 49° 33.560 / 138° 40.209

2040 CTD on land 4933.74 13840.98

Mark #1 { 2870 m @ 50 m/min Tension 3.1 to 5.2
Swire 2-3 m. X 0.7 (f).

2150 Stopped deep hydro. cast 3710-1274 m = 2436

2436m into cast. One of 3 strands on hydro wire
is broken. Taped up to finish recovery, no samples taken.

2250. DEEP HYDRO COMPLETE.

LEAVING

P20.

49° 34.513

138° 41.606

(point) not m22, pp. 61, 7, 8, 2

now it's too far

3000 m

Note: A complete strand of the battle wire (3x19) was found to be broken at about 2100 m. The winch, therefore, cannot be used for deep bottle casts - i.e. no 4200 m casts. The NOCE CTD with the deep pressure sensor has something wrong with the S₁₀₀₀ channel, so we have switched to CTD # 58483 which has only a 3000 db sensor.

Because CTD # 58483 - the spare CTD has't got a deep "Woce" pressure sensor, we cannot go below 3000 m. We cannot get water samples below 3000 m.

In the future, ~~it is not possible to~~ a solution to this type of problem would be to buy a deep pressure sensor for the "back-up" or spare CTD. (also whenever possible spare sensors?)

MAY 20th

0220 Arrive at P21

0224 CTD in water 49°38.100
139°40.084

0313 CTD at 3013.4, 49°38.059
139°40.096

0407 CTD IN, 49°38.281
139°40.087

0413 Leave Station

0434 fluorometer readings & sample C11

0534 fluorometer readings & sample C12

0630 fluorometer readings & sample C13.

Sh P22 CTD and long samples.

0805 start CTD

CTD salinity values too high @ 1200 34.548, should
be 34.42. Temperature looks good.

Upcast logged.

Program lockup at 2075. Repeated tries of using
on/di switch get program started at 2000.
-Cleaned conductivity cell. Globules of ?? on one electrode.

0943 CTD on board 4942.45 14039.77.

1020 Repaired broken mounting on Rosette bottle #11. Used
PRC 705 glue for repair and large cable tie to secure
bottle to Rosette.

1325 arrive P23

1330: UBC shallow bottle cast.

1340

Begin Rosette cast, P23
While Rosette on deck, had to stop
probe & start it again because it
stopped giving data.

Speed: 600 m → 700 m in 1 min 20 s.

Probe stopped at 1027.4 on the
way down.

Started again at 1117.

We stopped the winch, turned deck
unit off-on.

Again at 1230.7,

Started at 1295 after the deck unit
has been "off-on" 3 times.

[- Salinity readings were too high on downcast, "wandered" on up
cast - cleaning obviously hadn't worked.]

1428

CTD at 3001.3, 49°46.010
141°40.288

1517

Down & up again around 1131 because of
spooling problems

1553

Rosette on board, 49°46.287
141°40.660

1573

Leave station P23

Bottle #10: Valve was open
contaminated ???

T679 - 1.616 } BOT # 2
T572 - 1.609 }

T451 - 6.795 } BOT # 21
T647 - 6.790 }

oxygen flask #102 @ 3000 had loose stopper.

May 20 1993 Cont. P.d. time

Lantec winch - bracket against which the drive chain adjustment bolt pulls has broken. The perimeter bolts may have allowed the motor to move (?)

- 1830
- Change to CTD # 58483 as there is a problem with WOCE CTD - 5% values. ^{Salinity}
 - change to 329 winch with new .322 wire - 4000 + m.
 - Remove pinger, replace with 25Kb pig.
 - CTD Cast to 3000 m only!

P24

2035 49 50.74 142 40.17 3011.15

2126 CTD onboard 49 50.75 142 40.26

MAY 21, 1993

0112 Arrive at P25

Deck unit OFF,
ON just before cast

0119 CTD in water, 50°00.027
143°36.174

- Problems with the winch
- Sounder pens going too fast
- Probe not working?

T° = -0.3
Sal = 64
P = -1.0

} Surface to
30 m on
winch

What a night!!!

→ Have to use the other computer!!! (& CTD)
Thanks for the note!

