

CRUISE
NUMBER

97 13

DAILY LOG

INSTITUTE OF OCEAN SCIENCES
OCEAN PHYSICS

DATE

July 14 - 27, 1997

VESSEL

J.P. Tully

PROJECT

LA PEROUSE / Globec

A

Second Officer: Shame Third Officer: _____

Cruise Participants / Agencies: _____

Scientific Personnel: Party Chief: Rick Thomson

Name	Watch	Cabin	Name	Watch	Cabin
Susan Allen		G	Tom Suhasz		B
Isabelle Bravard		H	Ian Perry		Eng.
Steve Romaine		D			
Carine Vierendeimbo		H			
Beth Bernhard		F			
Joe Needham		E			
Shannon Harris		F			
Hugh MacLean		E			
Bernard Hinkley		C			
Dana Anderson		C			

Second leg of cruise: _____ Party Chief: _____

[illegible]

Data logging system: Unit no.: _____

Program Name: _____

Program version: _____

Program version:

serial no.:

1st CTD make: _____ model: _____ serial no.: 0437

serial no.: 0437

primer

10

150190

1830

100

1500

1

Comments:

July 14/97 1330 Ship arrives from
Monday Verenna Tunnelciffe Cruise with Rotas

UBC Scientists arrive @ 2000, overnight on
Ship.

July 15/97: Load IOS 0900 -

① DGPS: George Chane had initial problems getting
signal to computer. Phone call to rental agency
revealed that they thought the DGPS should be
output to Computer & Not the corrected position.
Once this was sorted and algorithm on Computer
fixed, OK. (~ 1900)

② Added wrong conductor cable to which
discovered this at 1600. Single instead of multiple.
Had to remove which and replace it with the
short (1950 m) multic conductor cable.

③ Benoulli disk missing and program not loaded
w/o SAIL. Phoned Frank Whitney at home at
2000. Partly a turf war problem between Hydrography
(Terry Cumband) and CCG.

July 16 0725 PDT. Test test Pachema Point
Foggy but sun is trying to break through.
A little bumpy. No wind. Swell from NW.

PAR sensor #4495

M 1.0

B 0.0

Cal const 540540540.5
multiplier 1.0

Numerous conversations with Frank Whitney
regarding the Benoulli Disk. Around noon July 16
decided to have disk flown to Lighthouse @ Estero
Point. Changed our plans to go to Brodes and instead
proceed to LG-1. Arrive 9415 PDT. Prepare for
cast. CTD/02; Harris phyto; Bongo tow.
SAMPLES @ 50, 30, 20, 10, 5.

SENSORS

24 Bottle Rosette

TRANS: = 192D

CTD: 0443 SEA BIRD 911

Fluorometer - Wet Labs (Yellow)

PAR Sensor: 4495 Irradiance Sensor

Seacon 0437 PAR

freq	0	Temp primary
freq	1	and primary
	2	pressure
	3	Temp secondary
	4	and secondary
vol	0	spare
	1	spare
	2	transmission
	3	spare
	4	irradiance
	5	irradiance
	6	irradiance
	7	irradiance

- Lost DGPS signal at Estevan Pt LGO1 time??
- regained DGPS position 0219 Jul.17 UTC
 - unit was on fixed freq, setting and we moved out of its range
 - unit was reset on Auto Search and signal from another beacon was received bringing back DGPS quality data.
 - while DGPS was off accuracy was 35-37m.

DGPS NOTE: TIME IS PDT NOT GMT - Only for towed CTD

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR 1997				MONTH July		SHIP Tully			CRUISE 9713				PAGE	OF
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
16	LG01	ROS			1	49.20.44	126 35.01	✓	55					CTD HAD PROBLEM 15'
16	LG01	ROS	2058		2	49.20.267	126 35.170	✓			1-5	5		2 trys
17	LG1A	CTD	0039		3	49 19.514	126 36.722	✓		77.8				PAR
17	LG1A	CTD	0044		4	49 19 67	126 36 83	✓						
17	LG02	ROS	0108		5	49 18 68	126 38 27	✓	105	100.9				PAR
17	LG02	ROS	0113		6	49 18 70	126 38 28	✓			6-12	7		
17	LG02	CTD	0150	DE	7	49 18 . 61	126 38 . 32	✓	105	100.1				PAR & TRANS. ok
17	LG02	CTD	0154	EN	8	49 18 . 61	126 38 . 29	✓						ok
17	LG2A	CTD	0227		9			✓	115	109.0				PAR no Trans
17	LG2A	CTD	0231		10			✓						
17	LG2A	CTD	0240		11	49 17 . 14	126 40 . 42	✓	115	105.5				PAR and Trans. ok
17	LG2A	CTD	0245		12	49 17 . 10	126 40 . 32	✓						ok
17	LG3	ROS	0336		13	49 14.88	126 43.57	✓	125	126.9	Bad data			PAR removed
17	LG3	ROS	0342		14	49 14.87	126 43.59	✓			13-21	9		Bad CTD data
17	LG3a	CTD	0557		15	49 13.38	126 46.21	✓	133	128.9				FROM GPS 49.13.42 FROM CLOCK 5:50
17	LG3a	CTD	0603		16			✓						126 46.174 6:00.
17	LG04	ROS	0639		17	49 11.23	126 49.35		143	139.1				49.11.21 6.40
17	LG04	ROS	0644		18	49 11.21	126 49.42	✓			22-30	9		

CAST TYPE -

BOT -
CTD -
MOR -

bottle cast
ctd
mooring

ROS -
NET -
DRF -

rosette
net haul
drifter

USW - sea water loop

TIME CODE -

BE -
BO -
EN -

beginning time of cast
bottom time of cast
end of cast

DE -
MR -
RE -

deployment time
messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
LOR -

RADAR
GLOBAL
LORAN

STATION LGØ1

Arrive at station @ 1430 PDT.
System would not operate. Checked fluorometer & fan sensors by removing load. Fan CTD still no luck. Switched to back-up DAS. Still not working. Brought in the spare CTD system. It worked on deck —

Removed "old" SeaBird and replaced it with the spare CTD. Decided not to plug in fluorometer but plugged in fan sensor. Could not get GPS to load into file! HAND RECORDED. Using Spare CTD + Spare DAS.

3 TRIES at LGØ1. #1 had problems with wire angle (ship turned!) #2. TS failed until near bottom. #3 OK. Hydro cast for DO₂, Nutrients, Phytoplankton & Ammonia.

Sunny / NW winds. Mod. Sea.

PROCEED: TO LG1A CTD only.

did LGØ2 no transmitter
repeated LGØ2 transmitter now OK 18.56.

TRANSMITTER DATA First recorded on 2ND cast @ LGØ2. When we switched computers we didn't get T-signal in correct channel. Bongo, O₂, nutrients @ LGØ2.

PROCEED TO LG2A CTD only

FIRST CAST DOWNLOAD used wrong config file and didn't get transmitter nor LAT/LONG

REPEATED CAST with correct config file —
OK - got LAT/LONG & T-signal

Proceed to LG3.

