

CRUISE
NUMBER

9638

DAILY LOG
INSTITUTE OF OCEAN SCIENCES
OCEAN PHYSICS

DATE

Oct. 1 - 11, 1996

VESSEL

J. P. Tully.

PROJECT

La Perouse / JGOFS /
CRD

Captain: B. Pennel First Officer: George
Second Officer: Patty Third Officer: Bruce
Cruise Participants / Agencies: O.S.A.P. Div. I.O.S.
Scientific Personnel: Party Chief: Ken Deuman

Name	Watch	Cabin	Name	Watch	Cabin
<u>Linda White</u>		<u>G</u>			<u>A</u>
<u>Angelica Pena</u>		<u>H</u>			
<u>John Love</u>		<u>#5</u>			
<u>Rod Forbes</u>		<u>F</u>			
<u>Bernard Minkley</u>		<u>#7</u>			
<u>Doug Anderson</u>		<u>D</u>			
<u>Tom Lubasz</u>		<u>E</u>			

Second leg of cruise: Party Chief: Tom Lubasz

Name	Watch	Cabin	Name	Watch	Cabin
<u>John Love</u>		<u>#5</u>			<u>E</u>
<u>Doug Moore</u>		<u>G</u>			
<u>Dave Spear</u>		<u>F</u>			
<u>Doug Anderson</u>		<u>D</u>			
<u>Bernard Minkley</u>		<u>#7</u>			
<u>Victor Nelson</u>		<u>H</u>			

Data logging system: Unit no.: _____
Program Name: Seasoft Program version: 4.219
CTD deck unit make: _____ model: _____ serial no.: _____
Computer make: _____ model: _____ serial no.: _____

1st CTD make: Seabird model: 11+ serial no.: 0437
Temperature sensor model: _____ serial no.: _____
coefficients: slope: _____ offset: _____
Conductivity sensor model: _____ serial no.: _____
coefficients: slope: _____ offset: _____
Pressure sensor range: 0-6000 psi serial no.: _____
coefficients: FSP: _____ dB offset: _____
Transmissometer model: 25cm serial no.: #254
coefficients: slope: _____ offset: _____

Comments: _____

2nd CTD make: _____ model: _____ serial no.: _____
Temperature sensor model: _____ serial no.: _____
coefficients: slope: _____ offset: _____
Conductivity sensor model: _____ serial no.: _____
coefficients: slope: _____ offset: _____
Pressure sensor range: _____ psi serial no.: _____
coefficients: FSP: _____ dB offset: _____
Transmissometer model: _____ serial no.: _____
coefficients: slope: _____ offset: _____

Winches:

1. make: Swan model: 329 serial no.: 1482 use: CTD
2. make: " model: 329 serial no.: 1307 use: CTD
3. make: " model: 331 serial no.: _____ use: _____
4. make: " model: 14 serial no.: _____ use: _____
5. make: " model: _____ serial no.: _____ use: _____
6. make: _____ model: _____ serial no.: _____ use: _____
7. make: _____ model: _____ serial no.: _____ use: _____

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 ID: _____ serial no.: _____

Name: _____ module ID: _____ serial no.: _____

Name: _____ module ID: _____ serial no.: _____

Comments: _____

ADCP Setup:

Program version: _____ number of depth bins: _____

Time zone: _____ bin length (2x): _____

Sampling interval: _____ sec pulse length: _____

Blank beyond transmit: _____ pings per ensemble: _____

Pulse cycle time: _____

% pings good threshold: _____

Comments: _____

1996

PDT

Time

Date

Oct. 1 0930

- depart 10.5. jetty for S3 station off Bamberton for test CTD cast
- we are also waiting for arrival of a seaman to meet ship replacing Randy the bosun who got sick.

1020

- Gerry Garneau joins ship

1030

- on station for test cast.
- Seabird system OK - altimeter is erratic.
- tested counterbalancing of the swing sheave block on heave compensator.