May 21, 1993 - Cont. P.D. Time

- 0138 Start cast again with other computer.
- 0215 CTD at 3009 49°59.846
143°35.865
- 0258 CTD on board, 49°59.833
143°35.632
- 0303 Leave station.
- 0545 ARRIVE P 35
- 0550 START CTD
- 0630 CTD to 3001.5 @ 49°59.957 / 144°18.126
- 0705 CTD ON Deck @ 49°59.737
144°18.126
- 0738 Transmissometer cast to 150 m. (Phillip)
49°59.561' N
144°18.126' W
- 0757 System 1 Computer time slows by 13 minutes. Clock
reset using SETIME.
- 1110 FD* in water at 50 2.825N 144 55.168W. 1000m
dredge with 9 bongo sediment traps; Argos radio beacons.
External beacon switch broke on deployment, recovered float
& hand wired switch.
- 1135 Redeployed beacons 50 2.458 144 54.812
- 1225: GoFlo cast to 50 m UBC.
- 1240 Light profile UBC 50° 04.026' N
145° 00.364' W
- 13:00 CTD + Transmissometer UBC - 50° 04.028' N
11:15 " end 145° 00.747' W
- 13:15 Bottle cast UBC (1 bottle - 5m)
- 13:30

May 21 1993 cont.

~ 1300 Released sediment trap mooring
1350 Began trap recovery. 50 04.26 144 59.83
Trap stopped on sample #17.

Beacon on COCC mooring 19039 - Channel 72

1825 PAPA 22 3600 METER MOORING DEPLOYED
50 04.363
145 00.070.

1900 - 20³⁰ Bottle cast UBC - 6 depths - up to 500 -
50° 00.642' N
145° 00.618' W

2030 @ 2300: Net casts UBC

[Rebuilt conductivity cell for CTD #59901]

MAY 22ND

0012: UBC: Net casts

0055: UBC: GoPro casts to 20 m.

0152: UBC Net casts

0300 NET CASTS FINISHED.

0500. Start productivity casts - wire angle problems.

0645 - Productivity cast finished - Rig drifter.

0718 - Drifter in 50 00.89 145 03.66

BEACON ON CH 74

22 May 93

Oxygen Blanks .006 .005 .004 .008 .005 = .005
standard .717 .716 .718 = .7168
10ml dispenses 10.035 (#93-10-2)

0940. RATHCON DEPTH RECORDER STANDS BELT
RACING RANDOMLY. IN BETWEEN TIMES O.K.

1340 - here clamp put on #11; earlier repair
not successful

- tested Rosette using 8715 CTD # 58483
87107^{CTD} deck unit and 1015 PM G.O. Rosette
deck unit. Successfully fired bottles #1 and #2
using this set-up.

Will use it for P26 Rosette cast as
we're not sure yet whether conductivity cell
~~is~~ rebuild for WOCE CTD # 59901 has
been successful.

1505 PRODUCTIVITY INCUBATOR 50 01.863
BACK ON BOARD 145 04.020

1540. Ready to begin rosette 50°00.030
144°59.863

1555 START ROSSETTE CAST @ 50°00.136
#27 144°59.856

ROSSETTE TO 302.7 @ 50°00.390
144°49.618

1843 Rosette on board, 49°59.923
145°00.227

- all bottles fired using "new" old system

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

[illegible]

down
8?

up

P26-3
down

1000 m - 34,3940
1400 m - 34,5000
2000 m - 34,5970
2600 m - 34,6459

34,3809
34,4903
34,5912
34,6424

34,3814

1,5902
1,6406

22 May 93

2238 Sunny West and South of Papua cancelled due to weather. Ship here-to!

23 May

0808 Wind 20 knots, clear skies. Position 4946.13 14455.43

1000 Back at P26, start CTD testing

1005 - CTD STARTED DOWN @ 49°59.47
#28 144°59.31

1042 - conductivity cell still offset as on casts P22/P23
- at 3000m - 49°59.364 144°59.74 10:42
- start back up

Bridle made for NOGAP "small" Rosette.

