

RDI 75kHz Long Ranger Deployment

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

Serial Number: 3867

Cruise: 2005-16

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

Station: ER05 Y2

Deployment Date: 1812, 21 July 2005 PDT

Position: 47° 58.405' N, 129° 05.059' W

Depth on Sounder: 2100-2300m

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	1830, 21 July 2005 UTC
Power	High

Predeployment Test 3867

```
[BREAK Wakeup A]
WorkHorse Broadband ADCP Version 16.21
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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)

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 = 05/07/20,22:41:01 --- Time Set (yr/mon/day,hour:min:sec)

EA = +00000 ----- Heading Alignment (1/100 deg)
EB = +00000 ----- Heading Bias (1/100 deg)
ED = 20000 ----- 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 = 05/07/20,22:41:40 --- Time Set (yr/mon/day,hour:min:sec)
>PS0
Instrument S/N: 3867
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 = +4.455094E-11
c2 = -1.355289E-06
c1 = +9.525920E-01
Offset = +2.836463E+01

Temp Sens Offset: -0.13 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:
88 00 00 02 FB B2 3A 09 CPU727-2000-00H
C9 00 00 02 48 A5 7A 09 HPI727-3007-00A
EE 00 00 02 FB B0 46 09 TUN727-1005-06X
F1 00 00 02 FB B4 46 09 DSP727-2001-06F
72 00 00 02 FB 79 FB 09 REC727-1004-06X
CE 00 00 02 48 B1 27 09 HPA727-3009-00A
>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.....PASS
SENSOR TESTS:
H/W Operation.....PASS
>PC2

```

Press any key to quit sensor display ...

```

Heading    Pitch    Roll    Up/Down    Attitude Temp    Ambient Temp
PRESSURE
132.960    2.890    -4.620    Down        20.380C          20.520C
9.7 kPa
>
[BREAK Wakeup A]
WorkHorse Broadband ADCP Version 16.21
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>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...
 26  28  31  32

```

```

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

```

>CZ

Powering Down

TIME SET

>>>>> Function starting 07/21/05 06:57:39 >>>>>

```

[BREAK Wakeup A]
WorkHorse Broadband ADCP Version 16.21
RD Instruments (c) 1996-2002
All Rights Reserved.
>TS050721065743

```

>CZ

Powering Down

[BREAK Wakeup A]

WorkHorse Broadband ADCP Version 16.21

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>ps0

Instrument S/N: 3867

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 = +4.455094E-11

c2 = -1.355289E-06

c1 = +9.525920E-01

Offset = +2.836463E+01

Temp Sens Offset: -0.13 degrees C

CPU Firmware: 16.21 [0]

Boot Code Ver: Required: 1.13 Actual: 1.13

DEM0D #1 Ver: ad48, Type: 1f

DEM0D #2 Ver: ad48, Type: 1f

PWRTIMG Ver: 85d3, Type: 5

Board Serial Number Data:

88 00 00 02 FB B2 3A 09 CPU727-2000-00H

C9 00 00 02 48 A5 7A 09 HPI727-3007-00A

EE 00 00 02 FB B0 46 09 TUN727-1005-06X

F1 00 00 02 FB B4 46 09 DSP727-2001-06F

72 00 00 02 FB 79 FB 09 REC727-1004-06X

CE 00 00 02 48 B1 27 09 HPA727-3009-00A

>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 28.364630 ----- Zero pressure reading

A? ----- Display Public Sensor Commands

>az
Pressure Offset Updated in NVRAM.

>az?

28.174095

>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 = 20000 ----- 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 = +0170 ----- Temperature (1/100 deg Celsius)
EX = 11111 ----- Coord Transform (Xform:Type; Tilts; 3Bm;
Map)
EZ = 1111111 ----- Sensor Source (C;D;H;P;R;S;T)

>ed21000

>ex00000

>r?

Available Commands:

RA ----- Number of Deployments Recorded
RB ----- Recorder Built-In-Test
RD ----- Open/Close Deployment File
RE ----- Recorder Erase
RF ----- Recorder Space used/free (bytes)
RI 1 ----- Auto Increment Deployment File
RN 3867_ ----- Set Deployment Name
RR ----- Recorder diRectory
RS ----- Recorder Space used/free (Mb)

RY ----- Upload Recorder Files to Host
R? ----- Display Recorder Commands

>ps0

Instrument S/N: 3867
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 = +4.455094E-11
c2 = -1.355289E-06
c1 = +9.525920E-01
Offset = +2.817409E+01

Temp Sens Offset: -0.13 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:

88 00 00 02 FB B2 3A 09 CPU727-2000-00H
C9 00 00 02 48 A5 7A 09 HPI727-3007-00A
EE 00 00 02 FB B0 46 09 TUN727-1005-06X
F1 00 00 02 FB B4 46 09 DSP727-2001-06F
72 00 00 02 FB 79 FB 09 REC727-1004-06X
CE 00 00 02 48 B1 27 09 HPA727-3009-00A

>t?