- did not latch well as set up
- reversed spacers to move weights further outboard which significantly improved latching
- a further improvement would be to have a guide attached to the triple plate above the latching pin (cross pin) to lead triple plate into the swing sheave block.

- called Peter + Graeme with instructions to fabricate a new triple plate assembly with suitable guide
 - also provided dimensions
 - the new triple plate will be brought out during the science crew change.
 - we can operate with the system as is.

- noticed 2 hooks in CTD cable on winch #482 near termination.

- these are a result of using the CTD for Bongo casts during the station P cruise.
- shortened cable by app. 30m and reterminated.

- pulled new termination against deck fitting to app. 2000-3000 lbs (hydraulics) beginning to stall on #482 (there was a length of nylon rope in line for compliance)
 - termination showed no sign of slipping - i.e. the armoured tail was measured before + after pull test.

- heading for OI + OII steaming all day and over night - ETA Oct. 2 mid morning
 - gale force conditions at north end Van Isle

01 CONSECUTIVE UPGRADE #10 - BOTTLE #20 DIDN'T FIRE
E #1 DIDN'T FIRE

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		MONTH			SHIP			CRUISE				PAGE		OF	
1996		OCT			TULLY			9638							
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	
1	S3	ROS	17:37	BE	1	48 35 59	123 30 04	GPS							
2	SED 0	ROS	2022		2	49 07 230	127 44 337	GPS	2548	395				at 800 m we were over the mooring site	
2	SED 0	ROS	2034		3	49 07 09	127 44 29	GPS	2548	2518				Restart at 200 m	
2	SED 0	ROS	21:17		4	49 06 69	127 43 56	GPS	2548	2518	15 - 36	23		Upcast + Rosette Bottle.	
3	LS 10	ROS	2150	BE	5	49 11 345	127 54 846	GPS	2513	2490	37 - 59	22		Down Cast.	
3	LS 10	ROS	2230	BO	5/6	49 11 464	127 54 860	GPS		2504				Bottom.	
3	LS 10	ROS		EN	6									Up Cast + Bottle trips.	
4	LJ09	ROS	0039		7	49 16 348	127 46 957	GPS	2515	2515	60 - 81	22			
	LJ09		0120		8	49 16.54	127 46.14				60 - 81	22			
4	LJ08	ROS	3:03	BE	9	49 20.04	127 40.97	GPS	1760	1735					
4	LJ08	ROS	3:39	BO	9/10	49 19.95	127 40.89	GPS			82 - 102	20		Bottom	
4	LJ08	ROS	04:25	EN	10	49 19.64	127 40.41	GPS			82 - 102	21		Up Cast + Bottle + trips +	
4	LJ07	CTD	05:50	BE	11	49 24.12	127 34.25	GPS	1828						
4	LJ07	CTD	6:31	EN	11/12	49 23.88	127 34.76	GPS							
4	LJ07	CTD	07:03	BO	12	49 23.86	127 34.75	GPS							
4	LS06	ROS	07:56	BE	13	49 27 770	127 28 473	GPS							
4	LS06	ROS	0816	BO	13/14	49 27 594	127 28 653	GPS			103 - 120	18			
4	LS06	ROS		EN	14			GPS							

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

Date: Time PDT

Oct. 2 0903

- on station OI-W for recovery.

- range 2536, 2538 = distance is 506.

- moving closer

0910

- on station again

range 2503 m = 315 m distance
2497 m = 264 m

2495 m

2494 m

2522 m = 441 m

- sent BEGH - received positive response
- received double ping

0917

- sited on surface app 300 m to starboard

0951

- all on surface

FIRST

METER

OUT WATER AT

10:07

Second meter + transmissometer

10:18

sediment trap. #15

Controller #17 motor

10:34

1143

- call on board - change to CTD/Rosette work

- conditions are gale force winds 35 kn.

- expecting better conditions tomorrow for moorings.

- complete 1 CTD/Rosette to bottom

- headed for near shore end of L Line but were stopped by weather + conditions and have to turn right.

