

CRUISE
NUMBER

9529/9604

DAILY LOG
INSTITUTE OF OCEAN SCIENCES
OCEAN PHYSICS

DATE

Aug. 9, 95 — May 10, 96

Book #1
of 2.

VESSEL

Various

PROJECT

Minette Bay, B.C., Proj.

Cruise # 9604.

Feb 96 Trip

Start Project
9604

Feb. 5-9, 1996.

Feb. 3 - shipped equipment by Canadian Airlines
Waykill # 018 532 59 194.
12 pcs. @ 192 Kg.

- 1 small stacker - 24 Oz flasks
- 1 green plywood - empty box with packing - samples
- 1 grey suitcase - IO transducer.
- 1 plywood box - IO Command unit - cables

- headset
- manuals.

- 1 plywood box - IO 1090 # 214 - upper + lower isolation.

- 1 fiberglass case - Mesotech Finger receiver complete
- headset, manual, transducer, battery, cables.

- 1 large stacker

- 1184 # 1007

- 4 spare large hose clamps

- 1 spare mounting assembly complete.

- Dell 486 complete - cables

- charger

- manuals

- STD + 1184

- programs

- Endeco spares kit

- 1 set spare batteries (soldred 2nd)

- Endeco reader

- 8 erased cartridges

- manual + dessicants

- spare pinger

- instrument block + clip board.

- 1 aluminium case

- STD 12 # 474

- manual + cables

- aluminum power plugs

- blue box + 9 volts.

- 1 large stacker

- Trimble GPS + mast cables.

- antenna, manual spare AFA batteries

- spare pinger battery

- Anderson spares kit + 2 Leclanchés

- + DSU interface + PCMCIA manual

- + spare rotor

- hardware 2 x 7/16" Ø, 3.5m x 3/4" poly

- and drop 1" Ø with isolators

- 1 case salinities

- wet weather gear

- consumables supplies tapes, tools etc.

- 1 small stacker

- 1 small stacker

- 1 yellow metal tool box

- tools

Feb 5.

0715

- T.J. leaves 105 for Vic. Airport

0805

- depart for Prince Rupert
- airplane can't land in Terrace due to freezing rain conditions
- we continue to Prince Rupert but there are delays to take care of Terrace passengers

1145

- arrive Canadian Air Freight office P.Rpt.
- meet Uriah
- pick up freight (12 pcs.)
- pick up luggage
- load truck + drop Uriah at home.

time
ave
local
time

1410

- meet Cliff Mitchell at Seal Cove + pick up scrap shackles
- go to warehouse + repack truck, including equipment stored here.
- ready to go to Terrace

1800

- checked in at Aluminium City Motel 639-9323

- set up equipment, sort what I need next day, equipment on charge.
- all done including log keeping.

NB. 02

sensor removed from STD 12 Feb. 2, 96

Feb. 6

- 0800

- call Don @ Kitimat Booming
- loaded truck and departed for booming ground.

- 0830

- met Don @ booming ground and then drove to MK Bay to load Bull Block.

- 0945

- loading and set up complete depart for KA station. for CTD/hydro work
- excellent conditions - early morning light rain had stopped, mild temperatures no wind.
- all equipment up + running without problems.

time
ave
local
time

- 1005

- on station KA

53° 59.140

128° 39.333

- sounding = 54m

Feb 6

- 1014 - STD to 60 m at Stn. KA by counter
- STD down to 58 decibars
- Logged as KA008. raw and KA008. rel.
- backed up data on disk

15/1/96

96040008.0XY

recalculated

using bottle salinities

+ est. pickling temp

(0.55)

- 1030 - back on station commencing hydro cast to 55 m. KA 008 - hydro.

Depth	%	O ₂ flask	Bottle Salinity	est. Pickling T
✓ 55	149	2070	31.182	6
✓ 40	150	2071	30.765	5
✓ 30	151	2072	30.545	5
✓ 20	152	2073	30.240	5
✓ 10	153	2074	29.749	5
✓ 5	154	2075	29.378	5
✓ 0	155	2069	28.975	5

local time

- 1125 - cast complete head for MK Bay to pick up truck + drive around to booming ground.

- we have to wait until tide suitable to gain. - have coffee break

- 1 drive truck around Don takes Bull Block around

- 1300 - back on boat heading for mooring site for recovery.

- 1310 - on station - heard strong pinged signal ✓

- ranges 34, 38, 54 m.

- sent release code ADEF

- received positive response - mooring did not surface

- range 54 m.

- moved back on station

- ranged 46 m. 44m.

- sent ADEF for release

- received positive command - mooring does not rise.

- range 38 m.

Feb. 6

1330.

- ranges 72 74 m
- sent ADEF - no response this time

1335

- move on station again.
- 61, 64, 64 m ranges
- sent CDFG
- range 64 m
- sent ADEF - positive response but mooring does not surface.

- sent ADEF again on 10 pulse width.
got positive response but mooring not up
- ranges 30, 37 m.

1340 -

ranges 64, 59 m

1350

- sent CDFG followed by ADEF
3 times + received positive response each time - mooring not surfacing
- range 49 m

- moving back on station.

- ranges 99 104 m.

- sent ADEF got positive response no surfacing.