1128 - spooling problem at 1100m on upcast. 5-10 min delay
- surface 49°59.27
144°59.86 11:28

1148 - conductivity has no hysteresis on upcast!
CTD in 9m/s to 150m then

1208 1.5m/s to 300m
1m/s to 800m
1208 back up to 300m
1.5m/s to 3000m

1241 3000m bottom 50°00.05'N 145°00.25'

1318 1.5m/s up...
surface 50.00.04 145°00.45
depth 50.

MAY 23rd cont'd.

14:34: Start Rosette cast, 49°59.968
30 145°00.032

1459: The deck unit stopped. We have to
bring back the Rosette.
Depth 1055.7, 50°00.110
145°00.151

Deck unit apparently not delivering any power
at all. Cast totally aborted.

1704 - Start NOGAP Rosette cast.
31 0.5 m/s to start
0.9 m/s after 1000 m

CTD TO 3002.1 @ 50° 00 91
145° 01 18

TRIGGER UNIT NOT WORKING ∴ NO ROSSETTE SAMPLES
- blowing fuses regularly.

2000. PRECISION DEPTH RECORDER STILUS BELT
SPEED TAKING OFF UNCONTROLLED. CLEANED
ALL CONNECTORS IN MOTOR FEED BACK AND
SPEED CONTROL SYSTEM PLUS OPTICAL ENCODER
ON MOTOR. NO OBVIOUS EVIDENCE OF PROBLEM
BUT NOW RUNS O.K.

2000 - discovered that E.O. ^{female} connector at end of 329
sea cable had been shorting out and damaged connectors
on both Rosettes. Had blown main (undocumented) power fuse
in 87108 WOLC CTD deck unit as well
as fuses and likely output MOSFETs in the NOGAP
Rosette deck unit.
87108 deck unit is now operational again
but NOGAP Rosette repairs will have to wait.

2050 Transmitter cast to 150m (Philip)
50° 00.20 N 144° 59.20 W

23:00 - 02:00 UTC SCOR Net casts, zooplankton

Mar 24

0908 (WOLF) Rosette cast to 3000m #32

0.6 - 0.8m descent, light wind ~ 1.5m swell,

1020

depth.

- needed two commands for: one of the 3000m bottles

the 2000m bottle

- was taking it up to 0.8 to 0.9 m/s

- needed 3 attempts at 2400m

at from 1800m in.

- need 4 " at 2200m

(not more probes?)

1100 - While checking for transmitter on ED Star Tim Sutar discovered mooring trans. sending on surface. - Will investigate after Rosette back on board.

1300 - found single beacon buoy on surface still attached to mooring - out in rubber boat. 5 meters of slack in 20 m line. Top of glass sphere string (10-17" GS) can be seen from surface.

1345 It has been decided to lift the system, incl 1200 lb anchor to first trap and remove short line below it (200m) and then lower system into place again. This will proceed only if it appears perfectly safe. Otherwise the mooring will be released, recovered and re-deployed.

1600 Mooring released, 200m kevlar taken out, 20m 3/4 nylon added. A bit hairy, but weather was very good. Ron Belegay says he'll buy everyone involved a can of pop!

Pdt.

May 24 cont.

1830 Recover FDX 50 8.12N 145 04.01W

1900 FDX ON BOARD STA P is Finis

2052 Stn P41

2145 CTD to 3002.5 5027.14 14459.95

2235 CTD on board. 5027.19 14459.92

MAY

25th
Stn P32

0216 CTD on way up, 2036m, 50°53.843
144°59.490

0246 CTD on deck, 50°53.803
144°59.248

0305 - Deploy drifter - flaked out on deck, looked OK.

50°53.986 ' N
144°58.451 ' W.