Removed irradiance probe

were trying to print labels through a network, salinity was too low.

seasave crashed.

had to deflower computer to get it to work.

ran cassette down, hit bottom at 185m

cast back up w/ bottles

did Rosebottle sampling & Perry sampling (see Table)

LG June July 16 -

SN	Corette	Harris Phyto	Perry Zoo	Bongo Romano
LGØ1	O ₂ /Nut	Phyto/NH ₄ Chloro.	NO	✓
LG1A	CTD only			
LGØ2	O ₂ /Nut	Phyto/	NO	✓
LG2A	CTD only			
LGØ3	O ₂ /Nut SAL	Chloro/NH ₄ Phyto NH ₄	✓	Bongo/Newton / oblique bongo ring

LG3A

LGØ4

LG4A

LGØ5

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR			MONTH			SHIP			CRUISE			PAGE		OF	
1997			July						9713						
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
17	LG4A	CTD	0746	OUT	19	49 11.12	126 49.42	✓	146						< 3 m above bottom
17	LG4A	CTD	0752		20	49 11.04	126 49.50	✓		141.2					
Proceed to station LG06. Skip LG05. Pick up on return.												No sounder depth. Blowing 25-30 knots			
17	LG06		0932		21	49 03.99	127 01.17	✓	?						Nw. Seas building
17	LG06		0953		22	49 03.35	127 01.48	✓		1002	31-49	19			no PAR
17	LG05		1329		23	49 07.03	126 55.90	✓		325					PAR NO *
17	LG05		1340		24	49 06.90	126 55.96	✓			50-72	23			NO *
✓ 17	LG03	ROS	1538		25	49 15.10	126 43.71	✓	122.5						15:27 PAR NO *
17	LG03	ROS	1541		26	49 15.15	126 43.76	✓		117	73-91	19			15:52 NO *
18	LM01	ROS	0449		27	50 12.52	127 57.64	✓	83						04:36. no PAR TRUE SURFACE
18	LM01	ROS	0452		28	50 12.43	127 57.63	✓			92-98				
18	LM1A	ROS	0530		29	50 10.93	128 00.71	✓	85						05:27
18	LM1A	ROS	0534		30	50 10.92	128 00.67	✓			99-105				05:39 NO COMPENSATOR
18	LM02	ROS	0608		31	50 09.04	128 03.79	✓	155						06:04
18	LM02	ROS	0613		32	50 09.01	128 03.85	✓			106-115				within 2m of bottom NO COMPENSATOR
18	LM03	ROS	0730		33				1130						06:21 data errors.
18	LM03	ROS	0753		34	50 05.21	128 10.32				116-132	17.			

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
net haul
drifter

USW -

sea water loop

TIME CODE -

BE -
BO -
EN -beginning time of cast
bottom time of cast
end of castDE -
MR -
RE -deployment time
messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

@ 1007 Zoelwark Tow.

- ① Sargo 100-0 m vertical
- ② Oblique 75-0
- ③ Neusten - 15 minutes/surface
- ④ Ring - 60-0 m.

@ LG3A

CTD → everything seems OK. ☺

wind is up so ship is having to use more power to stay on station - some problem with propwash.

~ 2345 PDT Station LG4 CTD/Rosette

CTD failed on upcast, producing 2 sets of bad data points, in addition to the usual (2-3) traces.

~ 0309 PDT. Ian, Rich, Tom, Bernard, Isabelle, Steve all catching July 4 flies with the constant yawning. Winds about 25-30 kts, but only 1.5-2.0 m waves.

@ LG3, 9 am, completed Rosette cast, no problems

9:15 PDT in from LG3, weather - wind 25 knots wave 3/5

at 8:00 PDT 1012.7, 15/12.7

NO RAIN

1020 PDT steaming toward Northa Lighthouse, from station LG3 (10 miles off).

Weather: Clear skies, winds NW 25 (@ 315° T)
Pressure Roland = 1017.6 mb
Observed = 1017.7 mb

THE BLOWN CTD STORY

Doug Velland phoned. According to Shannon's note, the WET LAB cable cannot be used with the fluorometer! Ecology had the same problem in the past - they blew the fluorometer & corrupted the computer program. CTD was OK. Need to use the same cables used for the transmitter. WET LAB CABLE PROBLEM == power & signal are reversed!!

TEST: CTD. [Damaged: we tested that using the spare DAS when the problem first developed]
Fluorometer: use 12 V Power Supply; output should be 0-5 V.

Approach

- ① Fix Damaged CTD
- ② Test Fluorometer
- ③ Use correct cable
- ④ Reattach PAR sensor

Par Sensor — OK to 1000 m
Fluorometer — OK to 3000 m.

1030 PDT Arrive Friendly Cove, weather
Sund. Clear, sunny & warm, out of the
wind.

1300 PDT Bernoulli disc delivered by Tamar
workboat from light station.

Depart for Line M, Mø 1. 8-10 hours
steaming.

SAIL SYSTEM

Installed 20 May Bernoulli disk into SAA computer
removed cell sh 93-4-2 and module 104. Replaced
with cell — and module 101.

Bruce Johnson 363-6416

SAIL data display incorrect but raw data logging is good.

LM01 - 10:00 PST

SWELL LOW - HAD ROSETTE RIGHT AT SURFACE
FIRST TIME COMPUTER COULD NOT ACCESS LAT/LONG
PUMP WENT BACK TO 10 - LOWERED ROSETTE SLIGHTLY
SECOND TIME COMPUTER GOT LAT/LONG
COULD NOT SEE DEPTH OF ROSETTE ON BACKSCATTER
WENT UNTIL TRANS. INC

LM1A 1030 PDT Flat enough we didn't
need heave compensator! 85m deep.

TOOKED BOTTOM - BUT NO MUD IN COND. SENSOR
NO PROBLEMS WITH COMPUTER
DEPTH SOUNDER NOT SEEING ROSETTE

LMø 2. 1300 PDT Still fairly calm. No heave
comp necessary. Clear evening but cold.
NO PROBLEMS WITH COMPUTER
DEPTH SOUNDER WORKING - WENT TO WITHIN
2M OF BOTTOM.

Proceed to LMø 3. Lost Mains. Took about
15 min to get back to Port Engineer (logged
to Har). Drifted to SE.

STATION LMø 3.

0030 PDT Station LM03 CT0/Rosette

Lowered data point on upcast

Calm clear, lovely morning

Revt to 0.

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR				MONTH		SHIP			CRUISE		PAGE		OF	
1997				July					9713					
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
18	LM04	ROS	0905		35	50 01.67	128 16.79							30 m to bottom
	LM04		0956		36	50 01.21	128 17.46				133-150	18		
18	LM05	CTD	1130		37	49 57.87	128 23.71		2000					10 m to bottom
	LM05		1246		38	49 58.25	128 24.17							
18	LBP07	ROS	14:05		39	49 52.37	128 11.01		2200					PAR on no
	LBP07		1451		40	49 52.69	128 10.66				151-170	20		no
18	LBP06	ROS	1613		41	49 56.13	128 05.38	✓	740					PAR OFF
	LBP06	ROS	1629		42	49 56.03	128 05.07	✓			171-188	18		10:00
18	LBP04	ROS	18.20		43	50 01.31	127 58.15	✓	1125					PAR ON NO
18	LBP4	ROS	1844		44	50 01.32	127 58.14	✓			189-212			NO
18														
18		Loop	1950			50 01.12	127 58.9							PAR OFF
18	LBP5	ROS	2132		45	50 00.00	128 00.14	✓	1284					PAR OFF
	LBP5	ROS	2159		46			✓			213-231	19		end 22:33
18	LBP3	ROS	2315		47	50 03.16	127 55.47	✓	172					PAR OFF
			2323		48	50 03.19	127 55.52	✓			232-240	9		18190
19	LBP2	ROS	0038		49	50 03.91	127 54.09	✓	98					
			0040		50	50 03.87	127 54.09	✓			241-248	8		

CAST TYPE -

BOT -
CTD -
MOR -

bottle cast
ctd
mooring

ROS -
NET -
DRF -

rosette
net haul
drifter

USW - sea water loop

TIME CODE -

BE -
BO -
EN -

beginning time of cast
bottom time of cast
end of cast

DE -
MR -
RE -

deployment time
messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
LOR -

RADAR
GLOBAL
LORAN

*

*

*

*

0205 PDT station LM04 50 01.70 N 128 16.85 W
CTD/Rosette ≈ 1906 m bottom

LM04 had wire angles of about 30° degrees near bottom of cast. Wind out = 2330 m @ 1900 m in CTD. Problems with wire angle near end of the cast.