- move back on station

- ranges 43, 47, 48 m

- sent CDFG followed by ADEF
at each pulse width, 2, 10, 20

- received positive response in each case
no mooring on surface
- range 49 m.

1417

- move back on station.

- ranges 21, 22, 20 m (lowered transducer)

- right on station

- ranges 24, 21 m.

- sent CDFG followed by ADEF 3 times
at each pulse width higher gain
lower transducer with no mooring
rising but positive response.

- sent ADEF x3 in sequence same results

- sent CDFG to leave with armed.

- range 41 m, 41 m, 43 m.

1445

- leave mooring in place - hope to

arrange direct assistance.

- continue with CTD/hydras.

Feb. 6.

1447

- on station MBO

54° 01.370'
128° 37.268'

- sounding 39 m at tide ending
flood.

1500 - STD MB009 to 38m by counted.

1510 - set up for hydrocast.

1520 - Depth

15/10/96

96040009.0xy

recalculated

using bottle salinities

± est. pickling

temps from CTD

(0.35)

		<u>%o</u>	<u>O₂ flask</u>	<u>Bottle Salinity</u>	<u>Pick Temp</u>
✓ ✓	36 m.	156	2068	30.100	5
✓ ✓	30 m	157	2066	30.038	5
✓ ✓	25 m	158	2065	29.979	5
✓ ✓	20 m	159	2064	29.843	5
✓ ✓	15 m	160	2063	29.799	5
✓ ✓	10 m	161	2062	29.378	5
✓ ✓	5 m	162	2061	29.258	5
✓	0 m	163	2060	28.015	5

- 1550

- cast complete

- start surface search for mooring before leaving site. covering likely areas where mooring may drift.

- no result.

- 1619

- back on station ranges 47m, 48m
- sent CDFG + ADEF 3x with positive response from mooring without it surfacing

- this is stack tide condition earlier was flooding tide.

- sat on site to make sure mooring is not missed ranges 48m, 49m

- sent CDFG to near mooring

- range 45m, 44m

- pinger signal still strong. nothing on surface

- 1630

- headed in. off load.

- 1700

- heading back to Motel & phone to deal with divers.

1800

- called local divers Bob Lewis + partner
632-3949
 - not available for 2 wks
 - \$1000/day
- called Jeff Adams Diving Services
Prince Rupert
 - tel: 624-3088
 - fax: 627-1574
 - \$1500-1600/day + travel expenses
 - not available this week maybe 2
- called David discussed options
 - decided we try deoustic again next day and a 2' boat drag with very light gear - heavy drags could damage Enduro's and loose data.
- called Don agreed to meet next morning at a place to buy light drag gear.
 - fisherman fitters
- packed up samples, backup data disks + logs to send back
 - too late to take to Temare Airport
 - missed cut off time for last flight.
 - will drive down tomorrow morning for first flight.
- caught up logs, check over equipment for next day + put things on charge overnight.

Feb. 7

- 0700

drove to Terrace Airport to send
off O₂ samples
Air B.C. Waybill # 742-5203-2956
paid in cash.

- called Dario
- discussed merits of heavy
+ light drag - Dario wants
no damage

local
time

0900 - met

Don + Jack at Kitimat for coffee
+ meeting re drag.

0930 - went to hardware store bought light
drag equipment

- proceeded to vessel + loaded.

1030 - on station for recovery with Bull Block
+ dozer boat

- tide is ebbing - just coming to slack
- ranges 23, 24,

we are on top

- sent CDEFG

- sent ADEF - got single ping back

- sent CDEFG - got confirmed release back

- range 37, 41

- sent ADEF - single ping not surfacing

- range 47

- sent ADEF - got positive response.

- range 63 m

- left instrument released

- Don gauged bearing of drift.

- range 47

- sent ADEF - positive response no surface

- range 63 m

- left instrument released

- Don gauged bearing of drift.

1054

- back on station to fix location by shore
markers for Don's sake.

- ranges 56, 57 m

- moving closer.

- ranges 43, 43, 45

- sent ADEF - got positive response - no release

1115

- drag set up 1st - moving onto position
such that mooring site is approx. between the

two vessels and we will drift over location
direction of drift out the channel (ebbing still)

(more to 5 knot winds - coming up the inlet

- got something at 54° 01.358' 728° 37.429'

- first drag completed

- pulled up dead branch.

- obviously we reach bottom
(could feel line moving over bottom)

1215

- ready for 2nd drag with reversed drift

- no results.

- moved back on station got

ranges 85, 86 m

- sent ADEF received positive response - no surfacing

Feb. 7

- moving back on station ranges 43 46 m
- move to drag position up the flooding tide
- deployed line 3rd drag
- caught something and line broke
- flooding tide is moving boats faster now
- could feel line moving over bottom
- lifted 5m.

- line caught on something went taut for a few minutes - felt line slipping over something - then it went suddenly slack.
- thought it broke - but line was intact when recovered? did we catch moving + depress top buoy?

- decide to try again approx 1/2 hr. later.
- when tide is slack - flood too strong.
- do CTD/hydro while waiting.
- NB release has been left in released status all this time without moving surfacing.

