Mooring Deployment Record

Project Name:	SoG AMP		
Project Area:	Strait of Georgia		
Mooring Name:	SOGN-I	Station Name	SoGN
Latitude:	49° 50.200' N	Longitude:	124° 52.144' W
Depth:	330 → 327m datum	Tide:	+3m @ Campbell River
Mag. Declination:		Time Zone:	UTC
Date:	30/10/2010	Time:	2357
Remarks:			

Recovery

Date:	Apr. 5, 2011	Time:	1700 UTC
Remarks:			

Instruments

Type	Serial #	Depth	Time In:	Time Out	Notes
Bater	718406	45			
SBE19+	6027				
RCM11	564				
SBE16	4196	145			
WH300	3694	280			
SBE37	3501	320			

Releases

Rag

Release	**Serial #**	**Range:**	**Release**	**Freq**	**Other**
AR 861	887	169C	1655	12 kHz	1649

Pingers

Pinger	Serial #	Voltage	Freq
	8066	21.2 V$_{100}$	27
	7419	21.2 V$_{100}$	27

Flotation

Type	Serial #	Size	Colour	Type	Serial #	Size	Colour
SB30	3007	30	Y				
SB30	3012	30	Y				
SS 28	M232	28	Y				
SS 28	208	28	Y				

Missing Logs

SBE19 6027

RCM 11 Deployment Sheet

Instrument Serial #: 564 # of Channels: 6 Recording Interval: 30 (Burst mode)
Project: SOCN - ~~SF~~ I DSU ID: _____

Pressure Sensor:
Type: ~~3815~~ 4017D
Range: ~~7000~~ kPa 20,000 kPA
Serial #: 125

Conductivity Cell:
Type: 3819
Range: 24-38 mS
Serial #: _____

Temperature Sensor:
Type: 3621
Range: ~~Arctic~~ Low ← See previous Deployment.
Serial #: _____

Doppler Current Sensor:
Type: SR10
Serial #: 724

MAX DEPTH: 736m (7000kPa pressure sensor)

Channel #	Reading1	Reading 2	Last Cal
1. ~~Reference~~	757		
2. ~~Temperature~~	0		
3. ~~Conductivity~~	0		
4. ~~Extemp/pressure~~	894		
5. ~~Direction~~	0		
6. ~~Speed~~	5		
Date: Oct 30, 2010 Time:	2200 UTC		

Channel #	Reading1	Reading 2	Last Cal
1. Reference			
2. Temperature			
3. Conductivity			
4. Extemp/pressure			
5. Direction			
6. Speed			
Date: _____ Time:			

TIME IN WATER: _____ DATE: Oct 30, 2010
BAT VOLTAGE: 9.60 ON DEPLOYMENT
CRUISE ID: 2010-73 DEPLOYED
TECHNICIAN: cp

TIME OUT WATER: _____ DATE: _____
BAT VOLTAGE: _____ ON RECOVERY
CRUISE ID: _____ RECOVERED
TECHNICIAN: _____

NOTES:

PST

```
S>ds
SeacatPlus V 1.3a  SERIAL NO. 4196    30 Oct 2010  11:18:08
vbatt = 14.0, vlith =  8.6, ioper =  61.8 ma, ipump =  41.3 ma,
iext01 =   4.8 ma,
status = not logging
sample interval = 4500 seconds, number of measurements per sample = 4
samples = 0, free = 493447
mode = moored, run pump during sample, delay before sampling = 35.0 seconds
transmit real-time = no
battery type = ALKALINE, battery cutoff =  7.5 volts
pressure sensor = strain gauge, range = 1450.0
SBE 38 = no, Gas Tension Device = no
Ext Volt 0 = yes, Ext Volt 1 = no, Ext Volt 2 = no, Ext Volt 3 = no
echo commands = yes
output format = raw HEX
S>startddmmyy=301010
S>starthhmmss=200000
start time = 30 Oct 2010  20:00:00
send startlater command to start delayed logging
S>startlater
start time = 30 Oct 2010 20:00:00
```