LM05 no problem down to 2000 m

LBP07 bottom depth 2200 but Par sounder so only down to 1000 m

LBP06 PAROFF no problem, down to 430 m (shallower than expected)
PAR sensor back on

STN LBP4. For VSC incubation. Complete station (with Bongo cast) @ 1230.
SAW A HUMPBACK WHALE
CAST WENT WELL

STN LBP5: Still working on water cast. O₂ first
Romane 1 Penny start cast while we wait for ROSETTE
dual Vert. Bongo 250-0 m
Oblique dual Bongo 50-0 m
Newster surface tow

LBP5 CTD Cast PAR sounder off

LBP3 CTD/hydro. Sunny/ham.

LBP2: CTD/hydro. Bongo Oblique bongo and Newster tow (15 min).

1845: Having problems with Bongo but a winch is overshooting depth by about 150 ± several bongs h/t bottom and all bongs prior to LBP02 should be corrected by depth x 0.85. Bernard fixed winch counter - it was reading incorrectly.

1836 Loop Sounder sample 49 59.6 127 36.9

1950 @ LK01, DUSK, MISTY, MOUNTAINS ARE BEAUTIFUL
SEAS QUIET 6m

CAST WENT FINE - DEEPER, THAN LISTED DEPTH went to within 2 m of bottom.

1020 SEAS A LITTLE LARGER

10:30 @ LK03 ONLY CTD, IT'S DARK NOW
WENT TO WITHIN 1M OF BOTTOM.

11:15 @ LK03 - CAST WENT WELL "LAYER"
NEAR BOTTOM, PYNOCLINE @ 20M

REALLY LOVELY FULL MOON.
WIND IS UP (4-12 KNOTS), SEA BUILDING.

LK04 - WIND UP MORE 300° & 18 KNOTS
SEAS INCREASING
CAST WENT FINE WITHIN 1M OF BOTTOM

LK05 - CAST WENT FINE, CLEAR NIGHT, COOL

LK06 - CTD ONLY went to about 20m from
bottom, CAST WENT FINE

July 19, 8:45: Received call from Doug Y. regarding connector for
CTD - He is not currently in Victoria, but if
necessary, he will drive to TAS to get the part
needed. Doug Anderson - please give him a call
on the cellular at

744 9214*

LH09 - DOWN TO 2055 - touched bottom
LOVELY SUNNY DAY, SEAS LOW, WHITE CAPS

CAST UP - TURBID LAYER AT 1650m
ABOUT 20m THICK (MIGHT BE MUD OFF ROSETTE
FROM BOTTOM)
DEPTH SOUNDER DIDN'T SEE LAYER

CAST WENT FINE - NO MUD ON ROSETTE
WHEN IT CAME TO SURFACE

WIND 12-15 KNOTS FROM 310 DOWN
FROM 20 KNOTS THIS MORNING

LH04 DOWN TO 128 - AS WOULDN'T
GO DOWN FURTHER - THINK WE TOUCHED
UP & DOWN OK.

LOW TRANSMISSION - SURFACE 20M < 65
- AT ~ 35M ON WAY UP.
- LOWEST 20M

NICE EVENING LOW SEAS, WHITE CAPS.
DID O₂ & BONGO.

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR			MONTH			SHIP			CRUISE			PAGE		OF	
1997			July			Tully			9713						
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
19	LBP01	ROS	0215		51	5004.67	127 52.87	✓	58						
	LBP01		0219		52	5004.64	127 52.87	✓			249-253	5			
19	LK01	ROS	0439		53	49 55.50	127 18.82	✓	61	59				9:50	
	LK01	RUS	0502		54	49 55.53	127 18.85	✓		57	254-259	6		10:10.	
19	LK02	CTD	05:33		55	49 53.90	127 21.81	✓	67					10:30	
	LK02	CTD	05:37		56	49 53.90	127 21.78	✓			none				
19	LK03	ROS	06:21		57	49 50.53	127 27.65	✓	76					11:15	
	LK03	ROS	06:25		58	49 50.52	127 27.75	✓		74	260-265	6		11:30	
19	LK04	ROS	07:18		59	49 46.87	127 33.67	✓	125					12:10. wind 3000 @ 18 knots	
	LK04	ROS	07:21		60	49 46.87	127 33.68	✓		124	266-274	9		12:30	
19	LK05	ROS	08:18		61	49 43.30	127 39.65	✓	690					11:15	
	LK05	ROS	08:32		62	49 43.37	127 39.65	✓		682	275-292	18		2:00	
19	LK06	CTD	0945		63	49 39.58	127 45.78	✓	1080						
	LK06	CTD	1005		64	49 39.71	127 45.52	✓		1062	none			3:05	
19	LK07	ROS	1113		65	49 35.80	127 52.06	✓	1741						
		ROS	1149		66	49 35.85	127 52.04	✓			293-313	21		snl + 0.2	
19	LK08	CTD	1314		67	49 31.55	127 58.56	✓	2213						
			1416		68			✓			none				

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
net haul
drifter

USW -

sea water loop

TIME CODE -

BE -
BO -
EN -beginning time of cast
bottom time of cast
end of castDE -
MR -
RE -deployment time
messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

LH03

WENT DOWN TO 100M

COMPUTER MEMORY FULL - HAD TO
RESTART BEFORE UPCAST - CALLED FILE
9713DSP.SSAVEZ (DID ONE LAST NIGHT TOO)

LOVELY FULL MOON

FULL SELF-LOADING LOG CHIP GOING BY.

DID O₂

49 31.00 126.49.26 "FISH" ON DEPTH - SOUNDER
AT 50M

LH02

WENT DOWN TO 49M, THEN ANOTHER 1M
FOR BOTTLE -

SOME PROBLEMS WITH WIRE ANGLE &
30M BOTTLE WAS LOW (41.5m!)
DID O₂ & BONGO

LH01

WENT DOWN TO 30M, WIRE ANGLE FINE
DID O₂ & Phyto @ surface for Red Tide

July 22, 1997

1230 PDT LD14 CTD

Bottom hit or stirred by weight (depending on who you ask)
Styrofoam cups make journey to Jules Verne - 2600 m

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR			MONTH			SHIP			CRUISE			PAGE		OF	
1997			July						9713						
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
19	LH09	CTD	1734		69	49 05.62	127 28.85	✓	2085	2085				10:25	
19	LH09	CTD	1807		70	49 05.79	127 28.79	✓			none			11:10	
19	LH08	RUS	1920		71	49 09.73	127 22.66	✓	1910.						
	LH08	ROS	1957		72	49 09.660	127 22.551	✓	1914		314-334	21.		Bottle 14m above bottom 1900m	
19	LH08	Loop	1940			49 09.69	127 22.86		1911					Bongo	
19	LH07	CTD	2202		73	49 13.70	127 16.64	✓	1427					trans. lens cleaned.	
	LH07	loop	2204			49 13.70	127 16.59							loop sal. sample.	
	LH07	CTD	2223		74	49 13.71	127 16.81	✓		1433.				drift 22:2/8	
19	LH06	ROS	2330		75	49 17.56	127 10.52	✓	488						
	LH06	ROS	2358		76	49 17.63	127 10.75	✓			335-348	14.			
20	LH05	CTD	0201		77	49 21.32	127 04.70	✓	158						
	LH05	CTD			78			✓							
20	LH04	ROS	0258		79	49 25.03	126 58.84	✓	135	128				8:00 (492496) (1265881)	
	LH04	ROS	03:04		80	49 25.09	126 58.96	✓		122	349-356	8		8:15	
20	LH03	ROS	04:17		81	49 25.74	126 53.03	✓	102	100					
	LH03	ROS	04:22		82	49 25.73	126 52.92	✓		96.	357-363	7			
20	LH02	ROS	05:11		83	49 32.17	126 47.41	✓	55						
	LH02	ROS	05:13		84	49 32.21	126 47.42	✓		50	364-368	5.			