1320 - on station MBO for CTD/hydro
 1323 - completed CTD MB010 .rel .ran

54° 01.394'
 128° 37.287'

1344 - Hydro MB010

15 Jul 96

96040010.0 x1

recalculated

with bottle salinities

+ est. picking temp

from CTD

(DJJ)

Depth	‰	O ₂	Flask	Bottle	Est. Pick
✓ 36 m	164 + 172	2055		30.128	5
✓ 30 m	165	2047		30.128	5
✓ 25 m	166	2056		30.068	5
✓ 20 m	167	2057		30.038	5
✓ 15 m	168	2059		29.917	5
✓ 10 m	169	2049		29.798	5
✓ 5 m	170	2051		28.608	5
✓ 0 m	171	2052		27.667	5
		2054		23.826	5

1436 - hydro complete

- resume dragging at slack high water.

1440

- on station

- ranges 43 50.5 m

- sent CDFG

- received single ping

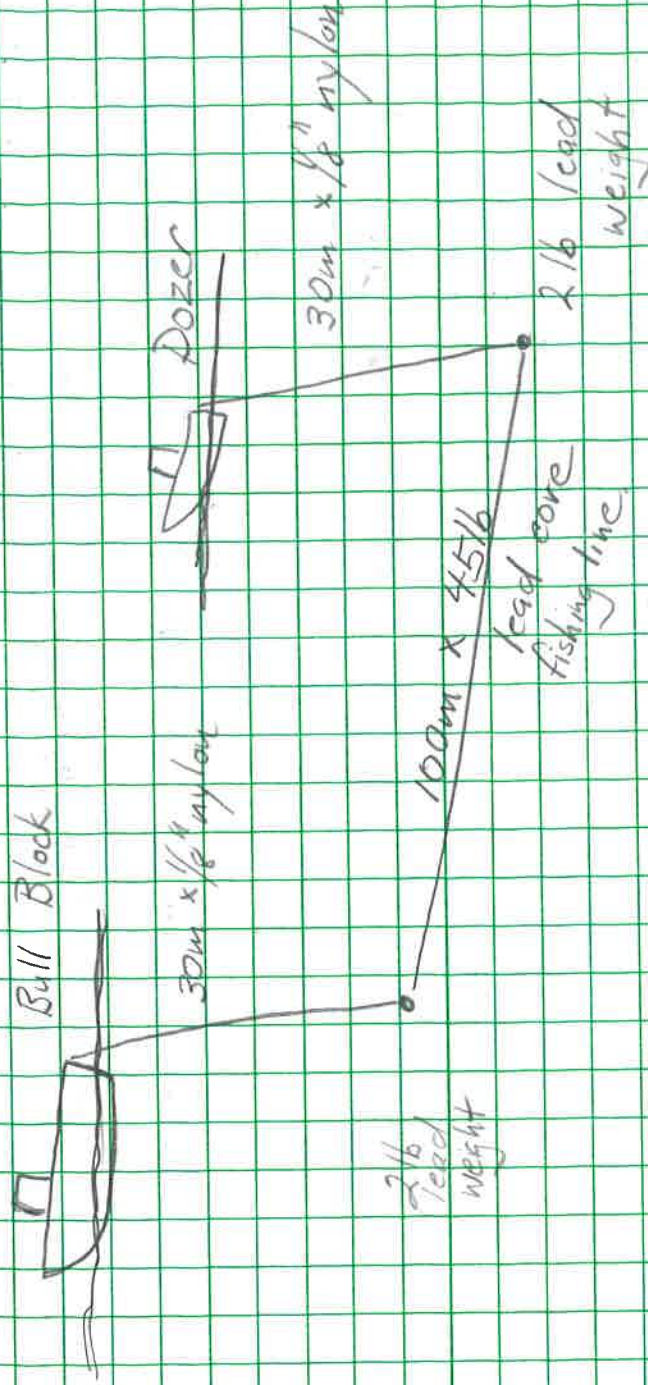
- sent ADEF

- received positive response - 10 surface

- sent CDFG

- same

Drag Setup



Drag procedure:

- ① The Bull Block goes roughly to mooring position to determine current direction + rate of drift.
 - this was very variable with wind + tide, changing constantly.
- ② we move Bull Block over mooring using GPS + acoustics.
- ③ Bull Block moves off mooring site against expected drift approx. $\frac{1}{2}$ the length of our drag line is 50m.
- ④ the Dozer comes alongside stretches out drag line again with the direction of drift in mind.
- ⑤ both boats use 30m x 1/8" nylon and weights to quickly and simultaneously lower drag line to depth.
- ⑥ both boats drift over mooring site.
 - the lowering lines remain vertical (nearly) until something is snagged.
 - the Bull Block is used to modify drag array configuration by small manoeuvres around the dozer boat - on 2 occasions nearly complete circles are steamed using one boat as reference point.
 - on 2 occasions both boats were greatly manoeuvring
 - when tension came on the line the boats came together and the line was pulled in.
 - when the drag line touched bottom we could feel this and we lifted up on the lowering lines by enough to stop drag line from touching bottom.

Feb. 7

- sent ADEF - positive release response not surfacing.
- ranges 85, 86, 91 m - drifting.
- moving back on dragging position for 4th drag
- again tension came on then slipped off
- sent release + rearm commands during drag

1540

- setup 5th drag
- no results - drifted in wrong direction
- ranged on mooring
- setup 6th drag
- tension came on line - line jerking like slipping over something - tension increased then the line broke.