Oct. 3 0805

- on station OI ranging.

- poor ranges 2367 2394 2370 depth is 2499

- very noisy conditions

- speed of sound changed to 1505

received range 2515 and 2543 - more

reasonable but something is wrong here.

- changed SOS back to 1490 received

range of 2519 = 447 m away

2439 ? also suspicious

2519 again

2519 again

2520

= 452 m distant

- moving closer

Over.

Date Time PDT

Oct. 3

0825

- recover O II cont'd
- stopped on new position
- range 2518 - other incorrect ranges
- props still turning
- inconsistent ranges suspect 2518 - 2520 is bottom
- moving toward submerged position and stopping at a point midway between launched & submerged position

0855

- stopped midway between launch + submerge position
- took ship out of generator mode
- checked that release commands were going through Ram transducer - OK
- range 2525 } distance of 479m
- 2525 }
- 2522 } drifting closer?
- 2519 } bottom again?
- 2519 }
- 2519 }

0915

- lost - drifting close to launch position
- moving to submerged position
- stopped at submerged position
- got 2 ranges of 2600 2601 while moving toward position
- above 2600 hear ping but does not stop counter.

0930

- moved to 2 cables north of midway position
- no contact at all

0940

- stopped app $\frac{1}{2}$ cable to south of midway position
- strong pinger signals (2 pingers)
- range at 2518 m = bottom?
- 2519 m
- 2518 m

1000

- moved to spot $\frac{3}{4}$ between launch + submerge position ie $\frac{1}{4}$ away from launch position
- stronger pinger signals
- ranges 2518 2516 2509 = 386 m away
- 2509 = 386 m

1005

- sent CDEF got positive response weak
- sent again " " stronger

1007

- on surface app 100m to port - too close.

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1996		Oct				96-38								
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4	LJ05	CTD	1048	BE	15	49 31.58	127 22.50	GPS	1086	1065				CTD only
			1108		16	49 31.53	127 22.20							
	LJ04		1214		17	49 35.58	127 16.96		165	142				
			1219		18	49 35.59	127 17.01				121-129	9		
4	LJ03		1313		19	49 39.22	127 11.43		128					
			1317		20	49 39.24	127 11.41							
	LJ02		1425		21	49 42.86	127 05.52		84					
			1428		22	49 42.93	127 05.52				130-135	6		
	LJ01	ROS	1504		23	49 44.43	127 02.68		60	55				Looks like top 35m missed
	LJ01	ROS	1509		23/24	49 44.43	127 02.66				136-141	6		
	LJ01	ROS	1515		24	49 44.45	127 02.68							
4	LBP1	CTD	2306	BE	25	50 04.91	127 53.25		54					
4	LBP1	CTD	2308	EN	26	50 04.91	127 53.24							
5	LBP2	ROS	0017	BE	27	50 04.04	127 54.27		115	100				
5	LBP2	ROS	0028	EN	28/20	50 04.112	127 54.159		98	90	142-148	7		
	LBP3	CTD	0058	BE	30	50 03.26	127 55.37		172	165				tripped 1 bottle in error
	LBP3	"	0105	BO	31	50 03.27	127 55.38							

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

Date Time PDT

Oct 4 1233

- on station BP1-W for recovery service, + redeployment.

- range 149m, 154m, = 117m
moving away

- range 283 = 264m

- range 337 * intermittent. = 321m.

- range 323 + noisy.

X/losing contact

- moving back closer.

- range 263 stopping

216

273

185m

189m

195m

1242 - sent BCFH

- gave positive response

" "

- range 145m

- sighted on surface.

