

RDI 75kHz Long Ranger Deployment

Project: Endeavour Ridge "Sea Breeze-Fluxmeter" Year 3

Serial Number: 3808

Cruise: 2005-16

Platform: CCGS John P. Tully (Capt. John Anderson)

Station: ER05 N2

Deployment Date: 0902, 22 July 2005 PDT

Position: 47° 57.528' N, 129° 05.613' W

Depth on Sounder: 2150+/-30m

Recovery Date: July 2006 (proposed)

Deployed 6 m above bottom with Aanderaa CM 19m above and microcat below

Parameters

Burst Sampling Interval	01:00:00.00
Ensemble Interval	00:00:01.00
Bin Size	8m
Number of Pings	1
Number of Ensembles per Burst	48
Number of Bins	64
Observations	radial beam velocity, echo intensity correlation, pitch, roll, heading, battery
Ambiguity Velocity	125cm/s
Water Profiling Mode	Mode 1, Narrow Band
Time Zone	UTC
Start Time	1800, 21 July 2005 UTC
Power	High

Predeployment tests 3808

[BREAK Wakeup A]

WorkHorse Broadband ADCP Version 16.21

RD Instruments (c) 1996-2002

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>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 = 0704 ----- Blank After Transmit (cm)

WN = 064 ----- Number of depth cells (1-128)

WP = 00050 ----- Pings per Ensemble (0-16384)

WS = 0800 ----- Depth Cell Size (cm)

WV = 125 ----- Mode 1 Ambiguity Vel (cm/s radial)

BP = 000 ----- Bottom Track Pings per Ensemble

TE = 01:00:00.00 ----- Time per Ensemble (hrs:min:sec.sec/100)

TF = **/**/**, **: **: ** --- Time of First Ping (yr/mon/day, hour:min:sec)

TP = 00:10.00 ----- Time per Ping (min:sec.sec/100)

TS = 05/07/20, 21:59:12 --- Time Set (yr/mon/day, hour:min:sec)

EA = +00000 ----- Heading Alignment (1/100 deg)

EB = +00000 ----- Heading Bias (1/100 deg)

ED = 21000 ----- Transducer Depth (0 - 65535 dm)

ES = 35 ----- Salinity (0-40 pp thousand)

EX = 11111 ----- Coord Transform (Xform: Type,Tilts,3 Bm,Map)

EZ = 1111111 ----- Sensor Source (C,D,H,P,R,S,T)

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

>TS?
TS = 05/07/20,21:59:55 --- Time Set (yr/mon/day,hour:min:sec)
>PS0
  Instrument S/N: 3808
    Frequency: 76800 HZ
  Configuration: 4 BEAM, JANUS
    Match Layer: 10
    Beam Angle: 20 DEGREES
  Beam Pattern: CONVEX
  Orientation: DOWN
    Sensor(s): HEADING TILT 1 TILT 2 DEPTH TEMPERATURE
PRESSURE
Pressure Sens Coefficients:
    c3 = +4.372728E-11
    c2 = -1.109075E-06
    c1 = +1.026994E+00
    Offset = +4.820955E+01

Temp Sens Offset: -0.18 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:
  E5 00 00 02 48 B1 D4 09 HPI727-3007-00A
  68 00 00 02 FB AC F2 09 TUN727-1005-06X
  D5 00 00 02 FB AE 3A 09 DSP727-2001-06F
  11 00 00 02 FB 89 AE 09 REC727-1004-06X
  25 00 00 02 48 B2 09 09 HPA727-3009-00A
  CC 00 00 02 FB 8D 4B 09 CPU727-2000-00H
>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.....***FAIL***
    Narrow Bandwidth.....***FAIL***
    RSSI Filter.....PASS
    Transmit.....***FAIL***
SENSOR TESTS:
    H/W Operation.....PASS
>PC2

```

Press any key to quit sensor display ...

```

Heading    Pitch    Roll    Up/Down    Attitude Temp    Ambient Temp
PRESSURE
125.600    2.760    3.470    Down        19.810C          20.030C
13.7 kPa
>
[BREAK Wakeup A]
WorkHorse Broadband ADCP Version 16.21
RD Instruments (c) 1996-2002
All Rights Reserved.
>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...
  21  26  24  24

```

```

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

```

>CZ

Powering Down

TIME SET TO UTC

>>>>> Function starting 07/21/05 06:12:32 >>>>>

```
[BREAK Wakeup A]
WorkHorse Broadband ADCP Version 16.21
RD Instruments (c) 1996-2002
All Rights Reserved.
>TS050721061236
>CZ
```

Powering Down

Deployment 3808