*

1600

- Don felt certain it was the mooring.
- I was sending range + release commands
- GPS ran out of 3rd (+final) set of batteries.
- returned to station by shore markers
- range 56 m
- checked pinger - still strong signal
- tide ebbing increases we are drifting fast

1620

- back on station by shore markers
- ranges 40 m, 48 m, 47 m
- sent ADEF - received positive release response
- mooring did not surface
- sent CDFG - received single ping confirmation
- sent CDFG - " "
- mooring in place, standing upright, rearm and pinger working - we wait a little and search surface
- head back in

1640

1730 - off load Bull Block completed

1800 - back at motel prepare samples for shipping

2000 - at Terrace Airport shipping samples
Canadian Air. 018-3325-2494

2100 - back at motel packing up equipment

Feb 8 0800

- pack equipment + head off to

Prince Rupert - alter flight arrangements

1218

- arrived warehouse

- call Dr. H.

- pack equipment for storage at warehouse

- shipping to Victoria

- separate pile for what divers might need.

- service equipment in prep. for next trip.

- 1630 - at Canadian Air
- ship 7 ps to Victoria
#018-53303622
- check in for evening flight to Vic.
1730 - meet Ulrich & return truck
discussions about future
- log keeping while waiting for flight.

- Feb 12 - pick up equipment in good
condition & demobilized.
- Bernard ran salinity samples.

Feb. 96 Trip Left. In P. Rup Warehouse

1) STD case

- STD 12 #474 (rinsed + serviced new batteries installed for this trip)
- "blue box" (new batteries) + spare batteries
- spare "blue box" needs batteries
- RS232 25/9 pin, data cable + spare
- bottle brush, manual.
- 2 x shorting plug
- all ports cleaned & greased dunnied.
- IO 1090 #214 with top + bottom isolation
- Enderco #1007 (new batteries installed Feb 96)
- spare mounting hardware (complete)
- 4 new ss. hose clamps
- RS232 + reader
- 8 new soldered "D" cells
- Enderco Spares kit
- erased cartridges (8) { No Leclanché's
- Aanderaa field spares kit { DSU or (DSU interface)
- spare paddle rotor
- spare pinger + battery
- manuals, Enderco, RCM7 (O.K.)
- 2 Niskin bottles
- hydro weight + 3 x sampling tube
- 3 messengers + bottle mount board
- 70 liners + 18 caps + %0 labels
- hydro block serviced
- hand winch mast hardware
- app. 200 ml. MnCl₂
- app. 200 ml. NaOH
- MnCl₂ dispenser - disassembled + rinsed
- NaOH "

4) large stacker

#NB

- all of the equip listed previously loaned to Uriah is still there, spare bottles, dispensers, reagents, etc. see equipment left after Oct 95 trip.
- winch tie-down lines (3 lengths 1/2" nylon)
- blue tarp (torn) green tarp (O.K.)
- 10m 5/16" wire from original mooring terminated, zinc

5) Not boxed

- new drop line c/w 1" ϕ isolators 3.5m x 3/4" poly
- 5/8" sp anchor ϕ , anchor assembly chain, 2 x 7/16" sp ϕ
- 20 x 15/16 scrap shackles
- hardware 2 x 5/8" sp anchor ϕ 1 round isolator
- 2 x 1/2" " " 3 x small ϕ
- 3 x 7/16" " " "
- 1 x 1/2" ss sp chain ϕ

6) For Divers

- RCM7 vane box MT
- RCM7 instr " MT
- IO 1090 box MT
- 1 large stacker c/w 2 x 30m x 1/8" nylon
- 100m x 45/16 test
- (4) fishing weights + bobbers (2)
- 2 Enderco foam cases + sensor caps

70

- packing for samples.

- O₂ flasks + packing

- ITO Transducer

- IO Command Unit

- charge cable, head set, manual.

- wet weather gear.

- / case salinities

- Dell computer with manual battery charger.

- 50 salinity caps & liners

- Trimble GPS - cables, manual antenna + mast.

- cellular telephone, charge, battery cables

- supplies

- electronic tools

-batteries

- $V_H F(x_2)$ radios + chargers.

$$-30 \text{ m} \times 40 \text{ m} \times 5 \text{ m}$$

Therapy with cath

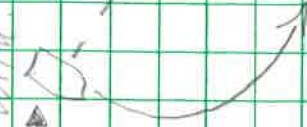
- P crinops & thimbles

$$-6 \times 10^9$$

Mar. 12

- 0815 - met Don, Fred, Bull Block + Sidewinder at booming ground.
 - load + set up.
- 0920 - set up complete for drag head for mooring site.
 - conditions, choppy wind at 10-15 and building.
- 0935 - on station GPS exact
 - strong pinger signal.
 - ranges 55, 54, 53 m drifting closer.
 - sent ADEE - received positive response
 - no release
 - sent CDFG - got single ping back
 - repeated sequence 3 times got same
 - result - mooring does not surface
 - strong positive release responses (audible by human ear thru boat hull).
 - last command was the release command = shaft turned to release position.
- 0945 - dropped marker buoy in position (recycled divers marker buoy which was dropped far off position, i.e. divers did not have working GPS.)
 - this will be the reference point for our drag.
 - went to get side winder.
- 1055 - 2 unsuccessful drags completed
 - 1st we caught log - too far
 - 2nd we missed everything - too close.
- 1130 - 3rd drag brought branches up from bottom
 - looked good for a while
 - also tangled with marker buoy
 - reflected marker buoy position
 - still on position.
 - set up another sweep working away from marker buoy
- 1220 - 4th drag more branches off bottom. (big ones)
 - 5th drag successful. - mooring pulled free with 50 m of marker buoy
 - mooring surfaced approx. midway between boats to NW of marker buoy.