RDI 75/150/300/600 kHz Long Ranger/Workhorse

Project: SOGN-I
Serial Number: 3694
Cruise ID: 2010-73
Platform: Vector
Station: SOGN
Deployment Date: Oct 30, 2010
Recovery Date: +/- 165 days
Position:
Depth:

Parameters:
Ensemble Interval: 15 mins
Bin Size: 2
Number of Pings: 200
Number of Bins: 25
Ambiguity Velocity: 0.26 cm/s
Water profiling Mode: WBO
Time: UTC
Start Time: 2300 UTC @ Oct 30, 2010
Power: 2 x BATS
Battery Type: 6051

sognh.scl

```
>>>>>> Function starting 10/30/10 21:35:56 >>>>>>

[BREAK Wakeup A]
WorkHorse Broadband ADCP Version 16.21
RD Instruments (c) 1996-2002
All Rights Reserved.
>TS101030213558
>CZ

Powering Down

>>>>>> Function starting 10/30/10 21:36:03 >>>>>>

[BREAK Wakeup A]
WorkHorse Broadband ADCP Version 16.21
RD Instruments (c) 1996-2002
All Rights Reserved.
>DEPLOY?
Deployment Commands:
RE ---------------------- Recorder ErASE
RN ---------------------- Set Deployment Name

WD = 111 100 000 -------- Data Out (Vel,Cor,Amp; PG,St,P0; P1,P2,P3)
WF = 0088 --------------- Blank After Transmit (cm)
WN = 023 ---------------- Number of depth cells (1-128)
WP = 00058 -------------- Pings per Ensemble (0-16384)
WS = 0200 --------------- Depth Cell Size (cm)
WV = 175 ---------------- Mode 1 Ambiguity Vel (cm/s radial)

TE = 00:02:00.00 -------- Time per Ensemble (hrs:min:sec.sec/100)
TF = **/**/**,**:**:** --- Time of First Ping (yr/mon/day,hour:min:sec)
TP = 00:02.00 ----------- Time per Ping (min:sec.sec/100)
TS = 10/10/30,21:36:05 --- Time Set (yr/mon/day,hour:min:sec)

EA = +00000 ------------- Heading Alignment (1/100 deg)
EB = +00000 ------------- Heading Bias (1/100 deg)
ED = 03250 -------------- Transducer Depth (0 - 65535 dm)
ES = 30 ----------------- Salinity (0-40 pp thousand)
EX = 11111 -------------- Coord Transform (Xform: Type,Tilts,3 Bm,Map)
EZ = 1111101 ------------ Sensor Source (C,D,H,P,R,S,T)

Press any key to continue

CF = 11101 -------------- Flow Ctrl (EnsCyc;PngCyc;Binry;Ser;Rec)
CK ---------------------- Keep Parameters as USER Defaults
CR # -------------------- Retrieve Parameters (0 = USER, 1 = FACTORY)
CS ---------------------- Start Deployment

>SYSTEM?
System Control, Data Recovery and Testing Commands:
AC ---------------------- Output Active Fluxgate & Tilt Calibration data
AF ---------------------- Field calibrate to remove hard/soft iron error
AR ---------------------- Restore factory fluxgate calibration data
AX ---------------------- Examine compass performance
AZ ---------------------- Zero pressure reading

CB = 811 ---------------- Serial Port Control (Baud; Par; Stop)
CP # -------------------- Polled Mode (0 = NORMAL, 1 = POLLED)
CZ  --------------------- Power Down Instrument

FC ---------------------- Clear Fault Log
FD ---------------------- Display Fault Log
```

```
OL ---------------------- Display Features List

PA ---------------------- Pre-Deployment Tests
PC1 --------------------- Beam Continuity
PC2 --------------------- Sensor Data
PS0 --------------------- System Configuration
PS3 --------------------- Transformation Matrices

RR ---------------------- Recorder Directory
Press any key to continue

RF ---------------------- Recorder Space used/free (bytes)
RY ---------------------- Upload Recorder Files to Host

>TS?
TS = 10/10/30,21:36:16 --- Time Set (yr/mon/day,hour:min:sec)
>PS0
  Instrument S/N:  3694
       Frequency:  614400 HZ
   Configuration:  4 BEAM, JANUS
     Match Layer:  10
      Beam Angle:  20 DEGREES
    Beam Pattern:  CONVEX
     Orientation:  UP
       Sensor(s):  HEADING  TILT 1  TILT 2  TEMPERATURE
Temp Sens Offset:  -0.28 degrees C

    CPU Firmware:  16.21 [0]
   Boot Code Ver:  Required:  1.13   Actual:  1.13