CAST TYPE -

BOT -

bottle cast

CTD -

ctd

MOR -

mooring

ROS -

rosette

NET -

net haul

DRF -

drifter

USW -

sea water loop

TIME CODE -

BE -

beginning time of cast

BO -

bottom time of cast

EN -

end of cast

DE -

deployment time

MR -

messenger release

RE -

recover mooring

POSITION CODE -

RAD -

RADAR

GPS -

GLOBAL

LOR -

LORAN

YEAR				MONTH		SHIP				CRUISE				PAGE	OF
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
20	LH01	ROS	0606		85	49 34.38	126 44.29	✓	34						
	LH01	ROS	0608		86			✓		30	369-372	4		Phytoplankton sample for Red Tide	
20	LE01	ROS	1109		87	49 06 90	126 01 09	✓	46						
	LE01	ROS	1112		88	49 06.99	126 01.16	✓		40	373-377	5		Phyto at the surface	
20	LE02	ROS	1149		89	49 04 28	126 04 63	✓	55						
		ROS	1151		90	49 04.34	126 04.76	✓		50	378-381	4		Chl a Bongo	
20	LE03	ROS	1301		91	49 00.45	126 10.84	✓	79						
		ROS	1308		92	49 00.48	126 11.00	✓		70	382-386	5			
20	LE04	ROS	1348		93	48 56.55	126 15.08	✓	117						
			1355		94	48 56.34	126 15.08	✓		100	387-392	6		bongo	
20	LE05	ROS	1518		95	48 52.87	126 20.42	✓	155					48 52.70 8:00 126 20.57	
		ROS	1523		96	48 52.95	126 20 35	✓		150	393-400	11		403 40	
20	LE06	ROS	1625		97	48 48 48	126 26 53	✓	209	209				48 48 50 9:20 126 26 53	
		ROS	1631		98	48 48 48	126 26 50	✓		208	404-413	10		HIT Bottom. O2 within 1m of bottom @ 208m	
20	LE06	ROS	1718		99	48 48 46	126 26 37	✓	212	210					
	LE06	ROS	1723		100	48 48 46	126 26 37	✓			414-416	3			
20	LE07	ROS	1816		101			✓	530	525				smab.	
	LE07	ROS	1827		102	48 44.25	126 32.24	✓		500	417-429	13		Seagulls, Porpoises	

CAST TYPE - BOT - bottle cast CTD - ctd MOR - mooring

ROS - rosette NET - net haul DRF - drifter

USW - sea water loop

TIME CODE - BE - beginning time of cast BO - bottom time of cast EN - end of cast

DE - deployment time MR - messenger release RE - recover mooring

POSITION CODE - RAD - RADAR GPS - GLOBAL LOR - LORAN

LE04 1350 h 20 July 97 Loop Salinity sample.

LE05 8:30 PDT CAST WENT OK. EXCEPT
EXTRA BOTTLES AT 79 + 55M.
LOVELY SUNNY DAY - WIND LIGHT - NO
WHITE CAPS
SURFACE LAYER "SOUPY"
WENT TO 150M OVER 150M

LE06 "FISH" ON DEPTH SOUNDOR 50M ABOVE
BOTTOM (ie @ 150M)

WARM TEMPERATURE LAYER AT ~100M.

MAJOR change in surface water clarity
and colour between LE05 and LE06,
LE06 much clearer, less gray.
WINDS LIGHT FROM NW, slightly overcast.

O₂ SAMPLES DROPPED - LUST

LE04 #2 - 75m
#3 - 50m
LE05 #1 - 150m
#4 - 79m
#9 20m
LE06 #2 - 150m
#3 - 125m

RETURNING TO LE06.

LE06. WENT DOWN TO 210M - DID 3 SAMPLES
WARM LAYER THERE - BETTER DEPTH ESTIMATE
- 75M

LE07 DOWN TO 525 OVER 530M DEPTH
SCATTERING LAYER AT: 250M
OBSERVED SEAGULLS & PORPOISES.

LE08 Calm, warm. To 1300+ m.
Turbidity layer again @ 200m depth.
Caprellas in turbid layer. About 50m thick.
Cbe exactly at 200m.

Bottom @ 1292m.
Touched bottom according
to TRANS.



DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR			MONTH		SHIP			CRUISE		PAGE		OF		
1997			July					9713						
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
20	LE08		1928		103	48 40.31	126 38.16	✓	1302		430-449	20		Borop Chlorophyll touched bottom
	LE08		1950		104	48 40.217	126 38.521	✓	1290					
20	LE09		2129		105	48 35.93	126 44.22	✓	1483					
	LE09		2158		106	48 35.76	126 44.49	✓		1548	450-469	20		
	LE09	loop	2133			48 35.92	126 44.28	✓						"Blue water"!
21	LC12	ROS	0055		107	48 14.99	126 40.2	✓	2200					
		ROS	0139		108	48 15.08	126 39.7	✓		2000	470-490	21		Dogfish off stern.
21	LC11	ROS	0408		109	48 18.65	126 26.82	✓	1475					
		ROS	0441		110	48 18.32	126 26.93	✓	124		491-511	21		
21	LC10	ROS	0612		111	48 22.38	126 20.16	✓	1240					No wind. Calm night.
		ROS	0637		112	48 22.46	126 20.00	✓			512-528	17		only 17 bottles closed
21	LC09	ROS	0910		113	48 26.08	126 13.82	✓	616					Cleaned Tlense prior to cast. (RM)
					114			✓			530-546	17		
21	LC08	ROS	1033		115	48 29.39	126 07.35	✓	203					
			1038		116			✓			547-558	12		
21	LC07	ROS	1153		117	48 32.96	126 0.74	✓	128					
			1202		118	48 32.93	126 0.82	✓		120	559-567	9		

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
net haul
dritter

USW -

sea water loop

TIME CODE -

BE -
BO -
EN -beginning time of cast
bottom time of cast
end of castDE -
MR -
RE -deployment time
messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

LE 09. Sounder 1483 m. Still warm & sunny. Only a hint of the turbidity layer at 200 m depth. Water still a little murky.

DRIFTING MATS OF BROWN-GREEN SEAWeed.

Loop Salinity sample collected LC11 (0535 21 July 97)

LC11 CAST WENT OK - WE DRIFTED SOUTH SO SPENT 10 MINUTES "LOOKING" FOR THE BOTTOM. DOWN TO 1771M

LC10 CALM NIGHT, NO WIND. 1235m.
A TRACE OF THE TURBIDITY LAYER IN TRANS
Signal @ 205m

DID 1st BOTTLE AT BOTTOM OF DOWN
CAST

We had only 17 bottles at end of cast but expected 18 (1 from permeant & 17 from upcast). Look Salinity samples for LC10! [Pump later that bottle at 1000m did not fire]

Anyone LC'dg. Penny Bangos first, Rorella to follow
Penny/Romane; Bango XZ; Oblique tow and Neusten (~1 hour). Start Neusten @ 0140
Overcast. Light misty rain. PdT

Start Rosette/CTD @ 0210 PdT.
Very calm/ Moon peeking through clouds.
Beth hanging in!

JUly 21/97

11245 PdT Surface Bucket sample for Red Tide, preserved in neutral Lugols.

48°54.60' 125°32.712
Off Nichiblet, Baulding Sound
Steve Romane.

Ashed Steve to preserve LC#1, LC#2, LC#3
Surfelle.