Sidewinder →



• - Bull Block at marker buoy.

1230

- all recovered

- release hook open

- heavy sedimentation evident. silt settled on top plate of both Endeco

- one vinyl float completely free floating above water

- top Endeco buoyant

- 2nd vinyl $\frac{1}{3}$ buoyant above water

- slime fouling on all components

- Endeco stainless parts corroded

1315

- all packed away mooring components & equipment and set up water quality

- head for silt MBI for CTD MBO11

1340

- on station MB 5401.381 128 37.277

- sounding to 37 m.

- CTD MBO11, rel + raw to 37m.

- set up for hydro cast MBO11

15 Jul 96

96040011.0 x 4

recalculated with bottle salinities

and estimated piddling

temp from CTD

(0.55).

Depth

✓ 36

✓ 30

✓ 25

✓ 20

✓ 15

✓ 10

✓ 5

✓ 0

%o

173

174

175

176

177

178

179

180

Bottle Sal

30.383

30.355

30.286

30.200

30.138

29.910

29.543

6.794

O₂ Flask

2070

2071

2072

2073

2074

2075

2063

2064

est

6

6

6

6

6

6

6

4

1520

- all done + tied up for offloading

- called Dario while returning to hotel to pack oxygen samples

- leave for Terrace + pick up cleaning supplies

- ship samples from Terrace

- back at Kitimat # 018 53573240 made evening flight

- realized I do not have new Leclanche battery

- call Dario with waybill # and asked for battery to be shipped up.

- can not deploy tomorrow will only complete water quality survey.

} cleaning supplies

} made evening flight

- Aluminum City.

- cleanup of equipment and servicing is very time consuming

- equipment is fouled with heavy sedimentation some magnetic sticking to magnet on RCM rotor, - rotor also mounted too tight - very stiff.

- wave gimbal fouled with sediment and grinds when turning

- all stainless parts covered with red stained calcareous deposit which reminds me of cement and flakes off in sheets

- Endeco sensors not fouled but stainless parts show signs of exacerbated crevice corrosion, where ss. meets plastic.

- all instruments required disassembly, individual parts washed using abrasive pad.

- as it turns out I could not have been ready to deploy tomorrow

anyway - regardless of missing battery - I call Don about not being able to redeploy until Thurs morning - this was O.K.

Mar. 13

- head for booming yard to meet Don + Mike
- load Bull Block
- head out on high tide to KA.
- light wind, rain, 1-2 ft chop, small white caps

0700 - on station for CTD KAO12

- forego taking sounding time is of essence to get back into Minette Bay with tide.

53° 59.148' 128° 39.343'

0710 - CTD KAO12 taken to bottom at 57m. by counter

- KAO12. rel + . raw

0712 - set up for Hydro KAO12 to 55m

Mar. 13

0720 - Hydro KAO12

15/10/90

96040012.0 XY

recalculated

using bottle salinities

+ est. pickling temp

from CTD

(DJS)

Depth

✓ 55

L 40

✓ 30

✓ 20

✓ 10

✓ 5

✓ 0

0825 - station complete + heading in before
tide too low0845 - on the inside heading for MB1 station
for CTD MB013 to bottom

0850 - 54° 01.381 128° 37.314'

CTD MB013

- set up for Hydro MB013 37m by counter.

0930

15/10/90

96040013.0 XY

recalculated using

bottle salinities

est. pickling temp

from CTD

(DJS)

Depth

✓ 36

✓ 30

✓ 25

✓ 20

✓ 15

✓ 10

✓ 5

✓ 0

1030 - pull up man for buoy left by divers

#	%o	Bottle Sal	O ₂	est Pickling Temp
181	31.006	2065	6	
182	30.804	2066	6	
183	30.673	2068	6	
184	30.281	2069	6	
185	29.300	2056	6	
186	26.650	2057	6	
187	6.752	2059	5	

%o	Bottle Sal	O ₂	est Pickling Temp
188	30.383	2060	6
189	30.383	2061	6
190	30.323	2062	6
191	30.286	2055	6
192	30.147	2054	6
193	30.105	2052	6
194	29.816	2057	6
195	29.443	2049	4
196	5.931	2047	5

- 1100 - back in + offloaded
- called Dario - tells me battery on its way via Air B.C. #742/538/7541
Held for Pickup Terrace 2100 hrs.
- prep. equipment for mooring Thurs morning
- prep. samples to ship south.
- downloaded data from 1078 - good.
- " " 1079 - failed 3 days after starting.
i.e. before even shipping
to Rupert
- RCM₇ DSU shows data on it 24711 records but it is not incrementing and does not communicate. (spart DSU does - using same setup + equipment)
- started Eucleo 1007
+ RCM₇ 9049
1078
see instrument logs for details.

- 2000 - shipped samples to Dario
- pickup Andersea batteries shipped by Dario
- continue preparation for mooring.
- called Don to update him.