- recovered without incident and cleared
- prepare mooring for redeployment

1523

- launched BP1-X at

50° 03.672'

127° 53.664'

in 102 m water
corrected

- proceed to BP1 for CTD/Rosettes

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5	LBP4	ROS	0143	BE	32	50 01.36	127 58.14		1030								
	LBP4		0202	BO	33	50 01.38	127 58.25				149-167		18	#7 did not close			
5	LBP5	CTD	0345	BE	34	49 59.98	128 00.10		1250								
5	LBP5	CTD	0415	BO	34/35	50 00.40	128 00.50										
5	LBP5	CTD		EN	35												
5	LBP6	ROS	0614	BE	36	49 56.34	128 05.65		735								
5	LBP6	ROS	0628	BO	36/37	49 56.74	128 05.80				168-184	17					
5	LBP6	ROS	0700	EN	37	49 57.67	128 05.90										
5	LBP7	CTD	0803	BE	38	49 52.292	128 11.114		2194								
5	LBP7	CTD	0838	BO	38/39	49 52.23	128 10.78										
5	LBP7	CTD	0914	EN	39	49 52.27	128 10.38										
5	LBP8	ROS	1041	BE	40	49 48.61	128 17.08		2075								
5	LBP8	ROS	1113	BO	40/41	49 48.49	128 17.16				185-207	23					
5	LBP8	ROS		EN	41				2072				23	compressor jammed			
5	LIT0	ROS	17:19	BE	42	49 02.47	127 55.64		2508								
5	LIT0	ROS	18:05	BO	42/43	49 02.76	127 55.67										
5	LIT0	ROS	18:52	EN	43	49 03.18	127 56.06				208-229	22					

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

DAILY LOG

OCEAN PHYSICS

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5	LH10	ROS	2031	BE	44	49 0.48 N	127 36 34	GPS	2357					
			2106	BO	44/45	49 0.68	127 35 46	GPS			230-251	22		
				EN	45			GPS						
5	LH09	ROS	2319	BE	46	49 05.62	127 28.44	GPS	2030					
5			2350	BO	46/47	49 05.34	127 28.03	GPS			252-272	21		
6	LH09		0031	EN	47	127 28.02		GPS						
6	LH08	ROS	0122	BE	48	49 09.547	127 22.40	GPS	1916					
	LH08		0154	BO	49	49 09.10	127 22.22			1925	273-293	21		
6	LH07	CTD	03:21	BE	50	49 13.34	127 16.39	GPS	1435					
6	LH07	CTD	03:50	BO	50/51	49 13.91	127 16.62	GPS						
6	LH07	CTD	04:08	EN	51	49 14.26	127 16.73	GPS						
6	LH06	ROS	0529	BE	52	49 17.87	127 10.89	GPS	477					
6	LH06	ROS	0538	BO	52/53	49 17.87	127 11.03	GPS			294-308	15		
6	LH06	ROS	0541	EN	53	49 17.87	127 11.03	GPS						
6	LH05	CTD	0702	BE	54	49 21.28	127 04.29	GPS						
6	LH05	CTD	0706	BO	54/55	49 21.29	127 04.21	GPS						CTD ONLY
6	LH05	CTD	0709	EN	55	49 21.29	127 04.21	GPS						

CAST TYPE -

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ctd
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TIME CODE -

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MR -
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messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

Date

Time PDT

Oct. 6

0720

- on station EOL-W for recovery.
- stopped on station - very noise
- no positive contact and drifted off very fast.
- moving back to station - moving up drift of it and stopping.

0735

- stopped up approx. 3/4 cable to south east anticipating to drift over.
- still very noisy and no contact with mooring - switch ship out of generator mode.
- heard strong signal from both pingers - mooring is in place + on site.
- pod ranges - received 106 m practically on station - no repeats.
- switch to dunking transducer. - no better results.
- sent rearm code CDFG and CDF
- moving back to south east position to drift over mooring.
- tried combinations of deck units and transducers - without luck.
- move back to south east position to drift over.
- no positive contacts.

0840

- move back for 1 more pass over position.
- back on station to S.E. to drift over mooring.
- one possible range at 201 m. - no repeats.
- tried all available deck units (2 old + new with + without 3x ranger and both hull mounted and dunking transducers) without any success.
- listened with pinger receiver to confirm mooring in-place.