0547 Stn P49 CTD DOWN @ 50°53.787 DEPTH 3975
144°17.043 (NOT 4200)

0625 CTD TO 3000.1 @ 50°53.490 ECHO LOOKS LIKE
144°17.082 SEA MOUNT?

0700 ON DECK @ 50°53.209
144°17.032

0935 Stn P33 CTD to 3152 5054.01 143 34.41
CTD has to go to approx 3500 to fix over long of
wire on drum.

1106. LEAVE P33 50 54.015
143 34.634

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR 1993

MONTH: MAY

TIME ZONE UTC

SHIP TULLY

CRUISE 9309

PAGE 5 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

25	R20	3622 17)	2005 2134	50°55.696 143°01.074	37	2010	/	/	/	/	/	37		CTD cast to 2883.6
26	R19	3929	1800?	50°57.792 142°14.788	38	0122					9.13 32.443	38		CTD CAST TO 3788
26	R18	3900	0520 0807	5059.98 14139.08	39	0526					9.338 32.485	39		@ 0615 5059.79 14139.26
26	R17	3910	1045 1258	51°02.166 140°56.050	40	1053					9.354 32.427	40		CTD to 3302
26	R16	3815	1542	51°04.06 140°14.20	41	1553	8	1656	147	1106	7362 32.462	41		Rosette cast to 3000 db.
26	R15	3075	2143 2325	51°05.973 139°30.534	42	2148	/	/	/	/	9.618 32.403	42		CTD cast to 3056.3
27	R14		0202		43	0211	/	/	/	/		43		ABORTED
27	R14		5108.77 0434	138°48.16	44	0310								CTD 58483 Depth 03:46 2650 db
27	R13	3612	0720 0910	51°10.980 138°06.304	45	0728	/	/	/	/	9.701 32.385	44		Back to WACE CTD to 3019.6 m.
27	R12	3672	1205 1354	51°12.929 137°23.230	46	1217	/	/	/	/	9.445 32.403	45		CTD to 3007.4
27	R11	3655	1647 1831	51°15.03 136°40.40	47	1659					9.530 32.426	46		OOPS; capstan not on. Hauled at 50m. Restart cast.
27	R10	3660	2116 2310	51°16.925 135°57.560	48	2124	/	/	/	/	9.651 32.397	47		WACE CTD cast to 3006 m

25 May Pdt.

Colinmeter PC900 S/N 900-89 became unstable during analysis of CML 7 oxygen. Samples for 50, 100, 150, 200 and 300 m points are not well defined. Lamp CML 20-17
4987

1305: Arrive at R20

1310: Start CTD cast, 50°55.696, 143°01.074
Not able to find the bottom, and the reflection from the pinger is very weak.

1347: CTD at 2883.6, 50°55.751
143°01.153

1432 CTD on board, 50°56.110
143°01.117

1434 Leave station R20

CTD pull head into the block.
H.D. was dipping the winch.
No apparent damage.

He had hand-held radio hooked on winch cage but was not wearing radio - headphones. Ron B. signalled him to stop but he appeared to be looking down at winch drum. He finally heard people shouting at him and stopped. Very near thing!

1650 - fluorometer readings and sample taken.

1800 ARRIVE AT R19 Two GO FLO CASTS TO 50 m

START CTD CAST @ 50°57.792
142°19.788

1907 CAST TO 3783 @ 50°57.456 WINCH ON 2ND TO LAST
142°19.426 WRAP SO WE STOPPED

1958 CTD ON BOARD @ 50°57.544
142°18.383

- no success in repairing HOSEA deck unit

26 MAY 1993

0104, CTD on deck, $50^{\circ}59.947$
 $141^{\circ}39.520$

0107. Leave R18

0345 Arrive @ Station R17

0353 Start CTD cast, $51^{\circ}02.171$
 $140^{\circ}56.095$

0430 CTD to 3302 m $51^{\circ}01.525$
 $140^{\circ}56.326$

0600 CTD ON BOARD @ $50^{\circ}59.837$
 $140^{\circ}56.227$

0850 - prepare for Rosette deployment. CTD deck unit off. (although it had been started an hour before. Don't know how long it had been off) started it up again.

0855 - Rosette deployed $51^{\circ}04.06$ N $140^{\circ}14.20$ W

(9.37° surface) - to 1 m/s descent at 200 m

1202 Rosette on board, $51^{\circ}03.891$
 $140^{\circ}13.263$

1443 Arrive @ R15

1448 Starting CTD cast, $51^{\circ}05.962$
 $139^{\circ}30.546$

1529 CTD @ 3056.3, $51^{\circ}05.996$
 $139^{\circ}30.441$

1623 CTD ON BOARD @ $51^{\circ}06.121$
 $139^{\circ}30.162$

1902 ARR @ R 14

1911 CTD GOING DOWN @ $51^{\circ}09.076$
 $138^{\circ}47.952$

-two breaks in data at 50m noticed (started again collecting on its own). Decided to restart cast as it was near the surface.