- 2330 - preparations complete

Mar. 14 96

- 0800 - meet Don + Fred. at booming yard
- load Bull Block and prep. mooring alongside

- 0920 - sail for mooring location.

- 0926 - launch mooring 128° 37.48'
- MB0-C 54 01.36

37 m depth.

- 1000 - back in Bull Block unloaded
- head for motel to load up + check out.

- 1130 - truck loaded check out heading for Terrace

- 1230 - meet Scot Trent + return his marker buoy and rope.

- 1500 - at Prin Rupert warehouse + sorting equipment packing

-1700

- cousin returning equipment to Canadian Air Freight

11 pcs. Waybill #

- contacted Uriah to return keys.

- check in at Crest.

1830

- returned rented vehicle

- log keeping

Equipment Left in P. Ryp. Mar. 96

- MT release box
- MT RCM box
- MT RCM, vac box
- (2) Niskin bottles
- shd. { 4 Oz reagent dispensers (bulb pipette)
- { 250 ml $MnCl_2$
- { 750 ml $NaOH \cdot I$
- blue tarp + green tarp.
- 1 large stacker with - Endeco foam protectors (2)
 - instrument cleaning clothes + scrubber
- 1 large stacker
 - 2 Niskin bottles
 - 125 ml $MnCl_2$
 - 125 ml $NaOH \cdot I$
 - 2 reagent dispenser pipettes
 - hydro wt.
 - bottle rack
 - hand winch, mast, wire, hardware
 - 3 messengers
 - sampling tubes
 - meter sheave
 - 100 liners
 - 50 caps, labels (900)
- 1 large stacker
 - 300 m $5/32"$ wire
 - 100 m $5/32"$ wire
 - 10 m $5/16"$ terminated + zincd from MBO - A mooring (creaky truss)
 - 3 short lengths $5/8"$ nylon tie down rope
 - 2 x 30 m $1/8"$ nylon
 - 3 assorted long lengths 300 lb test monofilament.
 - dragging grapple
 - 30 $5/32"$ sleeves + $4 \times 5/32"$ thimbles
 - 1 short piece $1/2"$ chain
 - 300 m + $1/4"$ poly rope
 - 1 x $5/8"$ $1 \times 1 1/4"$ $7 \times 7/16"$ $\emptyset$
 - 4 x small $\emptyset$ $1 \times 1/8"$ ss $\emptyset$
 - spare Hauderdaa rotor.
- aluminum case
 - STD 12 #474 Mar-batteries checked Oct.
 - 2 blue boxes new batteries in Mar.
 - 2 dummy plugs (in STD ports)
 - 2 shorting plugs
 - RS232 db6k
 - data lead + spare
 - bottle brush
 - manual

Minette Bay Cruise

May 10
CSS/Vector

- May 10 Dave Spear on contract, went into Minette Bay with a whaler and completed a cast at MBO consec # MBO 14 for oxygen and salinity
- this was completed as part of Walter Gretney's Vector cruise to Kitimat arm, May '96.
- Details of this cast were separately logged and submitted to Dario.
- oxygen file 96040014.0xy used picking temperature of 10°C.
0357

CRUISE
NUMBER

9529 / 9604

DAILY LOG
INSTITUTE OF OCEAN SCIENCES
OCEAN PHYSICS

DATE

May 16, 96 —

Book #2
of 2

VESSEL

Various

PROJECT

Minette Bay B.C. Proj.

Cruise 9604

May 17 shipped equipment.

1 grey suitcase box - IO transducer

1 green box - O₂ samples + packing

1 small stacker - O₂ flasks.

1 plywood box - 1100E command unit manual, headset

1 Handeraa box - pinger receiver

1 small stacker - Dell Laptop manual, cables battery + charger etc.

1 small stacker - 1 case salinities
- multi-crimper, + wire cutter

1 small stacker - wet weather gear, oiled sandels
- cellular telephone + cables
- spare Dell battery.

1 large stacker - 1184 #1079 + new battery pack
- 4 large hose clamps
- 1184 manual

- RCM manual

- 8 erased cartridges

- 1 spare set soldered

- Dell battery pack

- Handeraa spares kit

- 2 Handeraa batteries

- Dell computer power supply + cables

- GPS + antenna, mast

cables + manual

- 3m x 3/4" poly + 1" ϕ

+ isolation + 3/4" ϕ

1 small stacker

- supplies

c/w 2 x 1/2" ϕ

4 x 7/16" ϕ

2 lengths 1/2" chain

- 1184 reader + cable

- 1184 spares kit

- dessicant

- 2 new probes + caps

- spare body band + pins

- 2 zeroed DSL's

- DSL reader + cables

- 1 spare 1184 mounting

bracket complete

- paper towel

May 21

1100 - leave I.O.S. for airport + check in
1205 - leave Victoria

1410 - leave Vancouver

1540 - arrive at Digby Is. Airport

1630 - arrive at Prince Rupert Canadian office
- met Uriah
- got baggage + freight
- picked up scrap shackles from CG Base
- picked up equipment from DFO warehouse

1900 - leave Prince Rupert for Kitimat

2130 - arrive Aluminium City Motel check in
+ set up equipment
- check function + replaced batteries
as required of following
STD12 GPS, piggy receiver
I/O command unit, Dell
laptop computer, Dell notebook
computer

- checked over hydro casting equipment
- log keeping.