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR			MONTH		SHIP		CRUISE			PAGE		OF		
1997			July				9713							
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
21	LC06	ROS	12:49		119	49 36.40	125 54.00	✓	92					↑→
			12:52		120	49 36.41	125 54.03	✓		85	568-575	8		
21	LC05	ROS	14:00		121	48 40.09	125 47.56	✓	63					
			14:02		122	48 40.08	125 47.58	✓		50	576-580	5		
21	LC04	ROS	15:10		123	48 43.50	125 40.92	✓	164					
			15:14		124	48 43.55	125 41.00	✓		150	581-599	19		
21	LC03	ROS	17:20		125	48 46.92	125 34.31	✓	133	128				
			17:23		126	48 46.87	125 34.22	✓		125	600-607			
21	LC02	ROS	17:57		127	48 48.65	125 31.04	✓	107	107				11:00 on bottom at 107 m
			18:00		128	48 48.67	125 31.02	-		105	608-614			
21	LC01	ROS	18:32		129	48 50.45	125 27.67	✓	95	90				3 mab.
	LC01	ROS	18:36		130	48 50.46	125 27.68	✓		90	615-621	7		STOPPED @ 80 FOR BOAT
21	LD01	CTD	22:54		131	49 00.09	125 43.79	✓	32					PAR ON surface
	LD01		22:58		132			✓				1		phyto sample for J. Gower
21	LD02	ROS	23:28		133	48 58.41	125 47.07	✓	42					
	LD02		23:33		134			✓		30	622-625	4		
22	LD03	CTD	00:09		135	48 56.53	125 50.40	✓	43					Phyto sample @ 10 m
					136			✓				2		

CAST TYPE -

BOT -

bottle cast
ctd
mooring

ROS -

NET -
DRF -rosette
net haul
drifter

USW -

sea water loop

TIME CODE -

BE -

BO -
EN -beginning time of cast
bottom time of cast
end of cast

DE -

MR -
RE -deployment time
messenger release
recover mooring

POSITION CODE -

RAD -

GPS -
LOR -RADAR
GLOBAL
LORAN

LC06

Tripped

788

at surface

LC04

LOTS OF BIRDS SITTING ON WATER

STARTED RAINING AS WE WERE SAMPLING ON DECK.

SEAGULL ADDED HIS SAMPLE FROM TOP OF A-FRAME
VISIBILITY DOWN - FOG HORN GOING.

PERRY DID HIS SAMPLING HERE.

LC03

STILL RAINING

CAST WENT FINE

STOPPED RAINING BEFORE WE STARTED SAMPLING.

LC02

STILL A FEW BIRDS AROUND

VERY LITTLE WIND

VISIBILITY BETTER.

LC01

Stop midway through cast as launch was going over. Hydroekes on winch stop. Can't handle both. They could have waited 5 min for us to finish pick up Sta.

Took surface Phytoplankton sample & Uchuelet after talking with Jim & Gwen regarding the "Red Tide" Bloom.

Stu had lunch aboard. Took him $1\frac{1}{2}$ hr to drive up from Victoria to Uchuelet.

FAX FROM Mike Foreman - Still predictions IAN OFF -

Water very murky. Jim trying to break through.

WAIT FOR WORKBOAT to Return

Proceed to LD01 @ 1445 POT

Outbound LD Line, CTD only with bottles for USC stations.

YEAR		MONTH			SHIP			CRUISE			PAGE		OF	
97		JULY			TULLY			9713						
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
22	LD04	ROS	01:00		137	48 53.20	125 56.92	✓	63					
	LD04		01:04		138			✓		50	626-630	5		
22	LD05	CTD	01:58		139	48 49.46	126 03.85	✓	90					
	LD05		0201		140	48 49.43	126 03.90	✓						
22	LD06	CTD	02:35		141	48 46.10	126 10.24	✓	135					
	LD06		0246		142	48 46.10	126 10.26	✓						
22	LD07	ROS	03:36		143	48 42.48	126 16.87	✓	419	419			PAR	CTD to bottom.
	LD07		0346		144	48 42.49	126 16.68	✓		413	631-642	12.		NO OXYGEN, Nutrients for USC Monitoring
22	LD08	CTD	04:46		145	48 39.06	126 23.55	✓						no PAR
	LD08	CTD	0501		146	48 38.87	126 23.35	✓		785				
22	LD09	ROS	06:03		147	48 35.68	126 30.00	✓	1060					11:00 483502 1263002
	LD09	ROS	0620		148	48 35.82	126 29.92	✓		1050.	643-655	13.		10 mab
	LD12	CTD	0857		149	48 29.89	127 00.01	✓	2420					
		Loop	0859			48 29.90	127 00.00							
	LD12	CTD	0922		150	48 29.79	126 59.98							down @ 09:49
	LD13	CTD	1208	BE	151	48 19.81	127 30.01	✓	2597					
		Loop	1218			48 19.79	127 30.09							
	LD13	CTD	1237		152	48 19.58	127 29.98	EN						

CAST TYPE - BOT - bottle cast
CTD - ctd
MOR - mooring

ROS - rosette
NET - net haul
DRF - drifter

USW - sea water loop

TIME CODE - BE - beginning time of cast
BO - bottom time of cast
EN - end of cast

DE - deployment time
MR - messenger release
RE - recover mooring

POSITION CODE - RAD -
GPS -
LOR -

RADAR
GLOBAL
LORAN

0745 PDT Proceeding to LD14. Sunny, light wind.
Partly overcast. Shortened casts to 1500 m to
save time.

STN LD14. Vellula Vellula (a few) and
patches of Goose-neck barnacles on the
region Blue water.
Steve Roman's surface sample.

Steve Roman threw a bucket over the
side (and it didn't come back!!)

Sample #029 - dead vellula (no live ones caught),
plus sample of small (1-2 mm) copepods. Copepods
very dense at surface.

Bottle samples: 50, 30, 20, 10, 0 m chl and nutrients.

Goose-neck barnacles everywhere.

LD15 The foam and cast. Bag of foam
caps attached for compression tests.

1545 PDT

- on station ERVent. depth 2178m, 2176 m
- range 4163, 1068, 5132, 7547
- no consistent ranges - declutched.
- range 1984 - still no reliable ranges.
- trying dunking transducer.
- range 8452, 4723, 3849 } inconsistent ranges *
* 2852
- checked position - ship was app. 6 cable off station
- moved on top of position as per mooring log.

- at position acc. mooring log. - depth 2091
- disc @ #2 8571
- disc @ #3 - 1298, 1487, 1591
- range 2627, 396, 2899, 95, 230
- @ #4 - range 169, 400, 108
- switched back to hull transducer - declutched.
- received no good ranges thru disc settings
2-4

- back to dunking transducer ranges 400 4487
852, 1214

- disc setting #1 too soon
- #2 - #4 inconsistent ranges
- #5 no range

1630

- app. 1 1/2 - 2 cable to SSE
- sending B534 range 2067
Received + Executed
range 1736, 225
- sent B534 3 x
- ranges B533 2964, 2614,

1637 - continue sending B534 and listening with VHF DF on ship + hand held unit.
- sent multiple release commands each show received + executed - associated ranges all inconsistent

- 1182, 722, 2362, 7086
702, 963

1657 - sighted on surface on station
- VHF signal not received by ship's DF + only very intermittently received by hand held DF.

ER971 - Sea Bird ^{Rosetta} CTD @ Main Tent

Site. 47-56.634 129 05, 946

2178 m.

Deep trans values around 90.70 / 90.72 / 90.67

Very steady 1800m →

1700 - 90.74 / 90.72 / 90.77

- 1800

Slow wunch @ 1810 m.

Hit plume @ 1895 m.

Ship drift to SE, NW winds.

@ 2040 m. 150 m to go on sounder.

Out of plume near 2100 m.

Stop @ 2220 m - out of plume

Weak plume on upcast - drifted too far to NE

Hit plume @ 1961 m on upcast.
Gone by 1880 m!