0915

- * the release code was not sent during this attempt.*
- I do not have sufficient confidence in the release to send the release command. If I do and the mooring does not rise, we are committed to diving and we do not have this time available today because we have to meet the shore party in Goble River.
- developing gale 25-30 knot winds
- abandon site + head into Goble River. (mooring not released + confirmed on site)

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6	LH04	ROS	0757	BE	56	49 24 90	126 58 63	GPS						
6	LH04	ROS	0802	Bo	56/57	49 24 94	126 50 54	GPS			309-316	8		
6	LH04	ROS	0805	EN	57	49 24 94	126 50 54	GPS	137					
6	LH03	CTD	0912	BE	58	49 28 83	126 53 02	GPS	100					
6	LH03	CTD	0915	Bo	58/59	49 28 83	126 53 02	GPS						ALTIMETER 14 m
6	LH03	CTD	0921	EN	59	49 28 876	126 53 026	GPS						
6	LH02	ROS	1008	BE	60	49 32 135	126 47 318	GPS						
6	LH02	ROS	1010	Bo	60/61	49 32 16	126 47 20	GPS	56		317-321	5		
6	LH02	ROS	1020	EN	61	49 32 16	126 47 20	GPS						
6	LH01	CTD	1052	BE	62	49 34 178	126 43 974	GPS						
6	LH01	CTD		Bo	62/63	49	126	GPS						ALTIMETER 4 m
6	LH01	CTD	1058	EN	63	49 34 130	126 43 976	GPS						
8	LG08	CTD	01:20	BE	64	48 55.25	127 13.35		2063.	2070				89.3
			01:51		65	48 55.17	127 13.25							
8	LG07	CTD	3:39	BE	66	48 59.31	127 07.22	GPS	1760					
8	LG07	CTD	04:13	BO	66/67	48 59.09	127 06.37	GPS						

CAST TYPE -

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

USW - sea water loop

TIME CODE -

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

POSITION CODE -

RAD - RADAR
GPS - GLOBAL
LOR - LORAN

Log 2

Date Time PDT

Oct. 6

1330

- in Gold River - shore party ran on public jetty awaiting ship
- Angelica, Linda, Ken and Rod leave ship.

1430

- picked up Doug, Dave & Victor headed for anchor overnight at Mooyah Bay.

1600

- anchored in Mooyah Bay overnight.

Oct. 7

0530

- anchor lifted ship heads for E01-W for recovery.

0839

- on station E01-W
- listen for pingers - heard both strong signal.
- no ranges
- sent DDFG no response.
- no ranges through hull transducer
- switched to dunking transducer
- no ranges - tried all frequencies without success
- tried isolated deck unit (no 3x ranger) - without success

- no change from yesterday

- mooring on site but not communicating

- moving off 1 1/2 cable to release position.

0900

- no range at this position
- sent ADEF - received weak positive return.

0901

- mooring sighted on surface up 300-400m distant.
- cleaned up mooring and prepared new mooring (on deck).

1116

- deployed mooring E01-X at 49°17.14' 126°35.69' in 102 m water. (corrected)

- prepared mooring E03-X for deployment en route to mooring site.

1414

- deployed mooring E03-X at 49°04.883' 126°57.264' in 497 m water. (corrected)