May 22

- 0730 - leave motel
- 0800 - meet Don, Fred, Hans at booming ground
- load Bull Block, Hans operating, Chris helping
- set up equipment
- 0905 - leave for mooring site

- 0920 - on station mooring MBO-C
- listened with pinger - received strong signal
- 0925 - using ~~IO~~ command unit.

- ranges 88, 89, 92 m
- stopped on station and drifting away.

- 0931 - range 96m
- sent ABFH - received positive response.
- 0932 - sighted on surface

- 0950 - all onboard + disassembled
- set up for CTD + hydro

- 1010 - completed sounding at MBI
128 37.28 54 01.39
- 37m approaching low tide.

- 1020 - completed STD MBO15 to 35 m.
(bottom) on station

- CTD data downloaded

- set up for hydro. MBO15 to 35m

- 1050 - hydro MBO15

Depth % O₂ flask

✓ 35 197 2047

✓ 30 198 2049

✓ 25 199 2051

✓ 20 200 2052

✓ 15 201 2054

✓ 10 202 2055

✓ 5 203 2056

✓ 0 204 2057

- 1145 - cast all completed.

- 1330 - off loaded + back at motel.
- clean equipment

- 1630 - shipped samples to Dario
from Terrace

- 1730 - downloading data + preparing
to 2230 instruments for redeployment.

May 23, 96

Time PDT:

- 0530 - at MK Bay to meet Bull Block
- 0600 - ship arrives after towing barge out of Bay.
 - load and leave for KA station
 - setting upon deck
- 0625 - on station KA for CTD
 - KA016 to bottom 53m
 - 53° 59.154 128° 39.400
 - downloaded data KA016 raw + .rel
 - set up for Hydro KA016
- 0650 - Hydro KA016 to 50m.

Depth.	‰	O ₂
✓ 50	205	2059
✓ 40	206	2060
✓ 30	207	2061
✓ 20	208	2062
✓ 10	209	2063
✓ 5	210	2064
0	211	2065

- 0716 - cast complete - heading into bay before tide gets too low

- 0739 - on the inside with inches to spare
 - set up for CTD / Hydro at MB station.

May 23, 96

- 0740 - on station for MBO17 CTD to 35m.
at 54° 01.350' 128° 37.360'

- 0800 - starting hydro MBO17 to 35m.

	Depth.	‰	O ₂
✓	35	212	2068
		213	
✓	30	214	2069
✓	25	215	2070
✓	20	216	2071
✓	15	217	2072
✓	10	218	2073
✓	5	219	2074
✓	0	220	2075

- 0853 - cast completed and back at
log jetty to set up mooring +
pick up anchor material. ✓

- 0935 - mooring prepared + depart for
site

- 0950 - launched mooring MBO-Δ
at 54° 01.344' 128° 37.375' in 35m water

- 1005 - back at log booms - unloading

- 1100 - back at motel to pack + check out.

- 1230 - left Kitimat

- 1330 - at Terrace Airport shipping
samples O₂, ‰ + computer
- called Tomio

- 1530 - in Prince Rupert warehouse to
pack equipment heading south.

May 23, 96

- 1530 ^{Fi} - rearrange flight time for 1130 hrs
- made reservation to overnight at Crest
- 1700 - shipped equipment by Canadian Air
- 1745 - back at warehouse to organize equipment left at Rupert
- 1900 - checked in at Crest
- log keeping.

May 24, 96

- 0900 - checked in at Canadian airlines waiting to meet Ulrich to return truck + keys
- 1015 - depart P. Rupert for airport.
- 1330 - back at 10.5
- luggage lost but recovered by end of day.

May 27, 96

- received returning equipment + demobilized

May Trip Equipment in Report

- 2 scrap shackles
- 1 empty release box
- 1 empty RCM box + RCM7 vac box
- 1 large stacker with foam protectors (2) for Enduro
- 1 large stacker
 - 300 m $\frac{5}{32}$ " wire
 - 100 m $\frac{5}{32}$ " wire
 - spool $3\frac{1}{16}$ " poly.
 - grapple
 - $\frac{1}{10}$ m $\frac{5}{16}$ " mooring line from MBO-A
 - 3 x lengths (100m) 100 lb test monofil
 - 5 assorted lengths $\frac{5}{8}$ " nylon
 - 2 x 30m x $\frac{1}{8}$ " nylon
 - 2' x $\frac{3}{8}$ " chain
 - 1.5' x $\frac{1}{2}$ " chain
 - shackles 1 x $\frac{5}{8}$ " 3 x $\frac{1}{2}$ "
 - 10 x $\frac{7}{16}$ " 3 x smalls
 - 1 x $\frac{1}{2}$ " ss
- 4 x $\frac{5}{32}$ " thimble 1 x 1" round thimble
- $\frac{5}{32}$ " sleeves
- green tarp

- 1 large stacker
 - 2 Niskin bottles
 - 3 messengers
 - 3 sampling tubes
 - hand winch + hardware
 - hydro weight
 - metering sheave
 - salinity labels
 - app. 30 caps + 50 liners
 - spare set O_2 reagent dispensers
 - main set in PVC cases - rinsed
 - 200 ml each NaOH
 - Mn Cl_2
 - Niskin bottle board

- aluminium case
 - STD 12 #474 (needs new batteries)
 - 2 dummy plugs
 - 2 shorting plugs
 - RS232 cable, data cable, + spare
 - 2 blue boxes
 - bottle brush
 - manual

- hand winch mast.