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR 97			MONTH July			SHIP Tully			CRUISE 97 13				PAGE OF	
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
22	LD14	ROS	1524		153	48 11.93	128 00 01	✓	2590	1500				8:20
		ROS	15:55		154	48 11.90	127 59 45	✓			656-660	5		9:25
22	LD15	CTD	18:50	8E	155	48 06.04	128 30.08	✓	2580.					
	LD15	CTD	1931	80	156	48 05.93	128 30.39							Ignal @ 20'07
22	ER WASP STATION MAIN VENT SITE. Difficulty ranging. Ocean releases. Popped @ 1630. PDT Crew went for Dinner. Backed onto mooring. Recovered by 1800 ⁰ PDT. CM + WASP.													
23	ER971	CTD	01:35		157	47 56.48	129 05.96	✓	2100					Hot vent site.
			02:26		158	47 56 71	129 05.68							
23	ER971	ADCP	06:12		E97B	47 56 49	129 05 99							
23	LA10	ROS	20:56		159	47°59.08	125°43.45	✓	920				PAR	
	LA10		23:37		160	47 59.070	125 43.428	✓	72	900	661-678	18		"CARINE TRANSITION"
24	LA09	ROS	00:15		161	48°02.27	125°36.88	✓	350				PAR	New Bold Woman
	LA09	ROS	01:30		162			✓	340	679-691	13			Bottle not fired @ 20m
24	LA08	ROS	01:29		163	48°05.75	125°30.43	✓	142				PAR	
	LA08				164			✓			692-699	8		
24	LA07	CTD	02:25		165	48°09.16	125°23.96	✓	115					
	LA07				166									

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
net haul
drifter

USW - sea water loop

TIME CODE -

BE -
BO -
EN -beginning time of cast
bottom time of cast
end of castDE -
MR -
RE -deployment time
messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

1115 PBT July 22

Quiet night, light winds
Finally got system working. Crossed wires
in signal pair.

CAST # E97B — (E97A = garbage)

DGPS Working? —

SWATH SAID ~~HE~~ COULD DREIF TO SW.

Heading started at 180° ; @ 800 m it is
 360° .

Amount of wire on winch (max depth
out) = 1878 m

TRANSDUCER OUTPUT: MAX=1, 3, 2, 4 MIN

E97C UPCAST ENVS # 123

START NEW CAST, Down to $\frac{1}{2}$ wrap
on winch

Slow up cast — Tim & Bernard added winch
counter and tried to fix by on drum.

System error @ 925 m. Restart system
with new file on upcast

~~Assume~~ that transducer #2 has lost
stringth. Transducers #2 & 4 are weak.

Onboard @ 1255 PBT July 23

Proceed to station at 147 55.96 129 09.84
2355 m depth.

0130 PBT E97C

DOWNCAST: Susan says "IFS very dark
outside". 47 55.977, 129 09.926 J

Stop winch @ 939 m. System overflow error
Came on again at 1000 m.

DOWNCAST: PAKET 1 0 — 938m
PAKET 2 1000 —

@ 1300 m: SALINITY too high 35.5
Temp too cold 1.6°C

Another B/O Error @ 750m
Restart Cast E97D upcast.
another ~~#~~ Error @ 730m
overflow

Re Start at 715 m.

Temp & Salinity malfunctioning.

Again! 585m restart upcast

Pressure said ^{minus} -11m when deck said it
was ~~at~~ at the surface.

July 23/97: The Vellela files

LD14, 15 and Endeavour Ridge sites → all dead Vellela, but
high density goose-neck barnacles attached to succreted(?) fronts.
10:30, 47° 59.3'N / 127° 04.7'W → several live Vellela in
water, moderate density, mostly large specimens (10+cm
diameters), No goose-necks seen.

13:45 A couple of blue sharks sighted "drifting" below and
around Macrogytis / Neocyttus tangles. One about 2m,
other 1.6 m long.

STATION LA10 1600

Sunny, warm, light NW wind
we all commented on the too warm water
colouration and dark patches, resembling the
tropics and coral regions. At first we
thought this was cloud but Dr. Bernard
indicated it was not clouds. Appears to be
mixing surface water mass regions.
Birds, fish boat in vicinity. Went to the
bridge and convinced myself it is cloud.
Can tell by looking at breaking waves. They
are darker in dark patches.

ADCP seeing deeper. Now to 250m

LA09 Bottle not fired at 20m

2.5m to LA06. LOTS OF FISH ON DEPTH
SANDER, 50m ABOVE THE BOTTOM.

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		MONTH		SHIP		CRUISE		PAGE		OF				
1997		July				9713								
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE CNV	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
24	LA06	ROS	3:13		167	48 12 57	125 17 32	✓	112	102				
			3:17		168	48 12 48	125 17 32	✓		100	700-706	7		
24	LA05	CTD	4:07		169	48 16 04	125 10 62	✓	120	111				
		CTD	4:11		170	48 16 00	125 10 68			111				
24	LA04	ROS	4:54		171	48 19 35	125 04 07	✓	191	187				very close < 1m off bottom
		ROS	4:59		172	48 19 37	125 04 02	✓		183	707-716	10		
24	LA03	CTD	5:52		173	48 22 85	124 57 87	✓	110	108				{ Probably touched bottom
		CTD	5:56		174	48 22 85	124 57 90			108				
24	LA02	ROS	6:51		175	48 26 34	124 51 58	✓	302	291				
		ROS	6:58		176	48 26 39	124 51 68	✓		291	717-729	13		
24	LA01	ROS	08:15		177	48 29.469	124 44.88	✓	264					loop sample 00821
	LA01	ROS	08:22		178	48 29.55	124 45.04	✓			730-741	12		
24	LB01	ROS	10:07	BE	181	48 40.31	124 59.64	✓	37					
	LB01		10:09	BO	182	48 40.35	124 59.60	✓		30	742-745	4		
24	LB02		10:39	BF	183			✓	60					
	LB02	ROS	10:42	BO	184	48 38.94	125 02.58	✓		50	746-750	5		

CAST TYPE -

BOT -

bottle cast

CTD -

ctd mooring

MOR -

ROS -

rosette

NET -

net haul

DRF -

drifter

USW -

sea water loop

TIME CODE -

BE -

beginning time of cast

BO -

bottom time of cast

EN -

end of cast

DE -

deployment time

MR -

messenger release

RE -

recover mooring

POSITION CODE -

RAD -

RADAR

GPS -

GLOBAL

LOR -

LORAN

LA06 CTD A Rosette to 102M.
Still bright & sunny.
Wind & seas light.

LA04 Interesting salty/cold/clear layer
40mab.

AFTER LA02 CAST, OUT OF MEMORY
SAVED TO 9713.DSP.SS.AVE3

LB16 Wind 310° @ 15 knots. 75
Isothermal or reversed temp layer @ ~~~50~~ 75m
(in permanent pycnocline)
SUNNY WITH 40% cloud cover
WATER CARIBBEAN TURQUOISE IN SUNNY
AREAS (BUT NOT AS STRONG AS
YESTERDAY)

INTERESTING TRANSMISSIOMETER "LOW" near 850m
depth on both up & down cast.

LB15 Reverse temp layer @ 75m
Low transmission layer @ 500m (and on up)
CLOUD COVER GONE, SKY BLUE,
WIND STRONGER

LB14 WIND 310° @ 20 knots.
MUCH STRUCTURE IN TRANS.

LB08 SEAS ARE UP - HARDER TO
GET EXACT DEPTHS - AND SURFACE
SAMPLE IS DEEPER
GULLS SITTING ON WATER

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		MONTH		SHIP		CRUISE		PAGE		OF				
1997		July				9713								
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
24	LB06 C1	ROS	1215	BE	185	48°29.30	125°15.34	✓	150					Depart 12:32
		ROS	1222	BO	186	48 29.21	125 15.38	✓		140	751-770	20		Incubation Station
24	LB16	ROS	1811	BE	187	48 00.490	126 17.085	✓	1805	1800				Took PAR off. 10 m ab
			1839	BO	188	48 00.48	126 17.08	✓			771-794	24.		
24	LB15	ROS	2029	BE	189	48 04.323	126 08.544	✓		1552				
	LB15	ROS	2052	BO	190	48 04.29	126 08.62	✓			795-798	4		
24	LB14	ROS	2210	BE	191	48 08.43	126 00.02	✓	1190				PAR	VERY CLOSE TO BOTTOM
	LB14	ROS	2232	BO	192	48 08.42	126 00.08	✓			799-817	19		Depart @ 23:00
24	LB12	ROS	2347	BE	193	48 12.86	125 51.84	✓	510				PAR	
	LB12	ROS	2356	BO	194	48 12.75	125 51.85	✓		500	818-832	15		
25	LB10	ROS	0115	BE	195	48 18.54	125 41.48	✓	155				PAR	
	LB10	ROS	0121	BO	196	48 18.49	125 41.48	✓		149	833-841	9		
25	LB09	ROS	02:20	BE	197	48 21.95	125 34.83	✓	150				PAR	
	LB09	ROS	02:21	BO	198	48 21.76	125 34.84	✓		140	842-849	8		
25	LB08	ROS	0315		199	48 25.17	125 28.76	✓	145					
	LB08	ROS	0318		200	48 25.10	125 28.75	✓		135	850-857	8		Wind @ 28° @ 15 Gusty 20
END Globec/LAP LOSTAL GRID														