```
[BREAK Wakeup A]
WorkHorse Broadband ADCP Version 16.21
RD Instruments (c) 1996-2002
All Rights Reserved.
>ps0
  Instrument S/N: 3808
    Frequency: 76800 HZ
  Configuration: 4 BEAM, JANUS
    Match Layer: 10
    Beam Angle: 20 DEGREES
  Beam Pattern: CONVEX
  Orientation: DOWN
  Sensor(s): HEADING TILT 1 TILT 2 DEPTH TEMPERATURE
```

PRESSURE

Pressure Sens Coefficients:

```
  c3 = +4.372728E-11
  c2 = -1.109075E-06
  c1 = +1.026994E+00
  Offset = +4.888230E+01
```

Temp Sens Offset: -0.18 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:

```
  E5 00 00 02 48 B1 D4 09 HPI727-3007-00A
  68 00 00 02 FB AC F2 09 TUN727-1005-06X
  D5 00 00 02 FB AE 3A 09 DSP727-2001-06F
  11 00 00 02 FB 89 AE 09 REC727-1004-06X
  25 00 00 02 48 B2 09 09 HPA727-3009-00A
  CC 00 00 02 FB 8D 4B 09 CPU727-2000-00H
```

>experton

Expert Mode is ON

>a?

Available Commands:

AC ----- Output Active Fluxgate & Tilt Calibration Data

AD ----- Display Calibration Data

```

AF ----- Field Calibrate to remove Hard and/or Soft
Iron Error
AR ----- Restore Factory Fluxgate Calibration data:
           make factory the active calibration data
AX ----- Examine Compass Performance
AZ 48.882297 ----- Zero pressure reading
A? ----- Display Public Sensor Commands

```

>az

Pressure Offset Updated in NVRAM.

>az?

46.340231

>c?

```

CB = 811 ----- Serial Port Control (Baud [8=115200]; Par;
Stop)
CC = 000 000 000 ----- Choose External Devices (x;x;x x;x;x
x;x;SBMC)
CD = 000 000 000 ----- Serial Data Out (Vel;Cor;Amp PG;St;P0
P1;P2;P3)
CE ----- Retrieve Last Ensemble
CF = 11101 ----- Flow Ctrl (EnsCyc;PngCyc;Binry;Ser;Rec)
CH = 0 ----- Suppress Banner
CI = 000 ----- Instrument ID (0-255)
CK ----- Keep Parameters as USER Defaults
CL = 1 ----- Sleep Enable (0 = Disable, 1 = Enable)
CM = 0 ----- RS-232 Sync Master (0 = OFF, 1 = ON)
CN = 0 ----- Save NVRAM to recorder (0 = ON, 1 = OFF)
CP = 0 ----- PolledMode (1=ON, 0=OFF; BREAK resets)
CQ = 255 ----- Xmt Power (0=Low, 255=High)
CR # ----- Retrieve Parameters (0 = USER, 1 = FACTORY)
CS ----- Go (Start Pinging)
CX = 0 ----- Trigger Enable (0 = OFF, 1 = ON)
CY # ----- Error Status Word (0=Clear, 1=Display)
CZ ----- Power Down Instrument

```

>e?

```

EA = +00000 ----- Heading Alignment (1/100 deg)
EB = +00000 ----- Heading Bias (1/100 deg)
EC = 1500 ----- Speed Of Sound (m/s)
ED = 21000 ----- Transducer Depth (0 - 65535 dm)
EH = 00000 ----- Heading (1/100 deg)
EP = +0000 ----- Tilt 1 Sensor (1/100 deg)
ER = +0000 ----- Tilt 2 Sensor (1/100 deg)
ES = 35 ----- Salinity (0-40 pp thousand)
ET = +0250 ----- Temperature (1/100 deg Celsius)
EX = 00000 ----- Coord Transform (Xform:Type; Tilts; 3Bm;
Map)
EZ = 1111111 ----- Sensor Source (C;D;H;P;R;S;T)

```

>rn?

Current deployment name = 3808_

>t?

```

TB = 01:00:00.00 ----- Time per Burst (hrs:min:sec.sec/100)
TC = 00001 ----- Ensembles Per Burst (0-65535)

```