1915

-This will be recorded as R14-2.DAT

CTD going down at

1951

FISH BACK ON DECK - TURNS ON AND OFF BY ITSELF
NICK CHANGING CTD'S TO OTHER SYSTEM

2134

CTD onboard $51^{\circ}08.82$ $138^{\circ}48.21$

MAY 27TH, 1993

0020

Arrive @ R13

Back to the WOLF CTD

0028

Start cast, $51^{\circ}10.983$
 $138^{\circ}06.309$

The traces (bottom & reflection) on the recorder are very good & clear.
but there are some blanks.
Constant depth = 3682 m.

2500 m in comp = 2665 m on winch

0110

CTD at 3019.6, $51^{\circ}10.054$
 $138^{\circ}06.569$

3532 m on the winch

0206

CTD on deck, $51^{\circ}08.240$; $138^{\circ}07.117$

0210

Leave station R13

→

27 May 93

No stopper for the CTD pump.

0505 ARR. @ R12

0517 CTD GOING DOWN @ 51° 12.929
137° 23.230

* CTD WOULD NOT TURN ON AT FIRST - THEN FROZE UP
TWICE BEFORE CAST. FINALLY LOOKED OK, SO DOWN WE GO
- lots of spikes in display

0557 CTD TO 3007.4 @ 51° 12.865
137° 23.828

0652 CTD ON BOARD @ 51° 13.208
137° 25.600

0959 Stn R11 CTD to 3002.4, loop samples.

1042 * Depth 3002 51 14 92 136 40.59

1131 CTD onboard 51 15.21 136 40.59

1415 Arrive at R10

1423 Short CTD cast 51° 16.926 9.6510 - T° @ 4m
135° 57.565

1504 CTD @ 3006.2 51° 16.886
135° 57.528

1606 CTD ON DECK 51° 17.495
135° 57.486

5% & 0.2 bottles ready for Rosette on R9.

1900 ON STA R9

1915 CTD ROSSETTE GOING DOWN @ 51° 18.962
135° 15.134

2020 CAST TO 3002 @ 51° 19.220
135° 14.408

2230 IN 51 19.61 135 14.28. Bottle 23 did not trip

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		MONTH		TIME ZONE		SHIP		CRUISE		PAGE		OF	
93		5		UTC		Tully		9309		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
28	R9	3519	0200	51°19.007	49	0215	9		172	1106	9.715	48	ROSSETT CAST → 3002
				135°15.053					193	1131	32.381		
28	R8	3372	0808	51°21.215	50	0819	/	/	/	/	10.273	49	CTD cast to 3351.4
			1010	134°32.735							32.344		
28	R7	3175	1235	51°23.807	51	1250	/	/	/	/	10.493	50	CTD to 3124m 32m above bottom
			1454	133°49.527							32.333		
28	R6	2984	1720	51°25.57	52	1726	/	/			11.166	51	
				133°06.68							32.250		
28	J5	2765	2155	51°27.498	53	2205	10	2305	194	1106	11.642	52	Rosette cast to 2711 21 bottles
				132°23.745					214	1129	32.257		
29	J4	2559	0215	51°35.517	54	0224	/	/			11.602	53	CAST to 2561m 10m above bottom.
			0348	132°16.350							32.305		
29	J3	2330	0503	51°43.54	55	0506					11.877	54	2323 @ 05:39 51°43.59 131°49.93
			0620	131°50.02							32.083		
29	J2A	2035	0655	51°47.585	56	0702	/	/	/	/	12.048	55	CTD cast to 2027.7
			0810	131°40.720							32.097		
29	J2	2160	0853	51°51.753	57	0859	/	/	/	/	12.735	56	CTD cast to 2142.7
			1011	131°31.899							31.528		
29	J1A	1923	1103	51°56.201	58	1111	/	/	/	/	12.514	57	CTD cast to 1910m
			1208	131°22.932							31.491		
29	J1	600	1250	52°00.033	59	1254	/	/			12.616	58	CTD CAST → 562
			1313	131°14.100							31.512		
29	J0	80	1340	52°02.124	60	1342					60	59	CTD CAST → 72.5m
			1350	131°10.401							leg.		