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
net haul
drifter

USW - sea water loop

TIME CODE -

BE -
BO -
EN -beginning time of cast
bottom time of cast
end of castDE -
MR -
RE -deployment time
messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

BCF1

Clear layer @ 115m
OR ACTUALLY TURBID LAYER @ 100-110

BCF2

Reversed temp layer @ 80m
Occasional swell to big enough
to cause problems

WIND

300° 20 knots

BCF3

WIND

310° 22 knots

TOO BIG SEAS TO SAFELY RECOVER ROSETTE.
CHANGE OF PLANS - TRY BONGOS.

BCD2

~~BCD1~~ - ~ 8:30 FRIDAY CHANGED TO A
BRIDLE FOR CTD - SEAS BETTER
THAN LAST NIGHT, BUT MUCH EASIER
THAN ROSETTE

BCA3

- HIT BOTTOM - WINCH LOST RADIO
CONTACT - DRAGGED ON BOTTOM
SALINITY SENSOR GIVING FLOOR
VALUES ON WAY UP.

↳ OTHER PROBLEMS - WEAK PINGER SIGNAL
WENT TOO CLOSE TO

BOTTOM
HYDRAULICS WERE LOWERED

BARKLEY CANYON

13°d 33‰

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR			MONTH			SHIP			CRUISE			PAGE		OF	
1997			July						9713						
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
25	BCE1	CTD	0446	BE	201	48 22.25	125 43.04	✓	144	137					
		CTD	0451		202	48 22.12	125 43.08				nil	0			
25	BCE2	CTD	0526	BE	203	48 19.71	125 46.89	✓	163	158					
		CTD	0532		204	48 19.71	125 46.93				nil	0			
25	BCE4	CTD	0609		205	48 16.73	125 51.08	✓	370	360					
		CTD	0617		206	48 16.71	125 51.16				nil	0			
	BCD4					BONGOS AT 50M & 250M					- MOON OUT, BLOWING 30 knots				
	BCC3					BONGOS AT 50M & 250M					- MOON OUT, " " "				
	BCD2					BONGOS AT 50M & 130M-140M					- WIND DROPPING (COUNTER NOT WORKING)				
25	BCD2					BONGOS AT 50M & 145M					- STILL WAVY OVERCAST				
25	BCD2	CTD	1538	BE	207	48 22.26	125 50.34	✓			- USING CTD ONLY - NOT USING ROSETTE				
		CTD	1543	BO	208				150	135					
	BCC1	CTD	1623	BE	209	48 25.79	125 50.68	✓			- TURBID LAYER 20M OFF BOTTOM				
		CTD	1628	BO	210				140	135	- PINGER TOUCHED				
	BCA1	CTD	1744	BE	211	48 30.09	125 00.09	✓							
		CTD	1749	BO	212				143	132					
	BCA3	CTD	1833	BE	213	48 27.90	126 04.81	✓	198	195	310° 15-20 knots GUSTS TO 22				
			1839	BO	214						HIT BOTTOM - SALINITY OFF.				

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
net haul
drifter

USW - sea water loop

TIME CODE -

BE -
BO -
EN -beginning time of cast
bottom time of cast
end of castDE -
MR -
RE -deployment time
messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

BCCH: hit bottom with unit. Pinger sensitivity too low. No pinger signal. Need to repair pinger or battery?

Problem might have been more obvious if I had the correct vertical scale for the plot. Water depth was 770 m but scale was 0-800 m.

BCCB

HIT JELLYFISH - PROBABLY EXPLAINS SPIKES @ 175m
5 IN TRANS.

BOTTLE 16, BOTTOM DIDN'T CLOSE,
SAMPLE LOST

BCB2

LOW TRANS @ 110m.

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR			MONTH			SHIP			CRUISE			PAGE		OF		
1997			July						9713							
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS		
25	BCA4	CTD	1927		215	48 25.17	126 10.04	✓	365	357						
			1936		216											
25	BCB4	CTD	2023	BE	217	48 22.72	126 04.34	✓	333	325				top sample @ 20:24		
	BCB4		2031	BO	218									BONGOS { 50m CTD only. { 250m 15kts @ 310 °T		
25	BCC4	CTD	2148		219	48 20.53	125 57.26	✓	772							
					220											
25	BCD4	CTD	2250		221	48 18.70 N	125 55.10 W	✓	320	315				300°T, 14 kts		
			2302		222									BONGOS 50+250		
26	BCC3	ROS	0015		223	48 22.53	125 56.31	✓	630					nutrients, incubation		
	BCC3	ROS	0030		224	48 22.56	125 56.35	✓✓	600	858-878	21			BONGOS 50+250		
						JELLYFISH ← MANY SPIKES IN TRAPS @ 175										
26	BCB2	CTD	01:49	BE	225	48 25.96	125 55.93	✓	175	165						
	BCB2	CTD			226									nil		
						BONGOS, 50m to SURFACE & 170m to SURFACE										
26	BCC2	ROS	02:45		227	48° 24.37	125° 53.61	✓	172	165						
	BCC2	ROS	0250		228	48 24 38	125 53.65	✓✓	166	879-888	10			bottle #2 failed to trip		
26	BCD3	ROS	0334		229	48 20.16	125 53.55	✓	365							
		ROS	0343		230	48 20.17	125 53.53	✓✓			889-902	14				

CAST TYPE - BOT - bottle cast
CTD - ctd
MOR - mooring

ROS - rosette
NET - net haul
DRF - drifter

USW - sea water loop

TIME CODE - BE - beginning time of cast
BO - bottom time of cast
EN - end of cast

DE - deployment time
MR - messenger release
RE - recover mooring

POSITION CODE - RAD - RADAR
GPS - GLOBAL
LOR - LORAN

BCC2: Bottle #2 failed to trip. This has been a problem all trip. Seems that it fails if the top lid is not fully extended. If it sits on the lower lip, the bottle sticks.

TOW-YO 0645 PDT July 26

Tow #1

② 3 knots wire angle is 30°

TIME UTC	WIRE OUT m	DEPTH SENSOR	WIRE ANGLE
13:54	52	52 (51)	20°
13:55	125	120 (28)	25°
13:57	166	152 (41)	30°
13:58	240	212 (47)	40°
13:59	302	252 (50)	45°
14:01	362	303 (50)	40°

END OF SECOND DOWN - WITHIN 20M OF BOTTOM.