    DEMOD #1 Ver:  ad48, Type:  1f
    DEMOD #2 Ver:  ad48, Type:  1f
    PWRTIMG  Ver:  85d3, Type:   5

Board Serial Number Data:
   C0  00 00 02 FB B2 24  09 CPU727-2000-00H
   77  00 00 02 FB 7B 6A  09 DSP727-2001-03G
   A4  00 00 02 FB 8C 65  09 PIO727-3000-03C
   F4  00 00 02 FB 8E 9D  09 REC727-1000-03E
>PA

PRE-DEPLOYMENT TESTS

CPU TESTS:
  RTC.....................................PASS
  RAM.....................................PASS
  ROM.....................................PASS
RECORDER TESTS:
  PC Card #0..............................NOT DETECTED
  PC Card #1..............................DETECTED
    Card Detect...........................PASS
    Communication.........................PASS
    DOS Structure.........................PASS
    Sector Test (short)...................PASS
DSP TESTS:
  Timing RAM..............................PASS
  Demod  RAM..............................PASS
  Demod  REG..............................PASS
  FIFOs...................................PASS
SYSTEM TESTS:
  XILINX Interrupts... IRQ3  IRQ3  IRQ3 ...PASS
  Receive Loop-Back.......................PASS
  Wide Bandwidth..........................PASS
```

```
  Narrow Bandwidth.........................PASS
  RSSI Filter..............................PASS
  Transmit.................................PASS
SENSOR TESTS:
  H/W Operation.........................***FAIL***
>PC2

Press any key to quit sensor display ...

Heading   Pitch    Roll   Up/Down    Attitude Temp   Ambient Temp   PRESSURE
206.30ø  27.35ø  -1.12ø     Up          16.92øC         17.68øC        0.0 kPa
205.36ø  27.35ø  -0.28ø     Up          16.93øC         17.67øC        0.0 kPa
205.22ø  27.35ø   0.82ø     Up          16.95øC         17.66øC        0.0 kPa
205.06ø  27.34ø   1.98ø     Up          16.95øC         17.68øC        0.0 kPa
206.15ø  27.35ø   1.11ø     Up          16.94øC         17.70øC        0.0 kPa
207.85ø  27.36ø  -1.47ø     Up          16.94øC         17.68øC        0.0 kPa
206.77ø  27.36ø  -1.25ø     Up          16.95øC         17.68øC        0.0 kPa
205.29ø  27.35ø  -0.31ø     Up          16.95øC         17.68øC        0.0 kPa
205.73ø  27.36ø  -1.20ø     Up          16.95øC         17.68øC        0.0 kPa
205.75ø  27.35ø   0.15ø     Up          16.93øC         17.68øC        0.0 kPa
205.81ø  27.35ø   0.41ø     Up          16.94øC         17.68øC        0.0 kPa
208.06ø  27.36ø  -2.89ø     Up          16.95øC         17.69øC        0.0 kPa

>RS
RS = 000,242 ------------ REC SPACE USED (MB), FREE (MB)

>PC1


BEAM CONTINUITY TEST

When prompted to do so, vigorously rub the selected
beam's face.

If a beam does not PASS the test, send any character to
the ADCP to automatically select the next beam.

Collecting Statistical Data...
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
```

```
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  47  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41
  48  48  46  41

Rub Beam 1 = PASS
Rub Beam 2 = PASS
Rub Beam 3 = PASS
Rub Beam 4 = PASS

>CZ

Powering Down

>>>>>> Function starting 10/30/10 21:38:51 >>>>>>

[BREAK Wakeup A]
WorkHorse Broadband ADCP Version 16.21
RD Instruments (c) 1996-2002
All Rights Reserved.
>CR1
[Parameters set to FACTORY defaults]
>CF11101
>EA0
>EB0
>ED2850
>ES32
```

```
>EX11111
>EZ1111111
>WB0
>WD111100000
>WF88
>WN25
>WP200
>WS200
>WV170
>TE00:15:00.00
>TP00:04.50
>TF10/10/30 23:00:00
>CK
[Parameters saved as USER defaults]
>The command CS is not allowed in this command file.  It has been ignored.
>The following commands are generated by this program:
>CF?
CF = 11101 --------------- Flow Ctrl (EnsCyc;PngCyc;Binry;Ser;Rec)
>CF11101
>RN sognh
>cs
```