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8	LG07	CTD	04:34	EN	67	48 58.98	127 06.06	GPS								
8	LG06	ROS	0525	BE	68	49 03.45	127 01.30	GPS	974							
8	LG06	ROS	0551	BO	68/69	49 03.82	127 00.28	GPS								
8	LG06	ROS	6:21	EN	69	49 03.69	127 00.83	GPS			322-339					
8	LG05	CTD	0713	BE	70	49 07.478	126 55.218									
8	LG05	CTD	0719	BO	70/71	49 07.445	126 55.196							6 m off bottom altimeter		
8	LG05	CTD	0724	EN	71	49 07.409	126 55.224									
8	LG04	ROS	0818	BE	72	49 11.252	126 49.698									
8	LG04	ROS	0822	BO	72/73	49 11.236	126 49.765		149		340-347	8		ALT 15 m		
8	LG04	ROS	0830	EN	73	49 11.187	126 49.960							VNH To Bottom - 5m		
8	LG03	CTD	0949	BE	74	49 15.025	126 43.851		121							
8	LG03	CTD	0955	BO	74/75	49 15.052	126 43.897							ALT 9 m		
8	LG03	CTD	0958	EN	75	49 14.995	126 43.892		112							
8	LG02	ROS	11:03	BE	76	49 18.817	126 38.697									
8	LG02	ROS	1107	BO	76/77	49 18.84	126 38.70		102		348-354	6				
8	LG02	ROS		EN	77	49 18.84	126 38									
	LG01		1141	BE	78	49 20.52	126 35.21		56							
	LG01		1143	BO	79	49 20.48	126 35.15									

CAST TYPE -

 BOT - bottle cast
 CTD - ctd
 MOR - mooring

 ROS - rosette
 NET - net haul
 DRF - drifter

USW - sea water loop

TIME CODE -

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 MR - messenger release
 RE - recover mooring

POSITION CODE -

 RAD - RADAR
 GPS - GLOBAL
 LOR - LORAN

Date Time PDT

Oct. 7 1445 - arrive Stn LGO6 for Globec/LGOF3
VNH intercomparison casts between
1445 to 1640.
see VNH logs for details.
- we are app. 3 cables from LGO6 in
1000 m + water depth.

Oct. 8 1005 - stopped on station AI-W.
- ranges 516, 520, 524, 526 = 215 m
 - drifting away.
 - range 546 = 260 m away
- range 554
- send ABEF - got positive response.
- range 222 = rising
- sighted on surface
- recovering + prep-ing mooring for
 redployment

1337 - deployed mooring AI-K in 500 m
 of water at $\swarrow$
 48° 31.937',
 126° 12.270'

- head for LDO9 for Bongo
intercomparison work until 1640 hrs.

- completed 3 sets of 3 VNH
intercomparisons.

October 10 CRD S-K

Rem 7915 027M IN WATER 16:29 PDT

Rem 5948 16:31 PDT

ANCHOR AWAY PDT

Position 48 23 755 1635
 123 20 914

Depth. 59.6

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		MONTH		SHIP		CRUISE		PAGE		OF				
1996		Oct.				96-38								
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
9	LD09	CTD	0019		80	48 35.73	126 30.03		1041	1079				
			0038		81	48 35.61	126 29.79							upcast
	LD09		0056		81									
9	LD08		0139		82	48 39.19	126 23.24		758					
9	LD08		0152		83	48 39.16	126 23.10				355-371	17		
9	LD07	CTD	03:04	BE	84	48 42.57	126 16.89		464					
9	LD07	CTD	03:09	BO	84/85	48 42.55	126 16.87							
9	LD07	CTD	3:16	EN	85	48 42.49	126 16.92							
9	LD06	ROS	04:04	BE	86	48 46.24	126 10.31		139		372-380			
9	LD06	ROS	04:10	BO	86/87	48 46.33	126 10.25							
9	LD06	ROS	04:17	EN	87	48 46.39	126 10.215							
9	LD05	CTD	05:05	BE	88	48 49.68	126 03.83		91					
9	LD05	CTD	05:09	BO	88/89	48 49.66	126 03.85							
9	LD05	CTD	05:12	EN	89	48 49.68	126 03.93							
9	LD04	ROS	06:05	BE	90	48 53.16	125 56.98		65		381-386			
9	LD04	ROS	06:08	BO	90/91	48 53.18	125 56.96							
9	LD04	ROS	06:12	EN	91	48 53.22	125 56.95							