TB = 00:00:00.00 ----- Time per Burst (hrs:min:sec.sec/100)
TC = 00000 ----- Ensembles Per Burst (0-65535)
TE = 01:00:00.00 ----- 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 = 00:10.00 ----- Time per Ping (min:sec.sec/100)
TS = 05/07/21, 07:07:08 --- Time Set (yr/mon/day, hour:min:sec)
TT = 2005/07/21, 07:07:08 - Time Set (CCYY/MM/DD, hh:mm:ss)

>tb01:00:00.00

>tc48

>te00:00:01.00

>tp00:00.20

>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, 07:10:20 --- Time Set (yr/mon/day, hour:min:sec)
TT = 2005/07/21, 07:10:20 - Time Set (CCYY/MM/DD, hh:mm:ss)

>tf05/07/21,07:30:00

>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)
WL = 001,005 ----- Water Reference Layer: Begin Cell (0=OFF),
End Cell
WN = 064 ----- Number of depth cells (1-255)
WP = 00050 ----- 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)

>wp1

>wp?

WP = 00001 ----- Pings per Ensemble (0-16384)

>ck

[Parameters saved as USER defaults]

>cs

Final Deployment 3867 21 July 2005

[BREAK Wakeup A]

WorkHorse Broadband ADCP Version 16.21

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>ps0

Instrument S/N: 3867

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 = +4.455094E-11

c2 = -1.355289E-06

c1 = +9.525920E-01

Offset = +2.817409E+01

Temp Sens Offset: -0.13 degrees C

CPU Firmware: 16.21 [0]

Boot Code Ver: Required: 1.13 Actual: 1.13

DEMOM #1 Ver: ad48, Type: 1f
DEMOM #2 Ver: ad48, Type: 1f
PWRTIMG Ver: 85d3, Type: 5

Board Serial Number Data:

88	00	00	02	FB	B2	3A	09	CPU727-2000-00H
C9	00	00	02	48	A5	7A	09	HPI727-3007-00A
EE	00	00	02	FB	B0	46	09	TUN727-1005-06X
F1	00	00	02	FB	B4	46	09	DSP727-2001-06F
72	00	00	02	FB	79	FB	09	REC727-1004-06X
CE	00	00	02	48	B1	27	09	HPA727-3009-00A

>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 28.174095 ----- Zero pressure reading
A? ----- Display Public Sensor Commands

>az

Pressure Offset Updated in NVRAM.

>az?

26.216359

>experton

Expert Mode is ON

>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 = +000000 ----- Heading Alignment (1/100 deg)
EB = +000000 ----- Heading Bias (1/100 deg)
EC = 1500 ----- Speed Of Sound (m/s)
ED = 21000 ----- Transducer Depth (0 - 65535 dm)
EH = 000000 ----- Heading (1/100 deg)
EP = +00000 ----- Tilt 1 Sensor (1/100 deg)
ER = +00000 ----- Tilt 2 Sensor (1/100 deg)
ES = 35 ----- Salinity (0-40 pp thousand)
ET = +0170 ----- Temperature (1/100 deg Celsius)
EX = 000000 ----- Coord Transform (Xform:Type; Tilts; 3Bm;
Map)
EZ = 1111111 ----- Sensor Source (C;D;H;P;R;S;T)

```

>rb

RECORDER TESTS:

```

PC Card #0.....NOT DETECTED
PC Card #1.....DETECTED
Card Detect.....PASS
Communication.....PASS
DOS Structure.....PASS
Sector Test (Short).....PASS

```

Recorder tests complete.

>rn?

Current deployment name = 3867_

>rr?

Recorder Directory:

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

```

3867_000 000          762255 07-21-05   5:57:22p r  a [    2]

```

```

Bytes used on device #1 = 762255
Total capacity   = 1034469376 bytes
Total bytes used =      762255 bytes in 1 files
Total bytes free = 1033699328 bytes

```

>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, 18:02:28 --- Time Set (yr/mon/day, hour:min:sec)
TT = 2005/07/21, 18:02:28 - 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, 18:30:00.00 ERR 005: EXTRA PARAMETERS ENCOUNTERED
>tf05/07/21, 18:30:00
>tf?
TF = 05/07/21, 18:30:00 --- 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)
WL = 001,005 ----- Water Reference Layer: Begin Cell (0=OFF),
End Cell
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

```