MicroCat SBE 37 Deployment Sheet

INSTRUMENT

Serial Number: [redacted] 3501 | Sensors (C,T,P): CTP

Firmware Version: 2.6b | Depth Rating:

PARAMETERS

SampleNum: 0 | Storetime: Y

Interval: 1200 | Syncmode: N

Navg/Ncycles: 4 | Txrealtime: N

Reference pressure*: — | OutputSV: [redacted] Y

Time Zone: UTC | OutputSal: Y

Start: OCT 30, 2010 @ 2300 UTC

*only needed if there is no pressure sensor for the salinity calculation

DEPLOYMENT

Station: SOAN-I | Cruise Number: 2010-73

Latitude: | Water Depth:

Longitude: | Instrument Depth:

Time and Date in Water:

Comments: clm cage with Nortek + RBR

Completed by: Date: uCat-dep.xls SFM

Mooring: SOGN-I

uCat - 3501-

Battery Calculations:
Note: 10 min sampling with a pump lasts about 220 days.
Sampling Time:
3.33s+(2.27*(NAVG-1))
3.33s+(2.27*(4-1))=10.14s

Example 1: A standard MicroCAT (no external power option) with pressure sensor is set up to sample autonomously every 10 minutes (6 samples/hour), taking 4 measurement per sample (**NAVG=4**). How long can it be deployed?

Sampling time = 3.33 seconds + 2.27 seconds * (**NAVG** - 1) = 10.14 seconds

Sampling current consumption = 0.020 amps * 10.14 seconds = 0.2 amp-seconds/sample
In 1 hour, sampling current consumption = 6 * 0.2 amp-seconds/sample = 1.2 amp-seconds/hour
Pump current consumption = 0.13 amp-seconds/pulse
In 1 hour, pump current consumption = 6 * 0.13 amp-seconds/pulse = 0.78 amp-seconds/hour
Quiescent current 10 microamps = 0.01 mA
In 1 hour, quiescent current consumption = 0.01 mA * 3600 seconds/hour = 0.036 amp-seconds/hour
Total current consumption / hour = 1.2 + 0.78 + 0.036 = 2.02 amp-seconds/hour
Capacity = (5 amp-hours * 3600 seconds/hr) / (2.02 amp-seconds/hour) = 8910 hours = 371 days = 1.02 years
Number of samples = 8910 hours * 6 samples/hour = 53460 samples