Aug. Minette Bay Trip

Aug. 1 Air Freight

- ① Diver Pinger Receiver
- ② Small grey stacker O₂ flasks
- ③ Large grey stacker.
 - Compaq computer complete
 - IO command unit transducer.
- ④ Small stacker
 - empty case salinities
- ⑤ Large stacker
 - O₂ sample box (green box)
 - GPS mast
 - nico crimp MPGC multi-head
 - wire cutter
- ⑥ Small stacker
 - GPS + antenna + manual + cables
 - D cells (12)
 - C cells (8)
 - AA cells (24)
 - 9 volt. (12)
- ⑦ Interocean Deck Unit.
 - command unit + cables + manual + headset
- ⑧ small stacker
 - weather gear
- ⑨ large stacker
 - small stacker
 - Eudoro spares
 - cartridge reader.
 - cell phone + parts
 - DSU reader + cables
 - computer spare battery.
- ⑩ small stacker
 - consumables
- ⑪ tool box

- shipped Aug. 2, 96 Canadian Air
way bill # 018-54772093.

Aug 6 96

- 1200 T. Luszcz to Victoria Airport to check in
- 1305 depart Victoria
- 1410 depart Vancouver
- 1630 arrive Prince Rupert taxi Canadian office
 - meet Uriah
 - pick up air freight + luggage
 - pick up scrap shackles from C&B Base
 - to warehouse to pick up equipment there
 - sort + load truck

- 1800 - depart Prince Rupert

- 2100 - arrive Kitimat + check in Aluminium City Hotel
- 2100 - prepare equipment for next day
- 2400 - called Don to set up days work.

Aug 7, 96

- 0800 - pack + leave motel
- flat calm overcast, drizzle in morning
- meet Don - load Ball Block + setup
- on mooring site ready for recovery

- tide is very low we can't get to outside station today at all

- complete inside station today

- 0920 - range 42 m 38 m 52 m erratic ranges
- ranges 73 m 74 m 77 m 78 m good ranges

- 0922 - send release command ABFH

- received positive response

- mooring sited on surface app. 60m astern.

- 0943 - mooring recovered + disassembled

- fouling minimal

- 0954 - completed STD MBO18 at station
- MB1 54 01.39' 128° 37.28' to 36 m depth (counter)
- files MBO18, rel MBO18, raw
- data looks reasonable very fresh water in upper 10 m

- 1009 - repeat STD MBO19 at station MB1
- same location to 36 m by counter
- files MBO19, rel MBO19, raw

Aug 7 96 cont'd

- 1043 - Hydro MB019 to 35 m.

<u>Depth</u>	<u>O₂</u>	<u>%</u>
✓ 35	2068	221 ✓
	2065	222 ✓
✓ 30	2069	223 ✓
	2070	224 ✓
✓ 25	2074	225 ✓
	2073	226 ✓
✓ 20	2063	227 ✓
	2064	228 ✓
✓ 15	2071	229 ✓
	2072	230 ✓
✓ 10	2075	231 ✓
	2062	232 ✓
5	2059	233 ✓
	2060	234 ✓
0	2061	235 ✓
	2055	236 ✓

- 1150 - cast completed head into jetty.

- 1300 - finished off loading - head for motel
- wash up equipment
- down load data
- RCM7 record good 22614 data words
- both Enderco instruments gave good data

- 1900 - shipped samples + data to Victoria by Canadian Air Freight
OK - 54806544.

- Don takes Bull Block to MK Bay on evening high tide approx 2100-2200 hrs.
- I will meet him there next morning to complete KA station

- 2000 - complete log keeping at motel.

Aug 08

- 0800 - depart motel

- 0830
- meet Don + Bull Block at MK Bay
 - 1-2 ft chop white caps forming wind 15-20 knots.
 - load equipment.
 - on site KA to ch const.
 - setup CTD

- 0845 - completed CTD KA020 to 67m depth at $53^{\circ}59.14'$ $128^{\circ}39.34'$

- 0907
- data down loaded KA020, rel + raw
 - setup hydro cast KA020.

- 0916 - hydro cast KA020 to 55m at same location

Depth	Oxygen	%
✓ 55	2049	237 244
✓ 40	2051	238
✓ 30	2057	239
✓ 20	2056	240
✓ 10	2047	241
✓ 5	2054	242
0	2052	243

- 1030 - all onboard and heaving for jetty

- 1100 - demob'd Bull Block and offloaded returning to motel to pack up

- 1400 - leave for Terrace

- 1530 - ship salinities, oxygens data + Compaq computer by Canadian 018-548-15003 - depart for Kitimat

- 1830 - at ware house packing up returning freight

- 2030 - check in at Crest - log keeping + writing labels

Aug. 09

- 0800 - at warehouse labelling and load
for shipping
- contacted Uriah.
- 0900 - consign air freight south.
- 0930 - check in
- 1030 - board buses
- 1415 - arrive Victoria - flight delayed in
Vancouver
- 1445 - at I.O.S.