```

TE = 00:00:01.00 ----- Time per Ensemble (hrs:min:sec.sec/100)
TF = **/**/**, **:**:** --- Time of First Ping (yr/mon/day, hour:min:sec)
TG = ***/**/**, **:**:** - Time of First Ping (CCYY/MM/DD, hh:mm:ss)
TP = 00:00.20 ----- Time per Ping (min:sec.sec/100)
TS = 05/07/21, 07:18:24 --- Time Set (yr/mon/day, hour:min:sec)
TT = 2005/07/21, 07:18:24 - Time Set (CCYY/MM/DD, hh:mm:ss)
>tc48
>tf05/07/21, 08:00:00
>w?
WA = 050 ----- False Target Threshold (Max) (0-255 counts)
WB = 1 ----- Bandwidth Control (0=Wid,1=Nar)
WC = 064 ----- Correlation Threshold
WD = 111 100 000 ----- Data Out (Vel;Cor;Amp PG;St;P0 P1;P2;P3)
WE = 2000 ----- Error Velocity Threshold (0-5000 mm/s)
WF = 0704 ----- Blank After Transmit (cm)
WI = 0 ----- Clip Data Past Bottom (0=OFF,1=ON)
WJ = 1 ----- Rcvr Gain Select (0=Low,1=High)
WK = 0000 ----- Mode 11 Depth Cell Size Override (cm) [0=Use
WS]
WL = 001,005 ----- Water Reference Layer: Begin Cell (0=OFF),
End Cell
WM = 01 ----- Profiling Mode (1,5,8,11)
WN = 064 ----- Number of depth cells (1-255)
WP = 00001 ----- Pings per Ensemble (0-16384)
WQ = 0 ----- Sample Ambient Sound (0=OFF,1=ON)
WS = 0800 ----- Depth Cell Size (cm)
WT = 0000 ----- Transmit Length (cm) [0 = Bin Length]
WU = 0 ----- Ping Weighting (0=Box,1=Triangle)
WV = 125 ----- Mode 1 Ambiguity Vel (cm/s radial)
WW = 004 ----- Mode 1 Pings before Mode 4 Re-acquire
WX = 999 ----- Mode 4 Ambiguity Vel (cm/s radial)
WZ = 010 ----- Mode 5 Ambiguity Velocity (cm/s radial)
>ck
[Parameters saved as USER defaults]
>cs

```

Final Deployment 3808 21 July 2005

```

[BREAK Wakeup A]
WorkHorse Broadband ADCP Version 16.21
RD Instruments (c) 1996-2002
All Rights Reserved.
>PS0
Instrument S/N: 3808
Frequency: 76800 HZ
Configuration: 4 BEAM, JANUS
Match Layer: 10
Beam Angle: 20 DEGREES
Beam Pattern: CONVEX
Orientation: DOWN
Sensor(s): HEADING TILT 1 TILT 2 DEPTH TEMPERATURE
PRESSURE
Pressure Sens Coefficients:
c3 = +4.372728E-11
c2 = -1.109075E-06

```

c1 = +1.026994E+00
Offset = +4.634023E+01

Temp Sens Offset: -0.18 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:

E5 00 00 02 48 B1 D4 09 HPI727-3007-00A
68 00 00 02 FB AC F2 09 TUN727-1005-06X
D5 00 00 02 FB AE 3A 09 DSP727-2001-06F
11 00 00 02 FB 89 AE 09 REC727-1004-06X
25 00 00 02 48 B2 09 09 HPA727-3009-00A
CC 00 00 02 FB 8D 4B 09 CPU727-2000-00H

>EXPERTON

Expert Mode is ON

>A?

Available Commands:

AC ----- Output Active Fluxgate & Tilt Calibration
Data
AD ----- Display Calibration Data
AF ----- Field Calibrate to remove Hard and/or Soft
Iron Error
AR ----- Restore Factory Fluxgate Calibration data:
make factory the active calibration data
AX ----- Examine Compass Performance
AZ 46.340231 ----- Zero pressure reading
A? ----- Display Public Sensor Commands

>AZ

Pressure Offset Updated in NVRAM.

>AZ?

51.218954

>C?

CB = 811 ----- Serial Port Control (Baud [8=115200]; Par;
Stop)
CC = 000 000 000 ----- Choose External Devices (x;x;x x;x;x
x;x;SBMC)
CD = 000 000 000 ----- Serial Data Out (Vel;Cor;Amp PG;St;P0
P1;P2;P3)
CE ----- Retrieve Last Ensemble
CF = 11101 ----- Flow Ctrl (EnsCyc;PngCyc;Binry;Ser;Rec)
CH = 0 ----- Suppress Banner
CI = 000 ----- Instrument ID (0-255)
CK ----- Keep Parameters as USER Defaults
CL = 1 ----- Sleep Enable (0 = Disable, 1 = Enable)
CM = 0 ----- RS-232 Sync Master (0 = OFF, 1 = ON)
CN = 0 ----- Save NVRAM to recorder (0 = ON, 1 = OFF)
CP = 0 ----- PolledMode (1=ON, 0=OFF; BREAK resets)