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

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR			MONTH			SHIP			CRUISE			PAGE		OF	
1996			Oct			TULLY			9638						
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	
9	LD03	CTD	0720	BE	92	48 56.622	125 50.604								
9	LD03	CTD	0724	EN	93	48 56.643	125 50.604		42	37					
9	LD02	ROS	0809	BE	94	48 58.385	125 47.203								
9	LD02	ROS		BO	94/95	48 58.388	125 47.170				387-391				
9	LD02	ROS	0816	EN	95	48 58.371	125 47.170		45						
9	LD01	CTD	0847	BE	96	48 00.220	125 43.906								
9	LD01	CTD	0848	BO	96/97	49 00.196	125 43.926		37						
9	LD01	CTD	0850	EN	97	49 00.206	125 43.916								
9	LC01	ROS	1037	BE	98	48 50.575	125 27.874		97					CTD NOTS CMCA	
9	LC01	ROS	1043	BO	98/99	48 50.56	125 27.98				392-396	5			
9	LC01	ROS	1048	EN	99	48 50.583	125 27.979								
9	LC02	ROS	1130	BE	100	48 48.67	125 31.09		111						
9	LC02	ROS	1133	BO	101	48 48.69	125 31.15				397-403	7			
9	LC02	ROS													
	LC03	ROS	1210	BE	102	48 47.01	125 34.57		132					Wind 20 knots.	
			1213	BO	103	48 47.04	125 34.66								
	LC04	ROS	1305	BE	104	48 43.36	125 41.07		167						
			1309	BO	105	48 43.30	125 41.12				404-413	10			

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

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		MONTH		SHIP		CRUISE		PAGE		OF				
1996		Oct				96-38								
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
	LC05	CTD	1412		106	48 39.92	125 41.46		64	55				
			1414		107	48 39.93	125 47.27							* Number not used
					108	← not used								
9	LC06	CTD	15:02	BE	109	48 36.32	125 54.19		92					
9	LC06	CTD	15:10	BO	109/110	48 36.42	125 54.28							
9	LC06	CTD	15:19	EN	110	48 36.51	125 54.37							
9	LC07	ROS	16:19	BE	111	48 32.91	126 00.64		130		414-421			
9	LC07	ROS	16:23	BO	111/112	48 32.87	126 00.65							
9	LC07	ROS	16:26	EN	112	48 32.87	126 00.63							
9	LC08	ROS	17:17	BE	113	48 29.16	126 07.24		203		422-432	11		
9	LC08	ROS	17:23	BO	113/114	48 29.99	126 07.33							
9	LC08	ROS	17:32	EN	114	48 28.79	126 07.44							
9	LC09	ROS	1836	BE	115	48 25.79	126 13.86		630		433-448			
9	LC09	ROS	1852	BO	115/116	48 25.36	126 14.23							No Surface sample
9	LC09	ROS	1856	EN	116	48 25.36	126 14.23							Bottle tripped out of water
9	LC10	CTD	2016	BE	117	48 22.364	126 20.221	GPS	1243					
9	LC10	CTD	2036	BO	117/118	48 22.28	126 20.37	GPS						
9	LC10	CTD	2051	EN	118	48 22.49	126 20.57							

CAST TYPE -

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YEAR		MONTH		SHIP		CRUISE		PAGE		OF				
1996		Oct				9638								
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9	LB13	CTD	2313	BE	119	48 10.53	125 56.36		892	880				
9	LB13	CTD	2326	BO	120/119	48 10.56	125 56.50							
9	LB13	CTD	2344	EN	120									
10	LB12	ROS	0014	BE	121	48 12.83	125 51.86		509	506				
10	LB12	ROS	0023	BO	121/122	48 12.79	125 51.88				449-463	12		
10	LB12	ROS		EN	122									
10	LB11	ROS	0113	BE	123	48 15.08	125 47.70		210	201				#463 used before.
10	LB11	ROS	0119	BO	123/124	48 15.11	125 47.69				463-474	12		
10	LB11	ROS		EN	124									
10	LB10	CTD	0210	BE	125	48 18.50	125 41.30		154					
10			0213		126	48 18.49	125 41.31			148				
10	LB10	CTD	0220											
10	LB09	ROS	03:06	BE	127	48 22.11	125 34.97	GPS	152		476-484			
10	LB09	ROS	03:10	BO	127/128	48 22.19	125 34.96	GPS						
10	LB09	ROS	3:17	EN	128	48 22.37	125 34.96	GPS						
10	LB08	ROS	4:07	BE	129	48 25.28	125 28.71	GPS	145		485-492			
10	LB08	ROS	4:12	BO	129/130	48 25.39	125 28.73	GPS						
10	LB08	ROS	4:18	EN	130	48 25.54	125 28.77	GPS						