14:07	378	300	- Ship speed 2.2 knots.
14:09	277	200	- With this weight 3 knots was too fast.
14:11	166	116	- fast.
14:15	40	40	Top
14:16	113	104	
14:19	240	200	42°
14:22	394	303	BRIDGE Z = 565 m
14:24	530	400	BRIDGE Z = 560
14:27	650	500	
14:28	700	530	Bottom. No pinger signal
14:30	576	395	
14:32	461	300	

INSTITUTE OF OCEAN SCIENCES

[illegible]

Tow #1 UTC	Cont'd wire w/mch	Depth (P)	
1435	323	200	—
1437	141	100	$z = 597 \text{ m}$ bridge
1440	10	9	—
1442	114	102	—
1444	249	203	$\angle = 40^\circ$
1446	—	250	$\angle = 45^\circ$
1447	378	300	$z = 701 \text{ m}$ $\angle = 50^\circ$
1450	530	401	Added ship to show a bit.
1452	639	500	$\angle = 45^\circ$
1454	724	607	($z = 771 \text{ m}$) bridge 25 m above bottom bottom cast $P = 684$
1458	658	598	$\angle = 35^\circ$
1458	—	565	$\angle = 30^\circ$
1500	526	494	—
1501	409	370	$\angle = 35^\circ$
1503	343	296	—
1504	250	202	$\angle = 35^\circ$
1506	150	116	$\angle = 45^\circ$
1507	75	64	$\angle = 30^\circ$
1509	3.5	10	$\angle = 20^\circ$
1510	—	—	$\angle = 35^\circ$
1511	118	100	$\angle = 40^\circ$
1513	260	180	
1515	300	270	$z = 791$
1517	400	370	
1519	500	480	$\angle = 25^\circ$

CTD'S (SAT)

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		97.		MONTH		July		SHIP		TULLY		CRUISE		9713		PAGE		OF	
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS					
26	BCD4	CTD	2031	BE	237	48 18.71	125 54.67	✓	299.										
			2038	BO	238	48 18.75	125 54.69									depart 20:45			
26	BCC4	CTD	2116	BE	239	48 20.59	125 59.28	✓	771.										
			2131	BO	240	48 20.59	125 59.20									depart 21:47			
26	BCB4	CTD	2221	BE	241	48 22.79	126 04.41	✓	330										
			2228	BO	242	48 22 83	126 04.36			321.									
26	BCD4	CTD	2326	BE	243	48 18.66	125 54.97	✓	303										
			2330	BO	244	48 18.69	125 54.96			295									
27	BCC4	CTD	0010	BE	245	48 20.52	125 59.23	✓	774	760						PINGER NOT WORKING? NO SIGNAL!			
		CTD	0022	BO	246	48 20.30	125 59.33			760									
27	BCB4	CTD	0112	BE	247	48 22.68	126 04.39	✓	339										
		CTD	0120	BO	248	48 22.65	126 04.39			335									
27	BCD4	CTD	0217	BE	249	48 18.69	125 54.95	✓	301	292									
			0223	BO	250	48 18.63	125 54.92												
	C3																		
	C2	BOWGOS																	

CAST TYPE -

BOT - bottle cast

CTD - ctd

MOR - mooring

ROS - rosette

NET - net haul

DRF - drifter

USW - sea water loop

TIME CODE -

BE - beginning time of cast

BO - bottom time of cast

EN - end of cast

DE - deployment time

MR - messenger release

RE - recover mooring

POSITION CODE -

RAD - RADAR

GPS - GLOBAL

LOR - LORAN

UTC	Wire out	Depth	
15:21	600	580	$\angle = 20^\circ$
15:23	700	688	$\angle = 20^\circ$
20m above BOTTOM (pinger)			
15:26	-	739	P=768 $\angle = 20^\circ$
15:27	700	686	
15:28	600	580	
15:29	-	539	$\angle = 30^\circ$
15:30	500	461	
15:31	-	372	40°
15:32	400	343	-
15:33	300	241	Z=771 bridge
15:35	200	161	$\angle = 40^\circ (148-P)$
15:37	100	88	
15:38	3	98	$\angle = 15^\circ$
15:40	115	112	$\angle = 25^\circ$
15:42	200	183	Z=755 bridge
15:44	300	267	
15:46	400	350	
15:48	500	448	
15:50	600	552	Z=645
15:51		591	$\angle = 35^\circ$
15:52	700	605	
2m above BOTTOM			
15:54	740	678	P=706 $\angle = 35^\circ$
15:55	685	620	-
15:57	600	536	

UTC	Wire out	Depth	
15:58	500	437	
15:59	-	382	Z=631 bridge
16:00	400	345	
16:01	300	263	
16:03	200	173	
16:04	100	89	
16:06	SURFACE : WEIGHTS ADDED		
NEW FILE 97130234			
16:26		21	Z=623 (bridge)
16:28	100	101	3 knots
16:29	200	183	$\angle = 35^\circ$
16:31	300	239	
16:33	400	284	Z=723
16:35	550	402	
16:37	-	461	$\angle = 50^\circ$
16:39	720	543	$\angle = 50^\circ$
16:41	800	587	Z=645
16:43	900	654	$\angle = 50^\circ$
16:44	914	660	25 m above bot
16:46	800	537	$\angle = 47.48^\circ$
16:48	700	463	$\angle = 45^\circ$
16:49	600	386	$\angle = 50^\circ$
16:51	500	293	$\angle = 55^\circ$
16:52	400	213	
16:54	300	152	
16:56	150	90	Z=478 $\angle = 50^\circ$

UTC	Wire out	Depth
16:57	100	63
16:58	7	10
17:00	100	96
17:02	200	174
17:04	300	256
17:06	400	325
17:09	545	462
17:13	420	340
17:15	300	243
17:16	200	162
17:18	100	82
17:20	8	10
17:22	130	124
17:24	242	229
17:26	350	322
17:28	445	393
17:31	350	295
17:33	250	190
17:36	150	127
17:38	50	48
17:50	120	114
17:52	200	182
17:53	300	268
17:56	450	382
18:02	-	410

$Z = 481$
 $\angle = 40^\circ$

$\angle = 40-47^\circ$

$Z = 430 (262-P)$

$\angle = 15^\circ$

$Z = 410$
 $\angle = 25^\circ$

$\angle = 40^\circ$

$\angle = 30^\circ$

$Z = 402 (P=166)$

$Z = 418$
 $\angle = 45^\circ$

50°

UTC	Wire out	Depth	
18:04	—	408	$\angle = 50^\circ$
18:05	530	368	
18:07	450	304	
18:09	350	234	
18:11	250	180	$Z = 465$
18:13	150	118	$\angle = 50^\circ$
18:15	50	44	
18:17	8	10	
18:19	100	97	
18:21	200	182	$Z = 473$
18:25	380	307	$\angle = 40^\circ$
18:26	450	346	
18:28	550	396	
18:31	650	445	
18:32	50M above bottom	bottom	$\angle = 55^\circ$
18:33	600	337	
18:34	500	261	
18:36	400	202	
18:37	300	147	$\angle = 55^\circ$
18:39	200	116	
18:40	100	66	40°
18:43	125	114	$\angle = 30^\circ$
18:44	200	175	$Z = 611$
18:46	300	256	35°
18:49	500	391	45°
18:50	600	452	140 off bottom

UTC	wire out	depth	
18:51	700	504	55°
18:53	800	556	
18:54	864.2	575	bottom 55°
18:56	725	401	
18:58	600	302	55°
18:59	500	243	
19:00	400	193	
19:02	300	169	
19:03	200	107	50°
19:04	100	61	
19:06	7.7	10	Z = 790
19:08	100	94	
19:09	200	176	40°
19:11	300	253	
19:12	400	328	Z = 690
19:14	500	399	
19:15	600	467	210 m above bott
19:17	700	527	
19:19	800	590	
19:21	845	574	Z = 713 55°
19:27	1000	602	Z = 630 m 55°
19:29	1095	650	<u>Bottom</u> ~ 80 m AB
19:31	1000	515	
19:33	900	430	< 50°
19:34	800	367	
19:36	700	313	

Time UTC	Wire out m	Pressure P
19137	600	263
19140	500	221
19148	400	180
19141	300	143
19143	200	107
19144	100	64
19145	7	10
19148	100	93
19149	200	173
19151	300	240
19152	400	301
19154	500	365
19156	600	422
19158	670	447
19159	600	355
20000	500	267
20001	400	205
20002	300	150
20003	200	105
20004	100	60

Top, $Z = 548\text{m}$

$Z = 495\text{m}$

$Z = 460\text{m}$

10m from bottom

$Z = 456\text{m}$

$Z = 410\text{m}$