```

CQ = 255 ----- Xmt Power (0=Low, 255=High)
CR # ----- Retrieve Parameters (0 = USER, 1 = FACTORY)
CS ----- Go (Start Pinging)
CX = 0 ----- Trigger Enable (0 = OFF, 1 = ON)
CY # ----- Error Status Word (0=Clear, 1=Display)
CZ ----- Power Down Instrument
>E?
EA = +00000 ----- Heading Alignment (1/100 deg)
EB = +00000 ----- Heading Bias (1/100 deg)
EC = 1500 ----- Speed Of Sound (m/s)
ED = 21000 ----- Transducer Depth (0 - 65535 dm)
EH = 00000 ----- Heading (1/100 deg)
EP = +0000 ----- Tilt 1 Sensor (1/100 deg)
ER = +0000 ----- Tilt 2 Sensor (1/100 deg)
ES = 35 ----- Salinity (0-40 pp thousand)
ET = +0250 ----- Temperature (1/100 deg Celsius)
EX = 00000 ----- Coord Transform (Xform:Type; Tilts; 3Bm;
Map)
EZ = 1111111 ----- Sensor Source (C;D;H;P;R;S;T)
>RR?

```

Recorder Directory:

Volume serial number for device #1 is b09b-6bcf

```

3808_000 000          9699 07-21-05   7:16:28a r  a [  2]
3808_001 000          693711 07-21-05   5:37:38p r  a [  3]

```

```

Bytes used on device #1 = 703410
Total capacity   = 1034469376 bytes
Total bytes used =      703410 bytes in 2 files
Total bytes free = 1033748480 bytes

```

>RN?

Current deployment name = 3808_

>REErAsE

Must use 'RE ErAsE' or 're ErAsE' to erase recorder!

Recorder not erased.

>RE ErAsE erasing...

Recorder erased.

>rr?

Recorder Directory:

Volume serial number for device #1 is b09b-6bcf

No files found.

```

Bytes used on device #1 = 0
Total capacity   = 1034469376 bytes
Total bytes used =      0 bytes in 0 files
Total bytes free = 1034469376 bytes

```

>t?

```

TB = 01:00:00.00 ----- Time per Burst (hrs:min:sec.sec/100)
TC = 00048 ----- Ensembles Per Burst (0-65535)
TE = 00:00:01.00 ----- Time per Ensemble (hrs:min:sec.sec/100)
TF = **/**/**, **:**:** --- Time of First Ping (yr/mon/day,hour:min:sec)
TG = ****/**/**, **:**:** - Time of First Ping (CCYY/MM/DD,hh:mm:ss)
TP = 00:00.20 ----- Time per Ping (min:sec.sec/100)
TS = 05/07/21,17:43:20 --- Time Set (yr/mon/day,hour:min:sec)
TT = 2005/07/21,17:43:20 - Time Set (CCYY/MM/DD,hh:mm:ss)
>tp00:00.00
>tp?
TP = 00:00.00 ----- Time per Ping (min:sec.sec/100)
>tf05/07/21,18:00:00
>tf ERR 002: NUMERAL EXPECTED
>tf?
TF = 05/07/21,18:00:00 --- Time of First Ping (yr/mon/day,hour:min:sec)
>w?
WA = 050 ----- False Target Threshold (Max) (0-255 counts)
WB = 1 ----- Bandwidth Control (0=Wid,1=Nar)
WC = 064 ----- Correlation Threshold
WD = 111 100 000 ----- Data Out (Vel;Cor;Amp PG;St;P0 P1;P2;P3)
WE = 2000 ----- Error Velocity Threshold (0-5000 mm/s)
WF = 0704 ----- Blank After Transmit (cm)
WI = 0 ----- Clip Data Past Bottom (0=OFF,1=ON)
WJ = 1 ----- Rcvr Gain Select (0=Low,1=High)
WK = 0000 ----- Mode 11 Depth Cell Size Override (cm) [0=Use
WS]
WL = 001,005 ----- Water Reference Layer: Begin Cell (0=OFF),
End Cell
WM = 01 ----- Profiling Mode (1,5,8,11)
WN = 064 ----- Number of depth cells (1-255)
WP = 00001 ----- Pings per Ensemble (0-16384)
WQ = 0 ----- Sample Ambient Sound (0=OFF,1=ON)
WS = 0800 ----- Depth Cell Size (cm)
WT = 0000 ----- Transmit Length (cm) [0 = Bin Length]
WU = 0 ----- Ping Weighting (0=Box,1=Triangle)
WV = 125 ----- Mode 1 Ambiguity Vel (cm/s radial)
WW = 004 ----- Mode 1 Pings before Mode 4 Re-acquire
WX = 999 ----- Mode 4 Ambiguity Vel (cm/s radial)
WZ = 010 ----- Mode 5 Ambiguity Velocity (cm/s radial)
>ck
[Parameters saved as USER defaults]
>cs
Deployed

```