— communications problem on upcast. Data would stop, then restart, usually on its own after periods from 10 seconds to one minute. Also, some bottle commands took up to 5 tries to actually send power to the CTD. ~~For~~ ~~about~~ ~~it~~ ~~problem~~

— bottle at 600m lost data communication during ^{2nd} 600m sample. This may have been the one which didn't trip — NOPE. That was 2800m.

MAY 28th

0108 Arrive @ R8

0119 Start CTD cast, 51° 21.190
134° 32.729

0200 CTD @ 3351.4, 51° 21.510
134° 32.352

0306 CTD on board, 51° 21.762
134° 29.857

0310 Leave station R8

0535 ARRIVE @ R7

0550 CTD in water @ 51° 23.807
133° 49.527

0634 CTD → 3124m @ 51° 23.572
133° 48.292

* NOTE - PROBE POWER TURNED OFF 3 or 4 TIMES BEFORE FISH WENT INTO WATER. WAS ABLE TO INDUCE SHUT-OFF BY JIGGLING BULKHEAD CO + TEMP CELL CONNECTORS. SEEMS OK NOW

0747 CTD ON BOARD → 51° 21.811
133° 47.597

1020 Sh R6 CTD and deep samples

2640 J6 system locked up. Reset OK

1105 at depth 2991 5125.63 133 07.10 5m above bottom

28 May

1157 Sh R CTD onboard 51° 25.744
133° 07.803

1200 Halibut drift pole spotted, ship going to recover it.

1212 Leave RG

1450 Arrive @ J5

1505 Rosette cast, depth = 2765
surface T°: 11.63
51° 27.416
132° 23.647

1605 CTD ROSETTE TO 2711 @ 51° 27.441
132° 23.612

* NOTE. BRAKE VALVE ON WINCH NOT HOLDING. WINCH CREEPING

* ROSETTE TRIGGER IF Y TRIGGERED NISH # 5 = UNSURE
" # 7 x 2 ✓
" # 8 x 3 ✓
ETC. - CHECK SHEET

ROSETTE ON DECK

(This was the extent
of communication problems
on this cast)

1915 ARR @ J4

1924 CTD CAST START @ 51° 35.597
132° 06.350

1957 CTD TO 2561 @ 51° 35.618
132° 06.510

2047 CTD onboard 51 35.68 132 06.94

2203 J3 CTD and deep sample
CTD 5m above bottom

2320 depart str 51 43.64 131 49.61

MAY 29th

St J2A

0002

Start CTD cast, $51^{\circ}47.585$
 $131^{\circ}40.714$

Had to try to START PROBE about 10
times before it worked. The CTD was at
surface. Also had to turn OFF-ON the
deck unit once.

0027

CTD @ 2027.7, $51^{\circ}47.754$
 $131^{\circ}41.236$

Probe stopped @ 1631.9
1628.5 m the probe.
Back to 1525 m.
Turned deck unit OFF-ON once

0105

CTD on board, $51^{\circ}48.442$
 $131^{\circ}41.911$

0110

Leave station

0153

Arrive @ J2

0159

Start CTD cast, $51^{\circ}51.753$
 $131^{\circ}31.899$

0227

CTD @ 2142.7 $51^{\circ}51.602$
 $131^{\circ}32.304$

Probe stopped at 1751.9m
Back at 1615.4 after 1 "OFF-ON"

Probe stopped at 701.0 m
Back at 687.3 after "OFF-ON"

0309

Lot of "noise" in pressure reading
CTD on board, $51^{\circ}51.322$
 $131^{\circ}33.051$

0311

Leave J2

MAY 29th

0411 Start CTD cast at J1A

51°56.219

131°22.999

0436 CTD CAST → 1910 m @ 51°56.477
131°23.743

0507 CTD ON BOARD @ 51°57.245
131°24.191

0553 ARR @ J1 @ 52°00.083
131°14.100

0555 START CAST

0602 CTD → 56Z @ 52°00.024
131°14.141

0612 CTD ON BOARD @ 51°59.794
131°14.158

0640 ARR STA. IO { 51°02.124
CAST TO 72.5 m { 131°10.401

0646 CTD ON BOARD