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messenger release
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POSITION CODE -

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GPS -

LOR -

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DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR 1996			MONTH October			SHIP Tully			CRUISE 9638					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	
10	LBO6	ROS	5:35	BE	131	48 32.14	125 15.58	GPS	118		493-499	7			
10	LBO6	ROS	5:38	BO	131/132	48 32.16	125 15.61	GPS							
10	LBO6	ROS	5:43	EN	132	48 32.23	125 15.62	GPS							
10	CRD5	CTD	21:30	BE	133	48 23	123 20	GPS	58						Down
10	CRD5	CTD	21:18	EN	134	48 23 744	123 20 810	GPS							UP
10	CRD6	CTD	21:25	BE	135	48 23 516	123 20 221	GPS	78						Down
10	CRD6	CTD	21:30	EN	136	48 23 534	123 20 028	GPS							UP
10	CRD7	CTD	21:38	BE	137	48 23 840	123 20 889	GPS	40						Down
10	CRD7	CTD	21:40	EN	138	48 23 911	123 20 892	GPS							UP
10	CRD8	CTD	21:50	BE	139	48 23 483	123 21 263	GPS	70						Down
10	CRD8	CTD	21:53	EN	140	48 23 459	123 21 224	GPS							UP
10	CRD1	CTD	22:15	BE	141	48 23 868	123 24 167	GPS	57						Down
10	CRD1	CTD	22:18	EN	142	48 23 908	123 24 150	GPS							UP
10	CRD2	CTD	22:27	BE	143	48 24 072	123 23 543	GPS	62						Down
10	CRD2	CTD	22:29	EN	144	48 24 057	123 23 531	GPS							UP
10	CRD3	CTD	22:40	BE	145	48 23 374	123 24 164	GPS	63						Down
10	CRD3	CTD	22:42	EN	146	48 23 338	123 24 128	GPS							UP
10	CRD4	CTD	22:55	BE	147	48 24 169	123 24 923	GPS	55						Down

CAST TYPE -

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Date Time PDI

Oct. 9 2243 - completed last station
LB06

- LB07 and remainder of
LB Line cut for back
of time

2300 - heading in to Bantfield for emergency
evacuation of Basun-A. Keene
who has been suffering from an
injured back for the past 2 days.
This evening he had been
drinking and taking medication
prescribed to someone else. The
combination has resulted in his
vomitting and stopping to breathe
and becoming incoherent.

Oct. 10 1100 - called Darren again to arrange delivery
of 2 9 volt batteries to ship at 1230

1237 - dispatched rubber boat to get batteries
1239 - on mooring site for recovery.
- range 188 m 181 m 180 m
1240 - sent ABETH + received positive response
1241 - sighted on surface.
- Recover + cleanup on way to CRD5.

1318 - on station CRD5 - ✓
- ranges 322 329 310 312 coming to
stop
- sent ABCD - received positive response

1320 - sighted on surface

Oct 10 1966	CRD5K	deployed	PDT
	Rcm	7915	PDT
	Rcm	5948	PDT
	ANCHOR AWAY		PDT

Position 48 23 755
123 20 914

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

[illegible]

CAST TYPE -

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bottle cast
ctd
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