Command Summary:
DDMMYY=311010
HHMMSS=200000 //(UTC)
OUTPUTSAL=Y
OUTPUTSV=Y
FORMAT=1
NAVG=4
PUMPINSTALLED=Y
SAMPLENUM=0
INTERVAL=1200 (NOTE: 10 min sampling with a pump lasts about 220 days so use 15 mins)
STORETIME=Y

TXREALTIME=N
STARTDDMMYY=311010
STARTHHMMSS=200000
STARTLATER

```
ds
SBE37-SM V 2.6b  SERIAL NO. 3501    01 Jan 1980  00:00:42
logging not started
sample interval = 900 seconds
samplenumber = 8150, free = 182500
do not transmit real-time data
output salinity with each sample
output sound velocity with each sample
store time with each sample
number of samples to average = 4
serial sync mode disabled
wait time after serial sync sampling = 30 seconds
internal pump not installed
temperature = 17.15 deg C
S>hhm□\□□□dd,□mmyy=1010□□□□30-□□01010
S>hhmmss=201645
S>ds
SBE37-SM V 2.6b  SERIAL NO. 3501    30 Oct 2010  20:16:46
logging not started
sample interval = 900 seconds
samplenumber = 8150, free = 182500
do not transmit real-time data
output salinity with each sample
output sound velocity with each sample
store time with each sample
number of samples to average = 4
serial sync mode disabled
wait time after serial sync sampling = 30 seconds
internal pump not installed
temperature = 17.03 deg C
S>
S>dc
SBE37-SM V 2.6b  3501
temperature:  23-jun-10
    TA0 = -2.570093e-04
    TA1 = 3.163742e-04
    TA2 = -5.067856e-06
    TA3 = 2.206592e-07
conductivity:  23-jun-10
    G = -1.041660e+00
    H = 1.411480e-01
    I = -1.117962e-04
    J = 3.188923e-05
    CPCOR = -9.570000e-08
    CTCOR = 3.250000e-06
    WBOTC = -1.468397e-05
pressure S/N 4015, range = 1450 psia:  22-jun-10
    PA0 = -4.430122e-01
    PA1 = 6.816384e-02
    PA2 = -3.741217e-09
    PTCA0 = -2.036466e+02
    PTCA1 = -2.722290e-01
    PTCA2 = -4.347059e-05
    PTCSB0 = 2.503588e+01
    PTCSB1 = 7.750000e-04
    PTCSB2 = 0.000000e+00
    POFFSET = 0.000000e+00
rtc:  23-jun-10
    RTCA0 = 9.999833e-01
    RTCA1 = 1.636620e-06
    RTCA2 = -3.073112e-08
S>outsal=y
?cmd S>sout□□□□outputsal=y
```

```
S>outputsv=y
S>format=1
S>navg=4
S>pumpinstalled=n
S>samplenum=0
S>interval=1200
S>storetime=y
S>txrealtime=n
S>ds
SBE37-SM V 2.6b  SERIAL NO. 3501    30 Oct 2010  20:20:50
logging not started
sample interval = 1200 seconds
samplenumber = 0, free = 190650
do not transmit real-time data
output salinity with each sample
output sound velocity with each sample
store time with each sample
number of samples to average = 4
serial sync mode disabled
wait time after serial sync sampling = 30 seconds
internal pump not installed
temperature = 17.24 deg C
S>tart□□□□startddmmyy=301010
S>starthhmmss=230000
start time = 30 Oct 2010  23:00:00
S>startlater
start time = 30 Oct 2010  23:00:00
  SBE 37-SM
S>ds
SBE37-SM V 2.6b  SERIAL NO. 3501    30 Oct 2010  20:21:07
not logging: waiting to start at  30 Oct 2010  23:00:00
sample interval = 1200 seconds
samplenumber = 0, free = 190650
do not transmit real-time data
output salinity with each sample
output sound velocity with each sample
store time with each sample
number of samples to average = 4
serial sync mode disabled
wait time after serial sync sampling = 30 seconds
internal pump not installed
temperature = 17.25 deg C
S>
```